

White Paper on Small and Medium Enterprises in Taiwan, 2009



**Small and Medium Enterprise Administration
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White Paper on Small and Medium Enterprises in Taiwan, 2009

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Foreword

As the financial tsunami swept the world during the second half of 2008, Taiwan was unable to escape from its powerful effect. A GDP growth rate of 0.06% was recorded in 2008, reflecting a 5.64 percentage point decrease over that for 2007. Although the economy has picked up slightly beginning in the second half of 2009, the GDP growth rate for the year 2009 was estimated on August 20 of this year to be -4.04%. As for the performance of SMEs in 2008, the indicators revealed a mixed picture. While the number of enterprises (1,234,749 firms) and the number of newly-established SMEs (86,325 firms) were slightly lower compared to 2007, the total sales (NT\$10,463 billion) and SME employment (7,966,000 people) in 2008 were higher than in the previous year.

To cope with the rapid and severe economic downturn as well as the highest unemployment rate so far recorded, the government has since late 2008 launched a wide variety of policies and measures to stimulate economic activity. Those policies in so far as they relate to SMEs are featured in this volume of the SME White Book. In addition, the SMEs in Taiwan also face major challenges from globalization and regionalization, the low carbon requirement, and ever-changing technologies, etc. These issues as well as the responses of both enterprises and the government are also the highlights of this volume.

In order to witness the development of SMEs in Taiwan, the Small and Medium Enterprise Administration has since 1992 published the White Paper on Small and Medium Enterprises in Taiwan on an annual basis, and the English version has been published since 1998. Each volume of the White Paper consists of three parts.

In Part One of the 2009 volume, an extensive array of statistical figures is provided to describe the development of SMEs from a wide variety of perspectives in 2008, which includes a comparison with their performance in previous years, as well as with large enterprises.

In Part Two of this volume, three special topics are tackled through an in-depth analysis to deal with the special challenges faced by SMEs in recent times. They are “The Role of SMEs in Regional Economic Development,” “Helping SMEs to Cope with the Challenges Posed by a Low-carbon Economy,” and “International Trends in Government Policies for Encouraging the Adoption of New Technology Applications and New Business Models by SMEs”

In Part Three, the major government policies and measures related to SMEs along with

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their resulting effects over the past year are examined. These policies and measures can be categorized into five areas, i.e., improving the environment for business operations, encouraging entrepreneurship, raising the capability in the application of new technologies and enhancing the provision of financing and guidance to SMEs. This part concludes with an examination of those policies especially initiated in 2009 to cope with the special economic situation due to the global depression. The Appendix to this volume also provides important SME statistics covering the years 2007-2008 for reference purposes.

The government has been helping the SMEs in various ways by ensuring that the necessary resources are available and that the overall business environment is conducive to them. Providing guidance to support the development of SMEs requires a long-term effort. It is hoped that the White Paper will give readers both in Taiwan and overseas a better understanding of Taiwan's SMEs, while at the same time providing a useful reference work to assist SME managers in their decision-making. Your comments on the content of the White Paper would be most welcome.



Dr. Sun-Quae Lai

Director General

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September 2009

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Summary

In the first half of 2008, although international oil prices and the prices of raw materials and grain rose dramatically, the economy as a whole remained in relatively good shape. By the second half of the year, however, the global financial crisis was giving rise to a pronounced contraction in market demand, bringing production to a halt at many factories and leading to wave after wave of layoffs. It was inevitable that small and medium enterprises (SMEs) would feel the effects of this global economic downturn. Just how bad was the situation becoming, and what was the government doing to help? These are some of the questions addressed in *the 2009 White Paper on Small and Medium Enterprises*, the content of which is outlined below:

Part One - The Current Status of Taiwan's SMEs

Changes in the Macroeconomic Environment

The state of the global economy was transformed dramatically in 2008, with a series of violent fluctuations. The first half of the year saw a pronounced rise in international oil and raw materials prices, creating serious inflationary pressure. By the second half of the year, however, things had gone to the opposite extreme, with the risk of deflation now the main cause for concern. The bankruptcy of Lehman Brothers in September 2009 sparked a global financial crisis, in which stock markets crashed and the derivatives bubble burst. The problems then spread to the real economy, with production falling and factories closing down; the economic growth rates of countries all over the world fell steadily, and consumer demand contracted. Subsequently, the impact of the downturn began to be felt in the production factor markets, too; the price of oil plummeted, real estate markets became depressed, and, most seriously of all, the implementation of wage freezes and unpaid leave were accompanied by large-scale layoffs, with unemployment rising all over the world. In global terms, this was the worst recession since the end of the Second World War. Fortunately, with governments throughout the world adopting measures to revitalize their economies, a recession that was originally expected to continue into 2010 appeared to be more or less over by March 2009.

Even in the midst of the recession, it was apparent that many business enterprises were not only surviving but actually thriving. Some of these firms had rationalized their operational management to improve the efficiency of resource utilization and overall

company performance; others had swum against the tide by expanding their scale of operations through franchising; yet others had focused on innovation and transformation, developing new products, new services, new production processes or new markets in such a way as to strengthen their position in existing markets while also developing new market opportunities. The example given by these companies shows that, even when the economy is depressed, business enterprises should be on the lookout for opportunities to transform themselves. While the contraction in global demand resulting from the financial crisis has been an unprecedented test of the fortitude of Taiwan's SMEs, there have been opportunities hidden within the crisis.

The Number of SMEs in Taiwan and their Annual Sales Performance

Analysis of Ministry of Finance VAT data shows that, as of 2008, there were approximately 1,235,000 SMEs in Taiwan, accounting for 97.70% of all business enterprises in the country. 80.28% of SMEs were in the service sector, with the wholesaling and retailing industry alone accounting for 52.51% of all SMEs in Taiwan. 57.72% of SMEs were organized as sole proprietorships; 46.40% of SMEs were located in Northern Taiwan. The total sales and domestic sales of all SMEs in Taiwan both fell slightly in 2008 compared to the previous year, while export sales rose slightly; domestic sales accounted for 84.28% of total sales. Manufacturing firms accounted for over 70% of the total exports of Taiwan's SMEs.

In 2008, 35.43% of Taiwan's SMEs were owned by women. 42.63% of female-owned SMEs had been in existence for over 10 years; around 65% were organized as sole proprietorships. Domestic sales accounted for 83% of the total sales of all female-owned SMEs. 85.88% of female-owned SMEs were in the service sector, with over 50% being in the wholesaling and retailing industry.

The Financial Status of Taiwan's SMEs

For the Taiwanese SME sector as a whole, funds and investments (as a share of total assets) fell slightly in 2007 compared to 2006. The current assets ratio fell dramatically, by 13.2 percentage points, while the fixed assets ratio rose by 12.01 percentage points (with land and buildings accounting for most of this increase). As regards liquidity, there was a pronounced fall in both the current ratio (a decline of 102.6 percentage points) and the quick ratio (103.04 percentage points). The long-term liabilities ratio, which had been rising steadily for three consecutive years, fell slightly in 2007 (by 0.08 percentage points) compared to 2006, while the short-term liabilities ratio rose slightly. For SMEs, the current liabilities' share of total liabilities stood at 87.61% in 2007, which was significantly higher than the corresponding figure for large enterprises (73.38%); this reflects the fact that SMEs have

been experiencing more short-term financing difficulties than large enterprises. Due mainly to the continued rise in international oil prices, SMEs' operating costs rose significantly in 2007 compared to the previous year; as a result, the operating margin for the SME sector as a whole was -55.10%, representing a serious loss.

As regards bank lending to SMEs, as of the end of December 2008, total outstanding loans to SMEs (including past-due loans) by ordinary commercial banks in Taiwan (including the Taiwan branches of foreign banks) came to NT\$3,167.8 billion, up from NT\$3,093.8 billion at the end of 2007. Taiwan's banks have thus increased their lending to SMEs over the past year or so.

SMEs' Human Resources

Although the global financial crisis had a severe impact on the Taiwanese economy in 2008, the total number of employed persons and the number of paid employees continued to rise. However, there was also an increase in the number of SME employees who became involuntarily unemployed, and a significant decline in the number of SME employees changing jobs. There was little change in average working hours in 2008; average wages rose in some industries but fell in others. Overall, the impact of the global financial crisis on SMEs in terms of human resource issues has been varied.

Despite the impact of the global economic downturn, the importance attached to manpower cultivation and training by SMEs appeared to increase in 2008. The number of companies taking part in joint manpower cultivation projects (involving multiple enterprises) rose, and there was a significant increase in the number of SME employees participating in professional training programs. However, there was a pronounced fall in total corporate spending on professional training, which suggests that most of the increase in participation was due to employees financing their own training activities.

SMEs' Foreign Trade and Investment Activities

In 2008, Taiwan's total foreign trade (imports and exports combined) rose by 6.6% compared to 2007. Exports, which accounted for 51.5% of total foreign trade, rose by 3.6%, while imports, accounting for 47.5%, rose by 9.8%. Taiwan's largest export markets were China (including Hong Kong), which took 39.0% of Taiwan's exports, and the U.S., which took 12.0%. Japan was the main source of imports, accounting for 19.3% of Taiwan's total imports, followed by China with 13.1% and the U.S. with 10.9%.

Despite the global economic downturn in 2008, Taiwanese investment in China continued to increase, with an annual growth rate of 7.23%. However, there was negative growth in Taiwanese investment in the U.S., Singapore, Thailand, Malaysia, and the

Philippines; investment in Thailand fell most dramatically, by 98.69%.

SME Innovation, R&D, Transformation and Upgrading

Today, Taiwan's SMEs are faced with a competitive environment that is more challenging than at any time in the recent past. Technology is changing all the time, product lifecycles are getting shorter, and the low-cost advantage from which Taiwanese manufacturers benefited in the past has been eroded. SMEs need to make effective use of technology to undertake innovation and R&D if they are to maintain a growth trajectory in this new, constantly changing environment. In 2007, total spending on R&D by Taiwan's SMEs came to NT\$37,437 million, 12.90% up on 2006, and representing a second consecutive year of growth.

The government provides guidance and funding support to encourage innovation and R&D, including the Industrial Technology Development Program (ITDP), the Small Business Innovation Research (SBIR) program, the Innovative Technology Applications and Services (ITAS) program, the Conventional Industry Technology Development (CITD) plan, the Leading Product program, and the Assist Service Sector Technology Development Plan. It is anticipated that these initiatives will help to stimulate increased spending on innovation and R&D, thereby helping Taiwan's SMEs to build up their R&D capabilities and raise their international competitiveness.

Part Two – Analysis of Important SME-related Topics

The Role of SMEs in Regional Economic Development

Besides helping to stimulate intra-regional trade, regional economic integration can also make a positive contribution towards boosting the overall volume of global trade. Taiwan's diplomatic isolation has put Taiwanese firms at a disadvantage when competing against countries that are members of regional trade groupings. In formulating their strategies to cope with the impact of regional economic integration, Taiwan's SMEs should focus on strengthening their own competitiveness, raising technological barriers to fend off competition from new entrants, making effective use of Taiwan's advantages with respect to individual economic zones, and strengthening collaboration with other enterprises on production and sales. The government needs to actively participate in the work of international organizations, adopt a more international mindset, and draw up strategies that will allow Taiwan to leverage the advantages conferred by its position within the regional division of labor. The government can also provide SMEs with the information they need to evaluate the level of risk involved in investing in or trading with individual economic zones, thereby helping them to cope with the challenges that the trend towards regional economic

integration is creating.

Helping SMEs to Face Up to the Challenges of the Low-carbon Economy

Greenhouse gas emissions are a global problem; the intensity of overall global greenhouse gas emissions is affected by increases and decreases in individual countries' emissions. Taiwan's energy intensity (measured as national energy consumption divided by real GDP) and carbon dioxide emissions coefficient (measured as the volume of carbon dioxide emissions divided by real GDP) are both slightly below the global average, but they are high by developed country standards. Taiwan was excluded from the Global Convention on Climate Change, but that does not mean that Taiwan can afford to ignore the pressure to reduce carbon dioxide emissions.

Taiwan is a relatively small economy. If Taiwan is to maintain an economic growth path, it needs to leverage the international division of labor, making effective use of specialized, large-scale production. The adoption of this strategy will necessitate changes in Taiwan's industrial structure, and in the structure of Taiwan's foreign trade. Taiwanese enterprises can no longer rely on low-cost production to make them reasonable profits. Faced with the dangers that global warming brings, many countries have been forced to introduce energy taxes and take other measures to reduce greenhouse gas emissions. SMEs cannot base their planning for the future on the assumption that they will continue to enjoy access to cheap energy; they certainly cannot expect the government to intervene to keep energy prices artificially low. The path that SMEs need to follow is to focus on upgrading, transformation, brand development, and close collaboration with large enterprises, as well as on the integration of manufacturing and services. SMEs will need to improve the energy-saving performance of their products and of their production equipment; some firms may even be able to grasp the opportunity to develop new business areas that are related to energy conservation.

Important Trends in Government Policies Aimed at Encouraging the Adoption of New Technology Applications and New Business Models by SMEs

Judging from the experience of other countries in helping SMEs to cope with the impact of new technologies, and from the results achieved by the A-Team (an alliance of bicycle manufacturing and bicycle component suppliers) in Taiwan, it seems that the conventional wisdom that SMEs are not good at collaborative innovation must be reassessed. As long as the government can create a fair, secure business environment, reducing the burden that SMEs need to bear and setting up dedicated agencies to provide SMEs with the assistance they need, then SMEs can build on these foundations to form consensus, integrate peripheral resources, and make effective use of the guidance measures that the government provides to

undertake collaborative innovation activities based on long-term vision. At the same time, the cluster effect – integrating government, industry, universities and research institutes – can help to minimize the negative impact of new technologies on SMEs and also ensure that these new technologies are used to help SMEs create value.

Part Three – The Government’s SME Policies, and the Outlook for the Future

As of 2008, there were over 1,230,000 SMEs in Taiwan, employing around 7.97 million people; SMEs constitute the foundation of Taiwan’s economy, and play a very important role in job creation and in the maintenance of social stability. Today, however, Taiwan’s SMEs are experiencing the impact of globalization, regional economic integration, the rise of the emerging economies and the low-cost competition this has brought, increased environmental awareness, rising oil and raw materials prices, and the impact of the global business cycle. At the same time, the growing importance of hi-tech innovation and the growth of franchise operations, chain stores and online businesses have challenged traditional SME business models and employment models. To help SMEs cope with these challenges, in 2008 the government introduced a number of new strategies and measures to provide support for Taiwan’s SMEs.

The third part of this *White Paper* examines the five key aspects of the government’s vision for supporting SME start-up and growth: creating an environment conducive to the development of first-class SMEs; building new business start-up and incubation platforms; enhancing the SMEs’ ability to make effective use of IT applications; strengthening the SME management guidance function; and integrating the SME financing mechanisms. The key work items implemented in 2008 are discussed, along with a comprehensive examination of the results achieved. The final section looks at the main SME strategies and measures that the government will be implementing in 2009.

Part One

Recent Development of SMEs



Chapter 1

Changes in the Macroeconomic Environment

The global economy experienced serious disruption in 2008. In the first half of the year, rising oil and raw materials prices raised the threat of inflation; then, in the second half of the year, things went to the other extreme, with concern about deflation. The bankruptcy of Lehman Brothers in September 2008 marked the beginning of a “financial tsunami” in which stock markets crashed and the market for derivatives evaporated. This had a knock-on effect on the real economy, where manufacturers began cutting production and closing factories. Economic growth rates for countries throughout the world were revised downwards again and again. Depressed market demand impacted the derived demand for production factors; the price of oil fell dramatically, the real estate market withered, and workers found themselves being asked to take unpaid leave, had their wages frozen, or were laid off. Unemployment rates rose steadily.

In this chapter, the changes in the social environment, the changes in the international and domestic economic environment and the way in which SMEs can respond to the crisis will be briefly discussed.

I Changes in the Domestic and International Social Environment

1. Unemployment Rising Throughout the World

According to Global Employment Trends 2009, published by the United Nations' International Labour Organization (ILO) on January 28, 2009, over the period from December 2007 (when the U.S. economy entered a recession) to December 2009, in the worst-case scenario, the global unemployment rate could rise from 5.7% to 7.1%.

Those workers who manage to keep their jobs will still be having a tough time. The number of workers on the poverty line (those whose household income per person is less than US\$2 a day) is set to rise to 1.4 billion, representing 45% of the total global workforce. The number of workers in extreme poverty (with household income per person of less than US\$1.25 per day) will rise to 200 million. The International Monetary Fund (IMF) estimated in July 2009 that, by the end of 2009, the global economic growth rate would be at its lowest

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level since the Great Crash of 1929, with an average growth rate of -3.8% for the developed nations.

In the emerging economies of Eastern Europe, rising unemployment may lead governments to abandon free-market, pro-Western policies. Protectionism is on the rise in the developed nations, which will have a negative impact on the future development of global trade. The recent large-scale strike in the U.K. to protest the use of Italian and Portuguese labor on a major construction project is symptomatic of this trend.

The employment situation in the U.S. began to deteriorate in December 2007; by early 2009, over 3.6 million jobs had been lost. Europe, Asia and the developing nations have also seen a dramatic rise in unemployment, with bad news being heard even from companies that in the past did everything possible to avoid laying off workers. For example, on February 12, 2009, leading Japanese electronics manufacturer Pioneer announced that it was closing down its television division, with 10,000 jobs (16% of the company's workforce) being lost worldwide.

For many younger workers, this is the first serious recession that they have lived through, leading to some extreme reactions. This is particularly true in the ex-communist countries; for example, Latvia experienced a series of riots and disturbances in early 2009.

The nations of Africa have also suffered from the effects of unemployment, in a different form. Remittances from people who had gone to work overseas have been falling steadily. 30-year-old Abdul, a Senegalese working in France, was a metalworker before he lost his job. Previously, he was able to send home 200 Euros a month to support his wife and three children; now, he is unable to send them anything. Abdul says that, from 2004 to 2008, he always had work, but now he can not find a job anywhere.

By mid-2008, unemployment was rising throughout the world, and this trend has continued into 2009; it is hard to predict when things may start to improve.

Despite the continuing increase in unemployment, by the beginning of 2009 there were signs that the global economy was starting to pick up again. However, while certain economic indicators suggested that the worst of the recession was over, there were warnings that this might prove to be a "jobless recovery." Chris Rupkey, chief economist at the Bank of Tokyo-Mitsubishi UJF, suggested that the world might be heading for a situation in which, while the economic downturn has ended, jobs continue to be lost. While some officials at the U.S. Federal Reserve are forecasting that the U.S. economy will return to growth by the second half of 2009, they are also forecasting that unemployment will remain above 7% until at least 2011.

2. The Threat of Stagflation

Since the financial crisis and the resulting economic downturn began, governments all over the world have resorted to “printing money” to keep their economies afloat. As a result, an already large money supply has grown even larger. Taking the U.S. as an example, since President Obama took office the budget deficit has risen by US\$2 trillion. The Federal Reserve started buying back government bonds, and in the first quarter of 2009 it pumped around US\$1.2 trillion into the financial markets. Adding this to the US\$11.7 trillion that the Bush administration spent on rescuing the financial sector and the wider economy, it can be seen that the U.S. has expended nearly US\$15 trillion in the space of just two years; the total value of the government bonds issued by the U.S. has risen to US\$65.5 trillion, more than the annual GDP for the entire planet. Leading investors have been warning for some time that, unless the Federal Reserve raises interest rates, the U.S. could find itself facing the same sort of horrendous inflation as Zimbabwe.

At a time when countries throughout the world are facing economic downturns and battling against deflation, the European Central Bank (ECB) has been warning of the danger of inflation, urging governments to be on their guard. When central banks were pumping money into the economy in March 2009, academics were warning that they risked creating a new bubble economy.

In the first half of 2008, when global oil prices were skyrocketing upwards and the price of raw materials was rising dramatically, there was widespread concern that overheating economies would begin to encounter serious inflation. Few would have expected that, within a matter of months, countries battered by the financial crisis and the economic downturn that came in its wake would be more concerned about the threat of deflation. Then, in the second quarter of 2009, with the global economy finally showing signs of recovery, and with consumer prices still low, the prospect of inflation reared its head again.

The warning given by the Nobel Prize-winning economist Milton Friedman in 1976 that inflation is fundamentally a monetary phenomenon should not be forgotten.

3. A Trend towards Reduced Consumption and Increased Saving

There have been widespread reports that, following the stock market collapse and the decline in house prices in the U.S., people are spending less and saving more. In the fourth quarter of 2008, the savings rate (after tax) in the U.S. rose to 2.9%, up from 1.2% in the third quarter; in the fourth quarter of 2007 it had been under 1%.

A manager at Moody’s consumer economics division noted that people who had lived through the Great Depression tended to be very conservative in their spending habits, and

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were heavy savers; he suggested that, in the future, more and more consumers would begin to save, because of having lost faith in the value of the assets that they hold.

At the same time, there is a growing trend towards price-awareness shopping. When everyone is feeling the pinch financially, people naturally tend to become more conservative in their buying habits. The business enterprises that benefit from this trend are those that can offer reasonable quality at low prices, such as Walmart in the U.S. and Uniqlo in Japan; these companies have been growing even in the midst of the financial crisis.

In his book *Affluenza*, John de Graff suggests that, because of the financial crisis, large numbers of middle-class people have seen their purchasing power eroded, and will no longer be able to maintain the high levels of spending that they could in the past; in some cases they will be struggling even to repay their debts, and may find themselves pushed out of the middle class entirely. This is the reason for the gradual emergence of a new lifestyle that emphasizes simple, down-to-earth living.

What type of website is most popular at the moment? It is the sites that teach people how to do DIY. The recession has led more and more people to look for ways to reduce their expenditure; as far as possible, people are doing things themselves rather than paying others to do them for them, hence the dramatic increase in the popularity of DIY websites.

New lifestyles are replacing the past emphasis on luxury and consumerism. The new values emphasize simplicity, the natural, and the sustainable.

4. The Global Energy Crisis Continues to Exist

For humanity as a whole, the limits to economic growth will not be set by any financial crisis, but rather by the constraints imposed by energy, resources, and the environment. The current global energy crisis has three aspects: Firstly, there is the combination of a rising demand for energy and limited energy resources. Since 2003, the global demand for petroleum has grown rapidly, exceeding the producers' ability to increase production. Following a steady, sustained rise, by 2008 the price of oil had reached an unprecedented level.

Secondly, the improvements in the efficiency of energy use since the mid-1980s have been very limited. Many developing nations have industrial sectors that are highly energy-intensive; the commercial, residential and transport sectors in the developed nations are similarly energy-hungry.

Thirdly, there is the fact that it will be at least another 20 – 30 years before alternative energy sources can meet all of the world's energy needs. Given that the possibilities for expanding petroleum production are limited, the world will continue to face high oil prices and the pressure of rising raw material costs.

In late 2008, the demand for energy fell off due to the impact of the global financial and economic crisis. While it may have seemed that the energy crisis was over, this is definitely not the case. Once the global economy starts to pick up again, energy shortages will reappear, and they can be expected to keep reappearing for at least the next two decades.

As regards the global environmental crisis, the key factor here is the rapid increase in energy consumption, leading to climate change. The consumption of petroleum inevitably leads to greenhouse gas emissions, which in turn have led to global warming and environmental change. Currently, the density of greenhouse gases in the atmosphere and global carbon dioxide emissions are still increasing. The issue of climate change will be a long-term problem, and is the single most important environmental issue that the world faces.

5. A Doubling of the Number of People Suffering from Hunger Worldwide

According to an official of the United Nations' Food and Agriculture Organization (FAO), as a result of the global financial crisis, the number of people in the world who are suffering from malnutrition has risen to over 1 billion, creating a major threat to world peace and stability.

United Nations statistics indicate that, due to the combined effects of war, drought, political instability, rising food prices and poverty, around one-sixth of the world's population are faced with long-term hunger. In comparison to the situation in 2008, in 2009 the number of people who did not have enough to eat (i.e., people with a daily calorie intake of less than 1,800 calories) had risen by around 100 million; this is the largest recorded increase in a single year.

The WFO estimates that, currently, 1.02 billion people are malnourished, and that this figure may rise by 11% in 2009. The number of hungry people is increasing more rapidly than the world's population. These figures suggest that the target set by the wealthy nations of reducing the number of malnourished people in the world by half by 2015 will almost certainly not be achieved.

II Changes in the International Economic Environment

The financial crisis has led to a rapid deterioration in the state of the global economy. International forecasting organizations have been revising their economic growth estimates for 2008 and their forecasts for 2009 steadily downwards.

By June 2009, according to estimates by Global Insight, the global economic growth rate had fallen from just over 2% in 2008 to -2.6% in 2009. Inflationary pressure had, however, eased; while, worldwide, prices had risen by 5.0% in 2008, the forecast growth rate for 2009 is only 1.5%. The volume of global trade is forecast to shrink by between 9.7% and 16% in 2009. Many countries experienced a rise in unemployment in 2008; the International Labor Organization (ILO) estimated that the total number of unemployed people in the world would increase by 59 million in 2009.

1. A Continuing Deterioration in the Global Economic Outlook

The global economic growth rate fell steadily over the course of 2008; Japan was into negative growth by the third quarter, and the U.S. and the Euro-zone by the fourth quarter. In the Asia-Pacific region, growth rates in individual countries fell more or less in concert. Forecasting organizations anticipate that the global economy will bottom out in the fourth quarter of 2009, and that the recovery will start to pick up speed in 2010.

According to the latest OECD data for December 2008, there was a more or less simultaneous economic downturn in all of the OECD member nations and in seven other leading industrialized countries. Leading indicators had been falling steadily since June 2007, with no sign of improvement. In five Asian nations, leading indicators had declined dramatically since the second quarter of 2008. There was also a serious deterioration in the economic health of non-OECD-member nations; for example, both India and Russia have experienced severe economic downturns.

According to a February 2009 IFO survey, the World Economic Climate indicator fell to 50.1 in the first quarter of 2009, a record low that represented six consecutive quarters of decline since the fourth quarter of 2007. Respondents were highly pessimistic regarding the outlook for global economic growth, although the degree of pessimism with respect to the outlook for the next six months had lessened slightly. The survey in May 2009 showed an increase in the indicator to 64.4 which indicates a return to an optimistic outlook for the next six months.

2. A Dramatic Contraction in Global Trade with Both Imports and Exports Falling Steeply

Due to rapidly falling demand, in the fourth quarter of 2008 the U.S., the Euro-zone and Japan all experienced declines in exports and imports. In Asia, the same was true of South Korea, Singapore and Taiwan, with Singapore and Taiwan suffering particularly severe falls. The IMF forecast in July 2007 that the overall volume of global trade would decline by 12.2% in 2009, marking the first instance of negative growth since 1982.

According to United Nations forecasts published in May 2009, global trade volume – which grew by 2.4% in 2008 – will decline by 11.1% in 2009, the biggest fall since the 1930s. Of the 41 countries studied by the U.N., 21 experienced a year-on-year decline in exports of over 30% in January 2009; these countries included Singapore, the Philippines, Russia, and Chile.

The dramatic decline in the volume of world trade is closely linked to the emergence of integrated global supply chains. The last few years have seen the developing nations participating actively in global production networks, and these countries have come to play an important role in global supply chains. Increased integration with the global economy has made these countries more exposed to the weaknesses of the global economic system.

3. Global Industrial Production Has Fallen Sharply, and Unemployment Has Been Rising

As a result of the contraction in global trade and falling domestic demand, global industrial production fell by 0.1% in 2008, the first decline since 2002. The U.S., the Euro-zone and Japan experienced negative growth of 2.2%, 2.4% and 3.3%, respectively. Economic forecasting organizations anticipate that global industrial production will fall by 8.3% in 2009, making for two consecutive years of decline.

International Labor Organization (ILO) estimates in May 2009 indicate that, worldwide, 8.4 million lost their jobs in 2008, and that the impact of the financial crisis and the global economic downturn will lead to a further 59 million job losses in 2009. Since the beginning of 2008, the world's major economies have seen a pronounced rise in unemployment; in particular, the unemployment rate in the U.S. rose from 4.9% in January 2008 to 7.2% in December 2008, and to 9.5% by June 2009; this was the highest figure for 25 years.

4. A Steady Worsening of the Global Financial Situation

Around the world, stock prices have been tending to fall; in 2008, most stock markets experienced a decline in share prices of over 40%. Shanghai's Class A Share index experienced the most dramatic fall; the Taipei weighted index also fell heavily, by 46.0%. In 2009, leading stock markets have continued to fall. While markets were showing signs of picking up again in May 2009, the real economy remained depressed, suggesting that there were no real grounds for renewed growth.

Major European and Asian currencies have been falling in value against the U.S. dollar; as a result of hedging demand, over the period between July 2008 and March 2009, while the Chinese Yuan and the Japanese Yen have risen against the U.S. dollar, most other countries have seen a continued fall in the value of their currencies against the dollar. The South

Korean Won has seen the most pronounced depreciation, followed by the British Pound.

Global credit markets remain depressed; as the impact of the global financial and economic crisis has spread, the scale of asset shrinkage in the banking sector has increased, and the banking sector as a whole has found itself in steadily worsening difficulties. While governments' interest rate cuts and efforts to boost liquidity have brought about a temporary improvement in inter-bank lending, the unfavorable economic outlook has led to a loss of confidence between banks and business enterprises, making banks more reluctant to lend, and thus making it harder for enterprises to obtain the funding they need. Overall, the global credit crunch has continued unabated.

The countries of East Asia are in a relatively good state financially. Although countries all over the world have been facing severe challenges since the financial crisis began, by and large the East Asian nations have less foreign debt than the U.S. and Europe, where the crisis started. The East Asian countries also benefit from substantial foreign exchange reserves and healthy government finances; as a result, the impact of the crisis in the East Asia region has been lessened.

5. The Pace of Regional Economic Integration Speeds Up

As the pace of bilateral trade negotiations under the World Trade Organization (WTO) framework has been very slow, since the 1990s many countries have been sounding out other countries about the possibilities for regional economic integration.

Since the formation of the European Union, there has been a steady movement towards regional economic integration in the Americas and in Asia – including ASEAN, China, Japan, South Korea, India, New Zealand and Australia (also known as “ASEAN + 3 + 3”) – so as to be able to compete effectively against the EU.

The free-trade agreements (FTAs) signed between China and the ten ASEAN member nations have already come into effect, and the negotiation of further FTAs between Japan, South Korea, ASEAN and China will soon be completed. The general trend in these agreements is towards reducing tariffs to zero.

This trend has led to lower transaction costs for the members of regional economic groupings. While the trade barriers between regional free trade areas remain high, which tends to hinder the integration of the global market as a whole, if an individual regional grouping is large enough its members can still exploit the principle of comparative advantage to implement a division of labor with other countries in the region.

The potential benefits to the member nations of a regional economic grouping are similar to those generally accruing from free trade, and so are the side-effects. Free trade

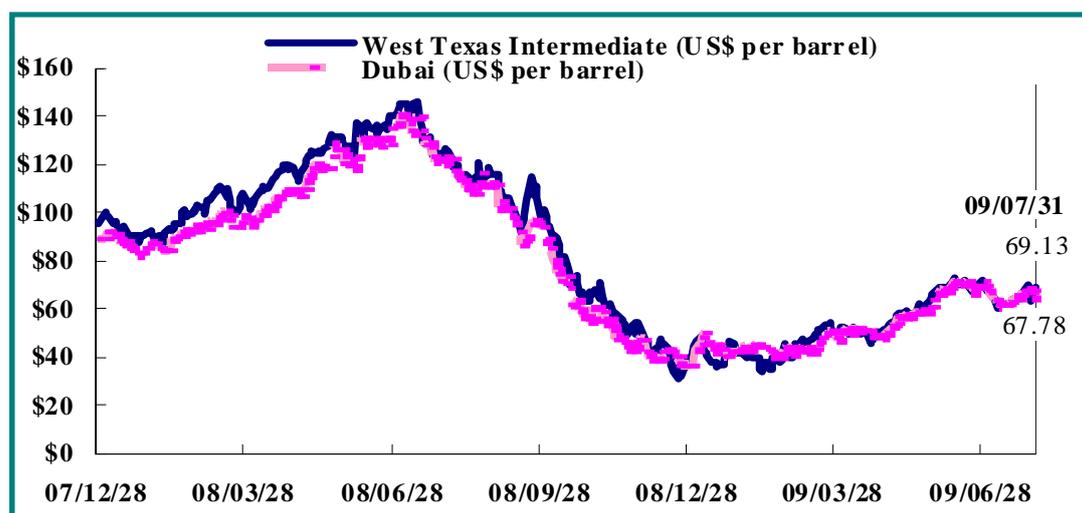
often leads to a redistribution of income within individual countries, because it reduces the disparities between the incomes of workers in different countries; low-skilled workers in rich nations tend to experience a fall in income, while low-skilled workers in poor nations see their incomes rise. In international trade theory, this is referred to as the “factor price equalization theorem.” If workers in the rich nations are unwilling to accept lower wages, then unemployment will rise.

6. International Oil Prices Have Risen, Fallen, and Then Risen Again

In the first half of 2008, oil prices were climbing steadily. Taking the West Texas Intermediate spot price as an example, as can be seen from the figure below, the price rose from US\$99.64 per barrel on January 2, 2008 to a record US\$147.27 per barrel on July 11, 2008. The price of crude oil then began to fall, due to a combination of market concerns about falling demand and the withdrawal of speculative capital from the crude oil futures and options markets. From September 2008 onwards, the global financial crisis and the resulting economic downturn pushed the price of oil down still further, so that by December 22, 2008 it had dropped to a level of around US\$31.12 per barrel, the lowest level since December 8, 2003. In 2009, with some economic indicators starting to pick up again, and with increased demand linked to emergency orders, oil prices began to rise again; by the end of March the price of crude oil had climbed back to approximately US\$50 per barrel (Figure 1-2-1).

Clearly, the price of oil is closely linked to the state of the global economy, although the activities of speculators can also have a significant impact on world oil prices.

Figure 1-2-1 International Oil Price Fluctuations, December 28, 2007 – July 31, 2009



Source: Bureau of Energy, Ministry of Economic Affairs, Petroleum Information Network.

III Changes in the Business Environment in Taiwan

1. A Pronounced Decline in Economic Growth in 2008

Looking at the indicators used by the Council for Economic Planning and Development, Executive Yuan to monitor the health of the Taiwanese economy, it can be seen that, whereas in January – April 2008 the Council still gave the economy a “green light”, indicating steady growth, by May this had been downgraded to a “yellow-blue light”, implying that the economy was on the brink of a downturn. The “yellow-blue light” continued into June, and the Council’s comprehensive index also fell by 2 points. July saw a “blue light”, representing a depression, and the comprehensive index fell heavily, by 4 points. August saw a slight improvement, to a “yellow-blue light”, but in September the economy moved back into “blue light” territory, and this continued through into December, and right through the first half of 2009. The Taiwanese economy was thus already in recession in the second half of 2008, and the overall state of the economy remained depressed in 2009 (Figure 1-3-1).

Figure 1-3-1 Economic Indicator Signals for Taiwan in 2008

Item		Month											
		Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Comprehensive Evaluation	Light Comprehensive Index Score	29	27	26	27	22	20	16	18	12	12	11	9
Financial Indicators	M1B money supply												
	Direct and indirect financing												
	Stock market index												
Non-financial Indicators	Industrial production index												
	Employment (non-agricultural sector)												
	Value of exports as reported by the Customs												
	Value of machinery and electronic equipment imports												
	Manufacturing sector sales												
	Wholesaling, retailing and restaurant industry sales index												

Notes: 1. Red light ; Yellow-red light ; Green light ; Yellow-blue light ; Blue light

2. The comprehensive index scores corresponding to the different “lights” are as follows: Red light: 45 – 38; Yellow-red light: 37 – 32; Green light: 31 – 23; Yellow-blue light: 22 – 17; Blue light: 16 – 9.

3. All indicators except the stock market index are seasonally adjusted; growth rates are year-on-year. The new indicator items have not been introduced as direct substitutes for the old items, so care should be taken when interpreting the data.

Source: Council for Economic Planning and Development website (<http://www.cepd.gov.tw>)

Viewed in terms of economic growth rate trends, as can be seen from Table 1-3-1, over the period 2003 – 2007 the Taiwanese economy displayed a fairly regular pattern of ups and downs, with annual growth rates of 3.50% in 2003, 6.15% in 2004, 4.16% in 2005, 4.80% in 2006, and 5.70% in 2007. However, in 2008 the growth rate fell dramatically to just above

zero, and some experts have been forecasting negative growth in 2009. These figures give some idea of the tremendous impact of the global financial crisis.

2. Prices Rose in the First Half of the Year, but Then Fell, as Did the Value of the NT Dollar against the US Dollar

Taiwan's consumer price index (CPI) rose in the first half of 2008, climbing to a growth rate of 5.81% in July before falling off dramatically; by December, the CPI growth rate had declined to 1.27%. This decline continued in 2009. The whole-year CPI growth rate for 2008 was 3.53%, up from 1.80% in 2007.

In 2008, the wholesale price index (WPI) was affected by fluctuating crude oil, metals and major grains prices. In the first half of the year, the WPI rose almost every month; by July, it had risen by 11.44%. This was followed by a dramatic decline; November saw a decrease of 5.72%, and December an even more pronounced fall of 9.64%. This decline continued in 2009. The whole-year WPI growth rate for 2008 was 5.15%, down from 6.47% in 2007 (Table 1-3-1).

Over the course of 2008, the New Taiwan Dollar first rose in value against the U.S. Dollar, and then fell later in the year. As of the end of December 2008, the exchange rate stood at US\$1 = NT\$32.86; the average for the whole year was US\$1 = NT\$31.517, compared to US\$1 = NT\$32.843 in 2007.

Table 1-3-1 Key Indicators for the Taiwanese Economy, 2003–2008

Year	Indicator	Economic Growth Rate	Wholesale Prices	Consumer Prices	Tax Revenue	Money Supply		Labor Force Participation Rate	Unemployment Rate	Exchange Rate (NT\$ to the US\$)
						M1B	M2			
2003		3.50	2.48	-0.28	2.45	11.8	3.8	57.34	4.99	33.98
2004		6.15	7.03	1.61	10.93	19.0	7.5	57.66	4.44	31.92
2005		4.16	0.62	2.31	13.14	7.1	6.2	57.78	4.13	32.85
2006		4.80	5.63	0.60	1.66	5.3	6.2	57.92	3.91	32.60
2007		5.70	6.47	1.80	8.30	6.4	4.3	58.25	3.91	32.44
2008		0.06	5.15	3.53	1.20	-2.9	2.7	58.28	4.14	32.86

Unit: %

Note: With the exception of the labor force participation rate and unemployment rate, all other indicators are expressed as growth rates.

Source: Directorate General of Budget, Accounting and Statistics (DGBAS), *Quarterly National Economic Trends*, May 2009; *Monthly Bulletin of Manpower Statistics*, April 2009.

3. A Slight Increase in Tax Revenue Compared to 2007

The preliminary estimate of the Taiwanese government's tax revenue in 2008 was NT\$1,755.7 billion, representing an annual growth rate of 1.2% (Table 1-3-1). Tax revenue fell for more than half of the taxation items; securities transaction tax saw the most pronounced fall, at 29.7%, followed by land value-added tax with 23.7% and gift tax with 23.3%. The fall in land tax revenue was also in double digits (13.2%).

The overall tax revenue target achievement rate was 100.6%; the achievement rate was highest for inheritance and gift tax, at 175.9%, followed by futures transactions tax, at 143.1%. The overall tax collection surplus was only NT\$20.1 billion, compared to NT\$107.8 billion in 2007.

4. Demand in the Money Market Remains Loose

In 2008, the daily average value for the growth rate of the M2 money supply tended to rise slowly but steadily over the course of the year; the whole-year increase was 2.7%, significantly lower than the 2007 figure of 4.3%. The daily average value for the growth rate in the M1B money supply fell from 6.4% in 2007 to -2.9% in 2008 (Table 1-3-1). However, if viewed from the demand side where the daily extra reserve in the banking system amounted to 29.8 billion in 2008 which was higher than the 21.3 billion recorded in 2007, the demand in the money market remained loose.

In response to the global financial crisis and the resulting economic downturn, the Central Bank cut the discount rate, the interest rate on loans with collateral and the interest rate on loans without collateral seven times between September 2008 and February 2009. This succeeded in keeping interest rates in Taiwan down. In July 2009, the inter-bank offered rate and the commercial paper interest rate fell to 0.1% and 0.67%, respectively.

5. Rising Unemployment in the Job Market

As a result of the global economic downturn, the unemployment rate in Taiwan began to rise steadily from May 2008 onwards. It climbed to over 4% in July, and by December had reached 5.03%; the whole-year average was 4.14% (Table 1-3-1), which was higher than the economies of any of the other “Four Asian Dragons”.

During the first three quarters of 2008, the average regular salary for paid employees continued to grow, but by the fourth quarter the impact of the global financial crisis was forcing businesses to cut salaries, and average regular salary fell by 1.94% year-on-year; this was the first time that salaries had fallen since the third quarter of 2003.

For the whole year, average monthly regular salary per paid employee rose by 0.28% in 2008; however, after allowing for inflation, real income fell by 3.13%, the highest decline ever.

6. Foreign Trade Slows with a Pronounced Fall in Taiwan’s Export Surplus

In the second half of 2008, there was a contraction in the overall volume of global trade. However, because of the growth in the first half of the year, total annual foreign trade in

Taiwan, at US\$496.48 billion, was still 6.6% higher than in 2007. Whole-year exports and imports were both higher than in 2007, and with annual exports of US\$255.66 billion and annual imports of US\$240.82 billion (3.6% and 9.8% up on 2007, respectively), Taiwan maintained an export surplus, although the surplus was 45.9% lower than in the previous year (Table 1-3-2).

Table 1-3-2 Taiwan's Foreign Trade Performance, 2003–2008

Units: US\$ billions; %

Indicator Year	Total Foreign Trade (Imports + Exports)		Exports		Imports		Trade Surplus or Deficit	
	Amount	Annual Growth Rate	Amount	Annual Growth Rate	Amount	Annual Growth Rate	Amount	Annual Growth Rate
2003	278.61	12.1	150.60	11.3	128.01	13.0	22.59	2.4
2004	351.13	26.0	182.37	21.1	168.76	31.8	13.61	-39.7
2005	381.05	8.5	198.44	8.8	182.62	8.3	15.82	16.2
2006	426.72	12.0	224.02	12.9	202.71	11.0	21.31	34.8
2007	466.07	9.2	246.72	10.1	219.35	8.2	27.43	28.6
2008	496.48	6.6	255.66	3.6	240.82	9.8	14.83	-45.9

Notes: Exports include re-exported goods; imports include re-imported goods.

Source: Bureau of Foreign Trade, Ministry of Economic Affairs, *Trade Statistics*, February 2009 (released on April 16, 2009).

7. China Remains Taiwan's Most Important Trading Partner

Of Taiwan's main trading partners, exports to China continued to grow in 2008. While exports to the U.S. continued to account for a large share of Taiwan's exports, the amount fell by 4.0%. Markets that accounted for more than 10% of Taiwan's total exports included, in order: China (26.2%), Hong Kong (12.8%), and the U.S. (12.0%). As regards imports, imports from Hong Kong continued to fall, and there was also a decline in imports from South Korea (-13.0%) and the U.S. (-0.7%) (Table 1-3-3).

Table 1-3-3 Taiwan's Exports to and Imports from Its Major Trading Partners in 2008

Units: US\$ billions; %

Indicator Country/Region	Exports			Imports			Total Foreign Trade (Imports + Exports)	
	Amount	Share of Total (%)	Annual Growth Rate (%)	Amount	Share of Total (%)	Annual Growth Rate (%)	Amount	Annual Growth Rate (%)
Total	255.66	100.0	3.6	240.82	100.0	9.8	148.32	-45.9
China (including Hong Kong)	99.58	39.0	-0.8	32.90	13.7	10.3	66.67	-5.5
China (excluding Hong Kong)	66.89	26.2	7.2	31.42	13.1	12.1	35.47	3.1
Hong Kong	32.69	12.8	-13.9	1.49	0.6	-18.1	31.20	-13.7
U.S.A.	30.80	12.0	-4.0	26.33	10.9	-0.7	4.46	-19.8
Japan	17.56	6.9	10.2	46.53	19.3	1.3	-28.96	-3.5
Singapore	11.68	4.6	11.2	4.84	2.0	1.0	6.83	19.8
South Korea	8.71	3.4	11.7	13.18	5.5	-13.0	-4.48	-39.2
Other	87.33	34.2	9.2	117.04	48.6	20.6	-29.70	74.3

Notes: Exports include re-exported goods; imports include re-imported goods.

Source: Ministry of Finance, Customs Import/Export Data, December 2008 (released on January 7, 2009).

The share of exports going to China (including Hong Kong) fell slightly, from 40.71% in 2007 to 39.0% in 2008; in absolute terms, exports to China declined by 0.8%. Imports from China (including Hong Kong) accounted for 13.7% of Taiwan's total imports in 2008; the value of imports from China continued to grow, rising by 10.3%.

8. The Central Government's Finances Have Continued to Worsen

The annual tax revenue of Taiwan's central government has remained more or less unchanged over the past three years, at around NT\$1.6 trillion. However, over the same period central government expenditure has been rising steadily, reaching NT\$1.8 trillion by 2009, higher than the NT\$ 1.7 trillion in 2008. Adding to this the special funding sources exploited by the government in its efforts to reinvigorate the economy in recent years, there has been a pronounced rise in the budget deficit. By 2009, the central government budget deficit had risen to NT\$391.4 billion, which was far higher than the NT\$ 236.4 billion in 2008.

The government has been issuing bonds to support its expansive fiscal policy; this represents an extraordinary measure adopted to cope with extraordinary circumstances. While in the short term it will inevitably cause a worsening of the budget deficit, by helping to support steady economic growth, it should actually help to boost government tax revenue over the long run, in line with the government's goal of using fiscal policy to support national construction, and using national construction to grow tax revenue.

In the future, the government will need to continue with its promotion of tax reform, and establish effective mechanisms for managing expenditure. Improving the efficiency of government finances will help to boost the government's income, reduce its debt burden, and lay the foundations for sound finances over the long term.

Table 1-3-4 The Central Government's Finances, 2005–2009

Unit: NT\$ billions

Year	Indicator	Settled Account of Revenue and Expenditure		Overall Surplus	Budget Surplus	
		Revenue	Expenditure		Regular Budget Surplus	Special Budget Surplus
2005		1,464.5	1,567.0	-203.4	-102.5	-100.9
2006		1,546.4	1,529.8	-94.3	16.6	-110.9
2007		1,635.4	1,552.0	-12.5	83.4	-95.9
2008		1,620.3	1,711.7	-236.4	-91.4	-145.0
2009		1,675.1	1,809.7	-391.4	-134.6	-256.8

Notes: 1. The figures given under the Regular Budget Surplus are the settled budget surplus in the cases of the years 2005, 2006 and 2007, and the legally approved surplus in the cases of the years 2008 and 2009.

2. The figures given under the Special Budget Surplus are the settled budget surplus in the case of the years 2005, 2006 and 2007, the legally approved surplus in the case of the year 2008, and the draft surplus in the case of the year 2009.

Sources: The Directorate General of Budget, Accounting and Statistics (DGBAS) *Government Finance Statistics Manual* for Q4, 2008; the "2009 Central Government Budget Review" press release issued by DGBAS on January 15, 2009.

IV How SMEs are Responding to the Crisis – Change and Transformation

1. For Business Enterprises, Economic Downturns Represent Both a Challenge and an Opportunity

The financial crisis that began in the second half of 2008 has led to a severe global economic downturn, and has had a serious impact on all sectors of the economy in Taiwan. According to statistics released by the Directorate General of Budget, Accounting and Statistics (DGBAS), industrial production fell by 11.35% year-on-year in June 2009; for the manufacturing sector, the decline was 11.5%, and export orders fell by 10.91% year-on-year. In the service sector, despite the stimulus to consumer spending provided by the government's decision to distribute free consumer coupons to every citizen, which enabled the restaurant industry to achieve positive growth of 1.2% in June 2009, for the wholesaling, retailing and restaurant sector as a whole the growth rate was -11.15%. The consensus among international experts is that the economy will not make a full recovery any time soon.

Faced with a severe economic downturn, most business enterprises have been looking for ways to streamline their operations and cut costs, so that they will be in good shape to take advantage of the upturn when it finally comes. However, there is a considerable body of research indicating that, during an economic downturn, efforts to improve the cost structure or reduce expenditure are not enough, and may even create obstacles to future growth; firms assume that they have taken the steps needed to cope with their immediate difficulties, but neglect the improvements needed to build long-term competitiveness and ensure efficient utilization of resources. What this means is that, even if the enterprise is able to survive the current downturn, it will still experience difficulty in facing the new competitive environment that emerges after the economy starts to pick up again.

In reality, many enterprises do more than just survive economic downturns; they emerge from them stronger than they were before. Some firms achieve this feat through managerial measures, such as rationalization of their operations to improve the efficiency of resource utilization and strengthen the company's fundamentals. Others buck the trend by expanding their scale of operations (for example, through franchising) to build market share; yet others focus on innovation and transformation, leveraging the development of new products, new services, new production processes or new markets to strengthen their position and identify new opportunities. The fact that they are in the midst of an economic downturn should not lead enterprises to neglect opportunities for change or transformation.

Flexibility, innovation, and the ability to respond rapidly to changing circumstances are

the hallmarks of Taiwan's small and medium enterprises (SMEs), underpinned by Taiwan's strongly entrepreneurial culture. This culture came under threat for a time in the 1980s during the speculative excesses of the bubble economy, but subsequently the gradual movement of manufacturing industry offshore, the Asian financial crisis of 1997, the bursting of the dot-com bubble, and the impact of successive waves of deflation and inflation led SMEs to undertake an ongoing process of transformation to adapt to the changing business environment. While the contraction of global demand resulting from the current economic crisis certainly constitutes an unprecedented challenge for Taiwan's SMEs, it also represents an opportunity for further change and transformation.

2. The Economic Downturn Forces Firms to Innovate

As the saying goes, "necessity is the mother of invention." In their efforts to combat the impact of the financial crisis and the global economic downturn, enterprises have the opportunity to develop new business areas and make a bigger contribution to the welfare of humanity.

One obvious example of this is the fact that, since the global economic downturn began, e-commerce has been growing rapidly. People have been cutting back on shopping trips, eating out less often, and spending more time at home. Online shopping has grown in popularity as a result, leading to a significant expansion of the e-commerce market.

Economists believe that economic downturns encourage more people to start their own business. For individuals who have lost their job, know that the chances of finding another one are slim, and are running out of time and money, becoming an entrepreneur offers a way out.

In the past, many enterprises that were founded in someone's garage later grew to become major corporations that changed the world; IBM, Microsoft, Amazon and Google are just some of the more obvious examples. It is probably safe to say that, at a time when many people are feeling worried and depressed because of the current state of the economy, some major new innovation that will transform the world we live in is already starting to take shape. The potential for important breakthroughs is particularly high in the energy sector and in the field of biotechnology.

The Internet represents a very useful, inexpensive tool in this regard; it has made the process of taking a concept through to the commercialization stage much simpler and less expensive. Entrepreneurs can use the Internet to find business partners, look for suppliers, perform bookkeeping and interact with customers; the Internet has made life much more convenient for young entrepreneurs. SME owners who are finding themselves in difficulties

in the current economic downturn should try to think of it as an opportunity to display some entrepreneurial spirit and discover their latent potential. Adopting this kind of attitude will help them to help themselves, while also making a contribution to the ongoing development of Taiwanese industry.

3. Future Trends, Their Impact on SMEs, and the Measures That SMEs Should Take in Response

Over the past few years, business enterprises have been exposed to the full impact of globalization, the emergence of the knowledge economy, and the rapid pace of change in technology. They have experienced an increase in the speed with which resources can be moved around the world, a shortening of product life-spans, an intensification of competition, dramatic fluctuations in the prices of raw materials, the internationalization of the supply chain, energy shortages, etc. These changes on the production side have been paralleled by changes in demand, as the advanced nations have become characterized by smaller families, aging populations, and increasing income inequality (the “M-shaped Society”), as well as growth in environmental consciousness, etc. Developments of this kind are not confined to the advanced economies; they are now also being seen in Taiwan. These are long-term trends, which it will be difficult to change in the near future, and they will have a pronounced impact both on how markets develop in the future, and on the policies that governments adopt. SMEs will need to pay close attention to these trends when seeking to identify future business opportunities and establish themselves in emerging niche markets.

To take one example, the bicycle industry and related industries have demonstrated impressive resistance to the current global economic downturn. Initially, the growth in demand for bicycles was fuelled by skyrocketing oil prices; more recently, changes in consumer attitudes – with a greater emphasis on environmental protection, energy saving, and health – have played a key role, enabling the bicycle industry to maintain positive growth when other industries are suffering. Bicycle manufacturers have been working actively to develop strong brands, and have been on the lookout for new business opportunities (for example in bicycle rental, bicycle accessories, sports apparel, etc.). A supporting role has been played by the completion of public construction projects such as bicycle paths, and the development of cycling holiday packages and cycling hotels by the tourist industry.

Regarding the emergence of the M-shaped Society, Ohmae Kenichi (2006) offered suggestions for SMEs that may offer useful lessons for business enterprises in Taiwan. Ohmae believes that the ongoing collapse of the middle class will lead to societies that are highly polarized in terms of income, and that will affect the market. The new lower class,

accounting for the largest share of the population, will represent the core market segment, and this will have a pronounced impact on the strategies that business enterprises adopt.

In the future, the key to achieving sales growth will lie in winning the loyalty of lower-middle / working class consumers.

The strategies that Ohmae proposes, and for which he is able to offer examples of successful adoption, include maximizing production process efficiency, creating durable products that can be repurposed and reused, developing a cost structure that provides a high-quality feel at low prices, and offering consumers what he calls “new luxury goods.”

In his discussion of marketing strategy for the M-shaped Society, Ohmae notes that, faced with the growing income polarization of consumers, business enterprises will need to decide whether they are going to try to market their products to both the high-income and low-income segments, or focus on just one. If a firm decides to concentrate on the high-income segment, it must ask itself whether it has the ability to offer these consumers products that provide adequate value. If, on the other hand, an enterprise opts to focus on the low-income segment, then it will need to be able to develop a revenue structure appropriate to this market.

Taiwan has for many years now been leveraging the outsourcing model to compensate for the relatively small size of its business enterprises. For the SME sector, new business opportunities have been created by the rise in unemployment in recent years, and by the growth of the online economy; major developments include the growth in franchising and chain stores, the emergence of highly-specialized “micro-enterprises” (such as making a business out of online auction activity, operating mini-stores, etc.), and the “stay-at-home economy.” Innovation in the “platform economy” has also played an important role here. Academic studies of the collaboration models employed by Taiwanese SMEs have shown that SMEs are already moving away from playing the role of OEM provider towards brand-based marketing and a greater emphasis on coordination and integration; SMEs are working proactively to formulate market development strategies that will help them cope with the impact of the global economic downturn.

Chapter 2

The Number of SMEs in Taiwan, and SME Sales Performance

Despite the impact of rising oil prices and dramatic increases in the prices of raw materials and foodstuffs, in the first half of 2008 the global economy as a whole continued to grow steadily. However, in the second half of the year the world economy was hit by the impact of the financial crisis in the U.S., including the bankruptcy of major investment banks. The resulting global economic downturn led to a credit crunch and lower consumer spending and investment. As a result, the whole-year economic growth rate for the global economy as a whole was only 2.2%. In Taiwan, with both industrial production and exports falling, the whole-year growth rate for 2008 was 0.06%.

This chapter makes extensive use of Ministry of Finance Tax Data Center VAT data to examine the changes in the number of SMEs in Taiwan (including the number of female-owned SMEs) and in SME sales performance.

Based on VAT data and human resources data compiled by the Directorate General of Budget, Accounting and Statistics (DGBAS), the total number of SMEs in Taiwan, their combined annual sales (including domestic sales and export sales), the number of employed persons and paid employees, and the respective annual growth rates, are shown in Table 2-0-1. It is found that the decline in the number of enterprises and total annual sales in 2008 compared to 2007 was more pronounced among larger enterprises than among SMEs. The reductions in the number of SMEs in Taiwan, total SME sales and SME domestic sales did not exceed 0.5%, and SME exports actually increased by 0.35% compared to 2007.

According to DGBAS manpower statistics data, the number of employed persons and paid employees working in SMEs both rose in 2008 compared to 2007 (by 0.34% and 1.59%); however, the corresponding increases for large enterprises were higher (3.89% and 3.91%).

It can thus be seen that, judging from the changes in the number of firms and in sales performance, the impact of the global financial crisis in the second half of 2008 on SMEs appears to have been rather limited, whereas large enterprises were more seriously affected. The data for the number of employed persons and number of paid employees are whole-year averages, and constitute lagging indicators, hence the slight increase in these figures.

Table 2-0-1 The Number of Enterprises in Taiwan, Their Annual Sales, the Number of Employed Persons and the Number of Paid Employees in 2008

Units: firms; NT\$ millions; thousand persons; %

Indicator	Size	All Enterprises	SMEs	Large Enterprises
No. of enterprises		1,263,846	1,234,749	29,097
Share of total		100.00	97.70	2.30
Annual growth rate		-0.22	-0.20	-1.01
Total annual sales		35,239,137	10,462,696	24,776,441
Share of total		100.00	29.69	70.31
Annual growth rate		-1.80	-0.18	-2.47
Domestic sales		25,762,915	8,817,989	16,944,927
Share of total		100.00	34.23	65.77
Annual growth rate		-1.96	-0.28	-2.81
Export sales		9,476,222	1,644,707	7,831,515
Share of total		100.00	17.36	82.64
Annual growth rate		-1.37	0.35	-1.73
No. of employed persons		10,403	7,966	1,479
Share of total		100.00	76.58	14.22
Annual growth rate		1.06	0.34	3.89
No. of paid employees		7,902	5,469	1,475
Share of total		100.00	69.21	18.67
Annual growth rate		2.17	1.59	3.91

Note: The figures given for the number of employed persons and number of paid employees for "all enterprises" include 958,000 government employees, accounting for 9.21% of employed persons and 12.12% of paid employees.

Sources: 1. Ministry of Finance Tax Data Center, VAT data for 2008.

2. DGBAS, *Monthly Bulletin of Manpower Statistics*, 2008.

The following analysis examines the changes in the scale and structure of Taiwan's SME sector, by focusing on the number of enterprises, total sales, domestic sales, export sales and others.

I The Number of SMEs in Taiwan

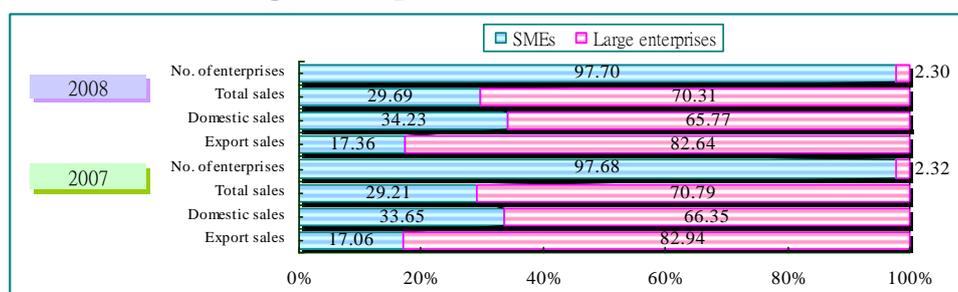
Analysis of Ministry of Finance VAT data shows that there were approximately 1,235,000 SMEs in Taiwan in 2008, representing 97.70% of all business enterprises in the country. A total of 80.28% of Taiwan's SMEs were found in the service sector, with the wholesaling and retailing industry accounting for the largest share, at 52.51%. In addition, 57.72% of SMEs were sole proprietorships, and 45.10% of SMEs had been in existence for over 10 years. SMEs were heavily concentrated in Northern Taiwan (46.40% of the total). The changes in the structure of Taiwan's SME sector in 2008 are outlined below:

1. In 2008, SMEs Accounted for 97.70% of All Business Enterprises in Taiwan

In 2008, there were 1,234,749 SMEs in Taiwan, representing a decline of 2,521 firms (0.20%) compared to 2007. SMEs represented 97.70% of the total number of business enterprises in Taiwan (1,263,846 firms), representing a very slight increase compared to the

figure for 2007 (97.68%); this was due to the fact that the number of large enterprises (29,097 firms) fell by 1.01% compared to 2007, a greater decline than was seen in the number of SMEs (Table 2-0-1 and Figure 2-1-1).

Figure 2-1-1 The Shares of Key Performance Indicators Held by SMEs and Large Enterprises, 2007–2008



Source: Ministry of Finance Tax Data Center, VAT data for 2008.

2. Over 80% of SMEs Are in the Service Sector

In 2008, there were 991,262 SMEs in the service sector, representing 80.28% of all SMEs in Taiwan. This figure represented a decline of 2,687 firms (0.27%) compared to 2007. There were 232,513 SMEs in the industrial sector, accounting for 18.83% of all SMEs, and representing a decline of 0.01%; there were 10,974 SMEs in the agricultural sector, accounting for 0.89% of SMEs, and representing an annual increase of 1.76% (Table 2-1-1).

Table 2-1-1 The Shares of All SMEs in Taiwan Held by Individual Sectors and Key Industries, 2004–2008

Sector/Industry	Units: enterprises; %				
	2004	2005	2006	2007	2008
All SMEs	1,176,986	1,226,095	1,244,099	1,237,270	1,234,749
Annual growth rate	2.60	4.17	1.47	-0.55	-0.20
Total (all sectors)	100.00	100.00	100.00	100.00	100.00
Agricultural sector	0.91	0.91	0.88	0.87	0.89
Industrial sector	18.24	18.11	18.13	18.79	18.83
Manufacturing	11.31	10.94	11.64	10.77	10.68
Construction	6.76	7.01	7.34	7.37	7.47
Service sector	80.85	80.98	80.99	80.33	80.28
Wholesaling and retailing	53.25	53.14	52.86	52.87	52.51
Hotel and restaurant	7.81	8.33	8.62	8.79	8.92

Source: Ministry of Finance Tax Data Center, VAT data for 2008.

Over the last five years, the service sector has consistently accounted for more than 80% of all SMEs in Taiwan. The service sector's share was highest in 2006, at 80.99%, and lowest in 2008, at 80.28%. The industrial sector's share was lowest in 2005 (18.11%) and highest in 2008 (18.83%). The decline in the number of SMEs in the service sector in recent years is largely attributable to a fall in the number of SMEs in the wholesaling and retailing

industry, particularly retailers.

3. The Wholesaling and Retailing Industry Accounts for Over Half of All SMEs in Taiwan

The wholesaling and retailing industry's share of all SMEs has consistently exceeded 50% over the past five years but their number fell by 5,715 in 2008 compared to 2007. This was mainly attributable to a fall in the number of retailers (Table 2-1-2).

Table 2-1-2 The Structure of the Wholesaling and Retailing Industry in Taiwan in 2008

Unit: enterprises

Item	All Enterprises	SMEs		Large Enterprises
		2008-2007	2008-2007	
Total	664,222	-5,809	648,376	15,846
Wholesalers	291,990	-256	280,558	11,432
Retailers	372,232	-5,553	367,818	4,414

Source: Ministry of Finance Tax Data Center, VAT data for 2007 – 2008.

According to the results of a survey undertaken by the Ministry of Economic Affairs, the main reasons for the decline in the number of small and medium-sized retailers in the past few years are as follows: (1) Many retailers that are run as sole proprietorships are too small to compete effectively against the big discount stores and chain stores; also, in many cases the younger generation are not interested in taking over the running of the business. (2) Small and medium-sized retailers often have inadequate digital skills and an insufficiently high level of e-enablement, resulting in inadequate managerial and marketing capabilities. (3). Over the last few years, the steady expansion of large retailers (including discount stores, department stores and shopping malls) has led to intense price competition, in which SMEs are unable to compete effectively. (4) The rising cost of materials has made it difficult for many SMEs to stay in business.

In addition, consumer behavior has been changed by the advances in technology in recent years, including the growth of online shopping (e-commerce), television shopping channels, online auctions, SOHO businesses and Internet start-ups. This trend has had a significant negative impact on the traditional retail sector.

4. SMEs Are Heavily Concentrated in the Major Metropolitan Areas of Taiwan's Western Coastal Plain and Their Satellite Cities/Counties

An examination of the distribution of Taiwan's SMEs by county and city shows that, in 2008, the 10 counties and cities with the largest number of SMEs mostly comprised major metropolitan areas of Taiwan's western coastal plain or their satellite cities/counties. Taipei City had the largest number of SMEs, at over 200,814 (representing 16.26% of all SMEs in

Taiwan), followed by Taipei County with just over 193,257 (15.65%). Kaohsiung City was in third place with 91,689 SMEs (7.43%).

There were 9 counties and cities in the Taiwan-Fukien region that saw an increase in the number of SMEs in 2008; the largest increases were posted by Taoyuan County (677 additional SMEs), Hsinchu County (287) and Kaohsiung County (234). The biggest declines in the number of SMEs were seen in Taiwan's two major metropolises: Taipei City (1,296 SMEs) and Kaohsiung City (434).

5. Approximately 58% of SMEs Are Sole Proprietorships

In 2008, there were 712,846 sole proprietorships in Taiwan, accounting for 56.40% of all business enterprises in the country. A total of 712,689 SMEs were run as sole proprietorships, representing 57.72% of all business enterprises (Table 2-1-3).

Table 2-1-3 Business Enterprises in Taiwan by Form of Organization, 2007–2008

Units: enterprises; %

Form of Organization	Year	2007				2008			
		SMEs	Share of Total	Large Enterprises	Share of Total	SMEs	Share of Total	Large Enterprises	Share of Total
Total		1,237,270	100.00	29,394	100.00	1,234,749	100.00	29,097	100.00
Corporation limited by shares		115,421	9.33	17,878	60.82	114,186	9.25	17,516	60.20
Limited corporation		341,931	27.64	6,460	21.98	342,688	27.75	6,385	21.94
Unlimited corporation		48	0.00	2	0.01	53	0.00	2	0.01
Unlimited corporation with limited liability shareholders		16	0.00	0	0.00	15	0.00	0	0.00
Partnership		19,112	1.54	52	0.18	19,367	1.57	63	0.22
Sole proprietorship		716,871	57.94	155	0.53	712,689	57.72	157	0.54
Foreign company		2,866	0.23	651	2.21	3,012	0.24	671	2.31
Representative office of foreign company		124	0.01	25	0.09	122	0.01	25	0.09
Branch office		25,468	2.06	2,648	9.01	26,290	2.13	2,638	9.07
Other		15,413	1.25	1,523	5.18	16,327	1.32	1,640	5.64

Source: Ministry of Finance Tax Data Center, VAT data for 2008.

6. SMEs Continue to Demonstrate More Flexibility Than Large Enterprises in Terms of Market Entry and Exit

As of 2008, 6.99% of Taiwan's SMEs had been in existence for less than 1 year, 34.26% had been in existence for less than 5 years, and 45.10% had been in existence for over 10 years. By comparison, only 0.82% of large enterprises had been in existence for less than 1 year, whereas 14.13% had been in existence for less than 5 years, and 63.64% had been in existence for over 10 years.

It can thus be seen that SMEs continue to display more flexibility than large enterprises when it comes to market entry and market exit. Even so, just over 45% of SMEs have been able to stay in business for over 10 years.

7. The Percentage of SMEs That Have Been in Existence for Over 20 Years Has Been Rising Steadily

During the 14-year period from 1995 to 2008, the percentage of SMEs that had been in existence for less than 1 year peaked in 2005 at 10.22%, and reached its lowest point in 2008 at 6.99%. In 1995, only 8.84% of SMEs had been in existence for over 20 years; since then, this percentage has risen steadily, rising to 20.47% by 2008 (Table 2-1-4).

Table 2-1-4 The Percentage of SMEs in Taiwan That Have Been in Existence for Particular Lengths of Time

Year	Age	Less than 1 year	1 – 2 years	2 – 3 years	3 – 4 years	4 – 5 years	5 – 10 years	10 – 20 years	Over 20 years
1995		10.15	10.31	8.77	8.40	6.28	20.66	26.58	8.84
1996		9.30	10.02	8.47	7.36	7.24	20.72	27.26	9.63
1997		10.19	8.91	8.09	7.02	6.25	21.62	24.80	13.11
1998		9.94	9.77	7.23	6.83	6.03	21.68	24.31	14.22
1999		9.50	9.61	7.93	6.09	5.92	22.06	23.91	15.00
2000		9.04	9.27	7.86	6.72	5.30	22.57	23.58	15.66
2001		8.79	8.68	7.60	6.69	5.85	21.89	24.17	16.33
2002		8.28	8.51	7.01	6.39	5.78	21.16	25.26	17.61
2003		9.30	9.40	7.41	5.97	5.15	20.57	23.97	18.23
2004		10.17	8.79	7.73	6.32	5.18	19.83	23.71	18.28
2005		10.22	8.81	7.75	6.37	5.19	19.83	23.63	18.20
2006		8.71	9.69	7.35	6.69	5.64	19.87	23.32	18.73
2007		7.51	8.57	8.09	6.31	5.86	20.11	23.97	19.58
2008		6.99	7.25	7.34	7.08	5.61	20.64	24.63	20.47

Note: From 2005 onwards, the data include SMEs located in Lienchiang County.

Source: Ministry of Finance Tax Data Center, VAT data.

II SMEs' Sales Performance

According to VAT data, in 2008 SMEs' shares of total sales, domestic sales and export sales by all enterprises in Taiwan were 29.69%, 34.23% and 17.36%, respectively. The changes in the SMEs' total sales, domestic sales and export sales structure are discussed below.

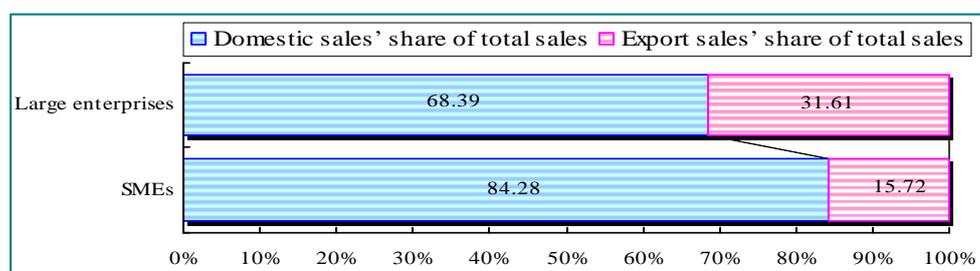
1. Domestic Sales Account for 84% of SMEs' Total Sales; the Industrial Sector Accounts for 50% of Total Sales, with Manufacturing Industry Posting the Highest Sales

In 2008, Taiwanese business enterprises (of all sizes) achieved total sales of NT\$35,239.1 billion, representing a decrease of 1.8% compared to 2007. SMEs' total sales amounted to NT\$10,462.7 billion, NT\$19.2 billion (0.18%) down on 2007. Large enterprises' total sales amounted to NT\$24,776.4 billion, representing a decline of 2.47%; this fall was larger than that recorded by the SME sector, and as a result SMEs' shares of total sales by all enterprises rose slightly, from 29.21% in 2007 to 29.69% (Table 2-0-1).

In 2008, domestic sales accounted for 84.28% of SMEs' total sales, with export sales accounting for 15.72%; for large enterprises the corresponding figures were 68.39% and

31.61%, respectively. Although domestic sales account for the lion's share of total sales in both cases, it is clear that large enterprises are, on the whole, more export-oriented than SMEs (Figure 2-2-1).

Figure 2-2-1 Ratio of Export Sales to Domestic Sales by Enterprise Size in 2008



Source: Ministry of Finance Tax Data Center, VAT data for 2008.

The total sales of SMEs in the industrial sector accounted for 50.09% of the total sales of all SMEs in 2008; the share held by SMEs in the service sector was 49.75%, while the share held by agricultural SMEs was just 0.16%. SMEs in the industrial sector and those in the service sector both experienced a decline in total sales in 2008 compared to 2007, while SMEs in the agricultural sector saw their sales rise (Table 2-2-1).

Examination of the changes in SME sales by sector over the past five years shows that the service sector's share of total sales fell to below 50% for the first time in 2007, with the service sector being overtaken by the industrial sector. This situation continued into 2008, with SMEs in the industrial sector posting higher total sales than those in the service sector.

Table 2-2-1 The Shares of Total Sales Held by SMEs in Individual Sectors and Key Industries, 2004–2008

Units: NTS\$ millions; %

Sector/Industry \ Year	2004	2005	2006	2007	2008
Total sales (all SMEs)	9,726,721	10,000,220	10,241,215	10,481,910	10,462,696
Annual growth rate	11.69	2.81	2.41	2.35	-0.18
Total (all sectors)	100.00	100.00	100.00	100.00	100.00
Agricultural sector	0.14	0.14	0.14	0.15	0.16
Industrial sector	48.54	48.20	48.85	50.04	50.09
Manufacturing	37.24	36.75	37.11	38.39	38.24
Construction	10.82	10.94	11.22	10.69	10.89
Service sector	51.33	51.65	51.01	49.81	49.75
Wholesaling and retailing	37.43	37.95	37.41	37.27	37.14
Hotel and restaurant	2.01	2.07	2.12	2.16	2.25

Source: Ministry of Finance Tax Data Center, VAT data for 2004 – 2008.

In 2007 and 2008, consumer spending contracted because of the impact of rising raw material prices and the global economic downturn. In 2007 the total sales of SMEs in manufacturing industry overtook those of SMEs in the wholesaling and retailing industry. In

2008, manufacturing SMEs posted total sales of NT\$4 trillion, accounting for 38.24% of total sales by all SMEs, while the wholesaling and retailing industry was in second place with total sales of NT\$3,885.4 billion, representing 37.14% of total sales by all SMEs.

2. The Disparity in Average Total Sales per Enterprise between Large Enterprises and SMEs in 2008 Was Very Large

According to Ministry of Finance Tax Data Center VAT data, average total sales per enterprise (all enterprises) in 2008 came to NT\$27.88 million. Average total sales by large enterprises were NT\$851.51 million, approximately 100 times as large as the average for SMEs (NT\$8.47 million).

Average sales per enterprise in the industrial sector were NT\$67.03 million, around 3.5 times the average for the service sector (NT\$18.93 million). Average sales per enterprise among large enterprises in the industrial sector were NT\$1,679.5 million, approximately 75 times the average for SMEs in this sector (NT\$22.54 million). In the service sector, average sales per enterprise for large enterprises came to NT\$617.5 million, or roughly 118 times the average for SMEs in the service sector (NT\$5.25 million) (Table 2-2-2).

Table 2-2-2 Average Total Sales per Enterprise by Sector and by Enterprise Size in 2008

Units: enterprises; NT\$ millions

Sector	No. of Enterprises	Total Sales	Average Sales per Enterprise
All sectors	1,263,846	35,239,137	27.88
SMEs	1,234,749	10,462,696	8.47
Large enterprises	29,097	24,776,441	851.51
Industrial sector	238,928	16,015,173	67.03
SMEs	232,513	5,241,188	22.54
Large enterprises	6,415	10,773,985	1,679.50
Service sector	1,013,914	19,193,391	18.93
SMEs	991,262	5,205,225	5.25
Large enterprises	22,652	13,988,166	617.52
Agricultural sector	11,004	30,574	2.78

Source: Ministry of Finance Tax Data Center, VAT data for 2008.

3. Domestic Sales by Service Sector SMEs Account for 54% of Total SME Domestic Sales; SMEs in the Wholesaling and Retailing Industry Have the Highest Domestic Sales of Any Industry

In 2008 SMEs' domestic sales accounted for 34.23% of total domestic sales and the share per sector was highest in the service sector, at 53.79%. The service sector's share of total domestic sales has exceeded 50% for five years in a row (Table 2-2-3).

The wholesaling and retailing industry and manufacturing industry held the highest shares of total SME domestic sales in 2008, with a combined total of 71.24% (Table 2-2-3).

Table 2-2-3 The Shares of Total Domestic Sales Held by SMEs in Individual Sectors and Key Industries, 2004–2008

Units: NT\$ millions; %

Sector/Industry \ Year	2004	2005	2006	2007	2008
Total domestic sales (all SMEs)	8,278,347	8,481,397	8,678,992	8,842,983	8,817,989
Annual growth rate	12.16	2.45	2.33	1.89	-0.28
Total (all sectors)	100.00	100.00	100.00	100.00	100.00
Agricultural sector	0.14	0.14	0.15	0.16	0.16
Industrial sector	45.26	44.37	45.00	46.14	46.05
Manufacturing	32.18	31.04	31.30	32.50	32.15
Construction	12.53	12.73	13.09	12.53	12.77
Service sector	54.60	55.49	54.85	53.71	53.79
Wholesaling and retailing	38.94	39.83	39.23	39.09	39.09
Hotel and restaurant	2.34	2.43	2.49	2.56	2.67

Source: Ministry of Finance Tax Data Center, VAT data for 2004 – 2008.

4. The Industrial Sector Accounts for 72% of Total SME Export Sales; Manufacturing Industry's Share of Total SME Export Sales is 71%

In 2008 SMEs' export sales accounted for 17.36% of total export sales while the large enterprises' share was 82.64%, 1.73 percentage points down on 2007.

The industrial sector accounted for the largest share of SME export sales in 2008, at 71.77%; the service sector's share was 28.12%. There has been a steady increase in the industrial sector's share of total SME exports over the past five years, with a corresponding decline in the service sector's share (Table 2-2-4).

The SME export share in the manufacturing industry was 70.85% in 2008 and the share in the wholesaling and retailing industry was 26.67%. Over the last five years, there has been a steady increase in the contribution of manufacturing SMEs to overall SME export sales, while the share held by SMEs in the wholesaling and retailing industry has declined.

Table 2-2-4 The Shares of Total Export Sales Held by SMEs in Individual Sectors and Key Industries, 2004–2008

Units: NT\$ millions; %

Sector/Industry \ Year	2004	2005	2006	2007	2008
Total export sales (all SMEs)	1,448,374	1,518,823	1,562,224	1,638,927	1,644,707
Annual growth rate	9.08	4.86	2.86	4.91	0.35
Total (all sectors)	100.00	100.00	100.00	100.00	100.00
Agricultural sector	0.14	0.14	0.10	0.11	0.11
Industrial sector	67.25	69.61	70.25	71.09	71.77
Manufacturing	66.13	68.65	69.35	70.19	70.85
Service sector	32.61	30.25	29.64	28.79	28.12
Wholesaling and retailing	28.85	27.47	27.27	27.43	26.67

Source: Ministry of Finance Tax Data Center, VAT data for 2004 – 2008.

5. A Steady Decline in SMEs' Share of Exports, but a Slight Increase in SMEs' Export-orientedness

Using Ministry of Finance Tax Data Center data, total SME exports in 1997 amounted to NT\$1,250 billion, representing an SME export contribution rate of 26.42%. Since then, SME export sales have risen steadily in absolute terms, climbing to NT\$1,650 billion by 2008, but the SME export contribution rate has fallen, declining to 17.06% in 2007 before picking up again slightly to 17.36% in 2008 (Table 2-2-5).

If we calculate the SMEs' export-orientedness as the SME export sales' share of the SMEs' total sales, we can see that this indicator has never exceeded 20% in any year since 1997. The highest level that it ever reached was 19.01%, in 2001; the lowest was in 2004, when SME export-orientedness was just 14.89%. More recently, this indicator rose from 15.64% in 2007 to 15.72% in 2008.

Table 2-2-5 The Export Contribution Rate and Export-orientedness of Taiwan's SMEs, 1997–2008

Units: NT\$ billions; %

Year	All Enterprises	SMEs			
	Export Sales (A)	Total Sales (B)	Export Sales (C)	Export Contribution Rate (C/A)	Export-orientedness (C/B)
1997	4,735	6,864	1,251	26.42	18.22
1998	5,184	6,908	1,233	23.79	17.85
1999	5,675	6,905	1,198	21.11	17.35
2000	6,841	7,567	1,370	20.03	18.11
2001	6,297	6,842	1,300	20.65	19.01
2002	7,008	7,495	1,351	19.28	18.02
2003	7,333	8,709	1,328	18.11	15.25
2004	8,493	9,727	1,448	17.05	14.89
2005	8,631	10,000	1,519	17.60	15.19
2006	8,732	10,241	1,562	17.89	15.25
2007	9,608	10,482	1,639	17.06	15.64
2008	9,476	10,463	1,645	17.36	15.72

Note: SME export contribution rate = (SME export sales / Total export sales) × 100%.

SME export-orientedness = (SME export sales / SME total sales) × 100%.

Source: Ministry of Finance Tax Data Center, VAT data, consecutive years.

The changes in the export contribution rate and export-orientedness of Taiwan's SMEs are generally attributed to the transformation in the structure of Taiwanese industry and in the form taken by exportation, the raising of the technology level of Taiwanese industry, a reorientation towards high-value-added and low-energy-consuming industries (such as the electronics and IT industry, precision machinery manufacturing, and metallurgy), and the emergence of new hi-tech industries (including the information industry, consumer electronics, the semiconductor industry, aerospace, advanced materials, biotech and pharmaceuticals), which have shifted the focus of Taiwan's export trade towards large enterprises. Rather than exporting products themselves, SMEs have become satellite firms of large enterprises, undertaking specialized production of particular types of industrial

materials and components. SMEs have thus continued to make a major contribution to Taiwan's export performance; it is simply that there has been a shift away from direct exportation by SMEs themselves towards indirect exports via large enterprises, with SMEs playing a supporting or ancillary role. SMEs are still contributing to Taiwan's export performance; it is just that their contribution has become less visible.

6. In 2006, SMEs Accounted for 41.85% of the Combined Output of the Industrial, Commercial and Service Sectors, and 40.32% of Gross Production Value

According to the Industry, Commerce and Service Census conducted by the Directorate General of Budget, Accounting and Statistics every five years, as of 2006 there were 1,105,000 industrial, commercial and service sector enterprises in Taiwan, of which 99.24% were small and medium-sized enterprises (Table 2-2-6). According to the 2006 Census data, the gross production value of all small and medium-sized enterprises combined in that year was NT\$3,931.6 billion, representing 41.85% of the total for all enterprises. Small and medium-sized enterprises accounted for 41.85% of total gross production value. Large enterprises' average gross production value per enterprise was 48 times higher than that of SMEs.

Table 2-2-6 Number of Enterprises, Output and Gross Production Value in the Industrial and Service Sectors in 2006

Units: enterprises; NT\$ millions

Sector	No. of Enterprises	Share of total	Output		Gross Production Value		Average Gross Production Value per Enterprise
			Output	Share of total	Gross Production Value	Share of total	
Industrial and Service Sectors Combined	1,105,102	100.00	23,934,031	100.00	9,394,216	100.00	850
Large enterprises	8,397	0.76	14,285,074	59.69	5,462,577	58.15	65,054
SMEs	1,096,705	99.24	9,648,957	40.31	3,931,639	41.85	1,366
Medium-sized enterprises	223,129	20.19	7,629,422	31.88	2,743,463	29.20	1,230
Small enterprises	873,576	79.05	2,019,535	8.44	1,188,176	12.65	136
Industrial Sector	226,048	20.45	15,502,853	64.77	4,642,662	49.42	2,054
Large enterprises	1,642	0.15	9,474,833	39.59	2,956,277	31.47	180,041
SMEs	224,406	20.31	6,028,020	25.19	1,686,385	17.95	1,721
Medium-sized enterprises	94,416	8.54	5,486,337	22.92	1,461,401	15.56	1,548
Small enterprises	129,990	11.76	541,683	2.26	224,984	2.39	173
Service Sector	879,054	79.55	8,431,178	35.23	4,751,554	50.58	541
Large enterprises	6,755	0.61	4,810,241	20.10	2,506,300	26.68	37,103
SMEs	872,299	78.93	3,620,937	15.13	2,245,254	23.90	1,126
Medium-sized enterprises	128,713	11.65	2,143,085	8.95	1,282,062	13.65	996
Small enterprises	743,586	67.29	1,477,852	6.17	963,192	10.25	130

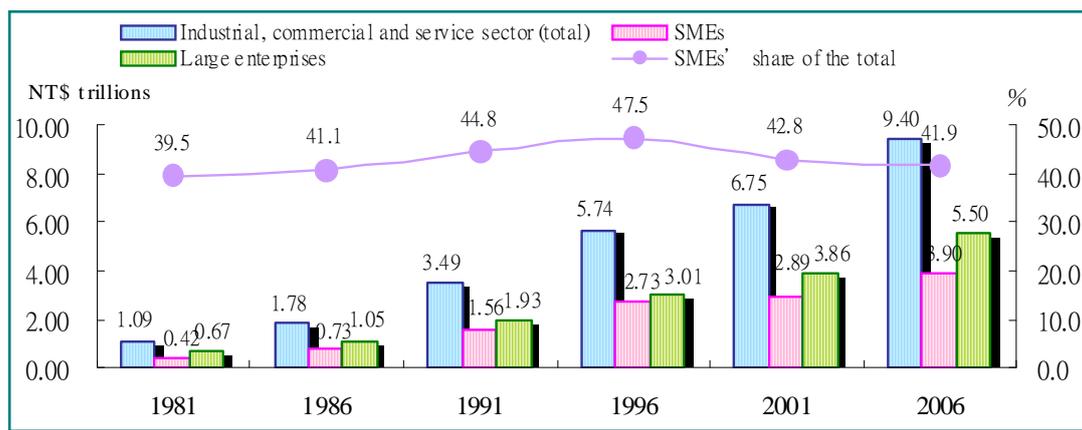
Note: Large enterprises are defined as enterprises in the manufacturing, construction and mining and quarrying industries with 200 or more employees, and enterprises in other industries with 50 or more employees. Small enterprises are defined as enterprises with fewer than 5 paid employees and enterprises or self-employed persons with no paid employees (but which may use unpaid family labor) with less than 5 persons; medium-sized enterprises are defined as those enterprises that do not fall under either of the other two categories.

Source: Industry, Commerce and Service Census, 2006.

7. Based on the Six Most Recent Industry, Commerce and Service Censuses, the SMEs' Share of Gross Production Value Was Highest in 1996

Over the period 1981 – 2006, the Industry, Commerce and Service Census was implemented on six occasions. Based on these six censuses, the SMEs' share of total gross production value for all enterprises was highest in 1996, being 47.5% (Figure 2-2-2).

Figure 2-2-2 SMEs' Share of Industrial, Commercial and Service Sector Production Value, 1981–2006



Source: Industry, Commerce and Service Census, consecutive years.

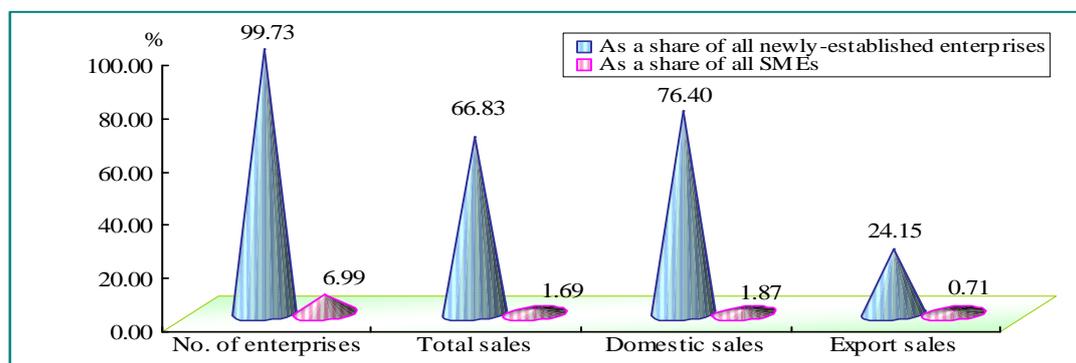
III New Enterprise Establishment

Newly-established enterprises are defined as those that have been in existence for less than one year. In 2008, 99.73% of newly-established enterprises were SMEs, and their main source of revenue was domestic sales.

1. The Vast Majority of the New Enterprises Established in 2008 Were SMEs

In 2008, a total of 86,325 new SMEs were established in Taiwan, representing 99.73% of all new enterprises. However, these newly-established SMEs represented only 6.99% of all SMEs in Taiwan, the lowest level since 1995 (Table 2-1-4 and Figure 2-3-1). Newly-established SMEs' total sales accounted for 66.83% of the total sales of all newly-established enterprises. Domestic sales accounted for 93.38% of the total sales of newly-established SMEs, with export sales accounting for only 6.62%.

Figure 2-3-1 Newly-established SMEs as a Share of All Newly-established Enterprises and as a Share of All SMEs



Source: Ministry of Finance Tax Data Center, VAT data for 2008.

2. A Decline in Newly-established SMEs' Contribution to the Performance of All SMEs

As can be seen from Table 2-3-1, as a share of the total for all SMEs, the number of newly-established SMEs and newly-established SMEs' total sales, domestic sales and export sales all fell to their lowest level for five years in 2008. There has thus been a steady decline in the contribution of newly-established SMEs to the overall performance of all SMEs in Taiwan.

Table 2-3-1 Newly-established SMEs' Shares of Performance Indicators for All SMEs, 2004–2008

Units: enterprises; NT\$ millions; %

Indicator		Year	2004	2005	2006	2007	2008
No. of Enterprises	All SMEs		1,176,986	1,226,095	1,244,099	1,237,270	1,234,749
	Newly-established SMEs		109,883	125,313	108,320	92,956	86,325
	Newly-established SMEs' share of total		9.34	10.22	8.71	7.51	6.99
Total Sales	All SMEs		9,726,721	10,000,220	10,241,215	10,481,910	10,462,696
	Newly-established SMEs		271,468	277,631	236,973	209,849	176,941
	Newly-established SMEs' share of total		2.79	2.78	2.31	2.00	1.69
Domestic Sales	All SMEs		8,278,347	8,481,397	8,678,992	8,842,983	8,817,989
	Newly-established SMEs		242,473	256,192	221,496	192,999	165,219
	Newly-established SMEs' share of total		2.93	3.02	2.55	2.18	1.87
Export Sales	All SMEs		1,448,374	1,518,823	1,562,224	1,638,927	1,644,707
	Newly-established SMEs		28,995	21,438	15,477	16,851	11,722
	Newly-established SMEs' share of total		2.00	1.41	0.99	1.03	0.71

Note: Data for 2003 onwards include firms located in Lienchiang County.

Source: Ministry of Finance Tax Data Center, VAT data, consecutive years.

3. Newly-established SMEs in the Wholesaling and Retailing Industry Represent the Largest Group of SMEs, and Account for the Largest Share of Total Sales

As regards the situation in individual industries, the wholesaling and retailing industry holds the largest shares of the total number of newly-established SMEs (47.40%), total sales by newly-established SMEs (53.08%), domestic sales by newly-established SMEs (52.01%), and export sales by newly-established SMEs (68.10%). The hotel and restaurant industry had the second largest number of newly-established SMEs (15.83% of the total). In terms of the share of total sales and domestic sales, the construction industry was in second place, behind the wholesaling and retailing industry; manufacturing industry was in second place in terms of export sales, accounting for 26.79% of total export sales by newly-established SMEs.

4. The Service Sector Accounts for the Largest Share of the Number of Enterprises, Total Sales and Export Sales of Newly-established SMEs

In 2008, the service sector held the largest shares of the total number of newly-established SMEs (85.13%), total sales by newly-established SMEs (75.58%), domestic sales by newly-established SMEs (75.83%), and export sales by newly-established SMEs (71.98%) (Table 2-3-2). Newly-established SMEs are thus most likely to be found in the service sector, and the service sector accounts for the bulk of newly-established SME sales revenue.

Table 2-3-2 Newly-established SMEs by Sector in 2008

Units: enterprises; NT\$ millions; %

Sector	No. of Newly-established SMEs	Share of Total	Total Sales by Newly-established SMEs		Domestic Sales by Newly-established SMEs		Export Sales by Newly-established SMEs	
			NT\$ millions	%	NT\$ millions	%	NT\$ millions	%
All Sectors	86,325	100.00	176,941	100.00	165,219	100.00	11,722	100.00
Agricultural sector	340	0.39	311	0.18	309	0.19	1	0.01
Industrial sector	12,292	14.20	42,900	24.25	39,618	23.98	3,283	28.00
Service sector	73,693	85.13	133,730	75.58	125,292	75.83	8,438	71.98

Source: Ministry of Finance Tax Data Center, VAT data for 2008.

IV Number and Sales Performance of SMEs Owned by Female Entrepreneurs

The Directorate General of Budget, Accounting and Statistics estimated that, in 2008, the female workforce in Taiwan totaled approximately 4.68 million people, representing 49.7% of the total workforce. There were 4.5 million female employed persons, of which 31.9% were engaged in professional or technical occupations.

1. Over 30% of Enterprises in Taiwan Are Owned by Women

In 2008, there were 1,255,619 enterprises in Taiwan where it was possible to determine the sex of the business owner. 444,805 of these enterprises (35.43% of the total) were owned by women; 64.57% of the enterprises were owned by men (Table 2-4-1).

Only 18.12% of large enterprises were owned by women, but 35.81% of SMEs were female-owned. SMEs accounted for 98.83% of all female-owned enterprises.

Table 2-4-1 Number of Enterprises and Sales Performance in 2008 – by Sex of Business Owner

Units: enterprises; NT\$ millions; %

Indicator	Enterprise Size		
	All Enterprises	SMEs	Large Enterprises
No. of enterprises	1,255,619	1,228,285	27,334
Female-owned enterprises	444,805	439,852	4,953
Female-owned enterprises' share of total	35.43	35.81	18.12
Male-owned enterprises	810,814	788,433	22,381
Total sales	32,197,930	10,187,150	22,010,781
Female-owned enterprises	4,412,148	2,321,344	2,090,804
Female-owned enterprises' share of total	13.70	22.79	9.50
Male-owned enterprises	27,785,782	7,865,806	19,919,976
Domestic sales	24,068,099	8,655,511	15,412,588
Female-owned enterprises	3,673,718	2,071,307	1,602,411
Female-owned enterprises' share of total	15.26	23.93	10.40
Male-owned enterprises	20,394,382	6,584,204	13,810,177
Export sales	8,129,831	1,531,638	6,598,193
Female-owned enterprises	738,430	250,037	488,394
Female-owned enterprises' share of total	9.08	16.32	7.40
Male-owned enterprises	7,391,401	1,281,601	6,109,799

Notes: 1. Whether an enterprise was male-owned or female-owned was determined using the registered identity of the business owner.

2. The totals for all enterprises given in this table do not conform to those given in Table 2-0-1 because some enterprises are registered as being owned by other enterprises or by foreigners; these enterprises were excluded from the data used in this table.

Source: Ministry of Finance Tax Data Center, VAT data for 2008.

2. Approximately 43% of Female-owned Enterprises Have Been in Existence for Over 10 Years

As of 2008, 36.46% of female-owned enterprises in Taiwan had been in existence for less than 5 years, as compared to 63.54% that had been in existence for 5 years or more. The corresponding percentages for male-owned enterprises were 32.24% and 67.76%. Some 42.63% of female-owned enterprises had been in existence for over 10 years, compared to 47.25% of male-owned enterprises (Table 2-4-2).

3. 65% of Female-owned Enterprises Are Sole Proprietorships

Sole proprietorships were the most common form of organization for both female-owned and male-owned enterprises in 2008, followed by limited corporations and corporations limited by shares. The percentage of female-owned enterprises was slightly higher than the corresponding percentage for male-owned firms (Table 2-4-3).

Table 2-4-2 Enterprise Age Structure in 2008 – by Sex of Enterprise Owner

Units: enterprises; %

Enterprise Age \ Sex of Owner	All Enterprises		Female-owned Enterprises		Male-owned Enterprises	
	No. of enterprises	Share of total	No. of enterprises	Share of total	No. of enterprises	Share of total
Total	1,255,619	100.00	444,805	100.00	810,814	100.00
Less than 1 year	85,719	6.83	33,090	7.44	52,629	6.49
1 – 2 years	89,401	7.12	34,358	7.72	55,043	6.79
2 – 3 years	90,843	7.23	34,162	7.68	56,681	6.99
3 – 4 years	87,851	7.00	34,405	7.73	53,446	6.59
4 – 5 years	69,778	5.56	26,167	5.88	43,611	5.38
5 – 10 years	259,326	20.65	93,013	20.91	166,313	20.51
10 – 20 years	311,979	24.85	105,719	23.77	206,260	25.44
20 years or more	260,722	20.76	83,891	18.86	176,831	21.81

Source: Ministry of Finance Tax Data Center, VAT data for 2008.

Table 2-4-3 The Number of Enterprises in 2008 – by Form of Organization and Sex of Enterprise Owner

Units: enterprises; %

Form of Organization \ Sex of Enterprise Owner	All Enterprises		Female-owned Enterprises		Male-owned Enterprises	
	No. of enterprises	Share of total	No. of enterprises	Share of total	No. of enterprises	Share of total
Total	1,255,619	100.00	444,805	100.00	810,814	100.00
Corporation limited by shares	128,373	10.22	29,413	6.61	98,960	12.21
Limited corporation	347,640	27.69	112,769	25.35	234,871	28.97
Unlimited corporation	55	0.00	17	0.00	38	0.00
Unlimited corporation with limited liability shareholders	15	0.00	5	0.00	10	0.00
Partnership	19,409	1.55	6,353	1.43	13,056	1.61
Sole proprietorship	712,321	56.73	287,467	64.63	424,854	52.40
Foreign company	2,046	0.16	611	0.14	1,435	0.18
Representative office of foreign company	82	0.01	14	0.00	68	0.01
Branch office	28,117	2.24	4,474	1.01	23,643	2.92
Other	17,561	1.40	3,682	0.83	13,879	1.71

Source: Ministry of Finance Tax Data Center, VAT data for 2008.

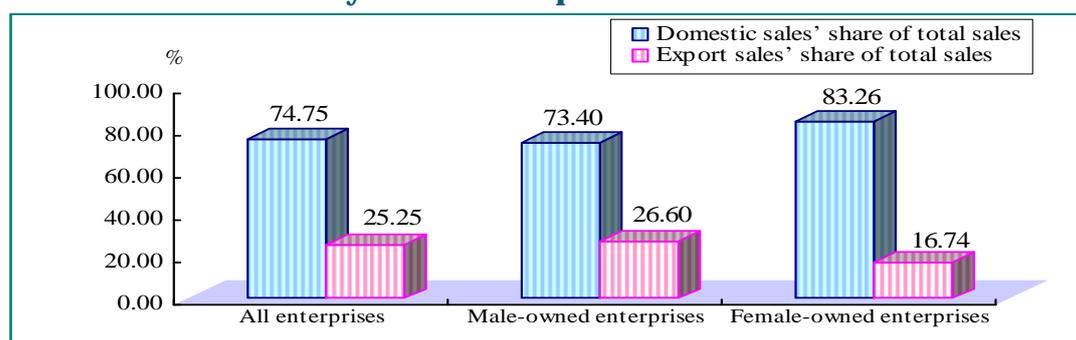
4. Female-owned Enterprises' Share of Total Sales, Domestic Sales and Export Sales by All Enterprises is Less than 20% in Every Case

In 2008, female-owned enterprises posted total sales of NT\$4,412.1 billion, representing 13.70% of the total sales by all enterprises. Female-owned enterprises had domestic sales of NT\$3,673.7 billion (15.26%), and export sales of NT\$738.4 billion (9.08%). Overall, the shares of total sales, domestic sales and export sales held by female-owned enterprises are far lower than those held by male-owned enterprises. The shares of total sales, domestic sales and export sales by SMEs held by female-owned SMEs in 2008 were 22.79%, 23.93% and 16.32%, respectively (Table 2-4-1).

5. Female-owned Enterprises Are More Oriented Towards the Domestic Market

In 2008, domestic sales accounted for 83.26% of the total sales of female-owned enterprises, with export sales accounting for only 16.74%. By contrast, export sales accounted for 26.60% of the total sales of male-owned enterprises, while domestic sales accounted for 73.40%. Female-owned enterprises are thus more oriented towards the domestic market than are male-owned enterprises (Figure 2-4-1).

Figure 2-4-1 Domestic Sales' and Export Sales' Shares of Total Sales in 2008 – by Sex of Enterprise Owner

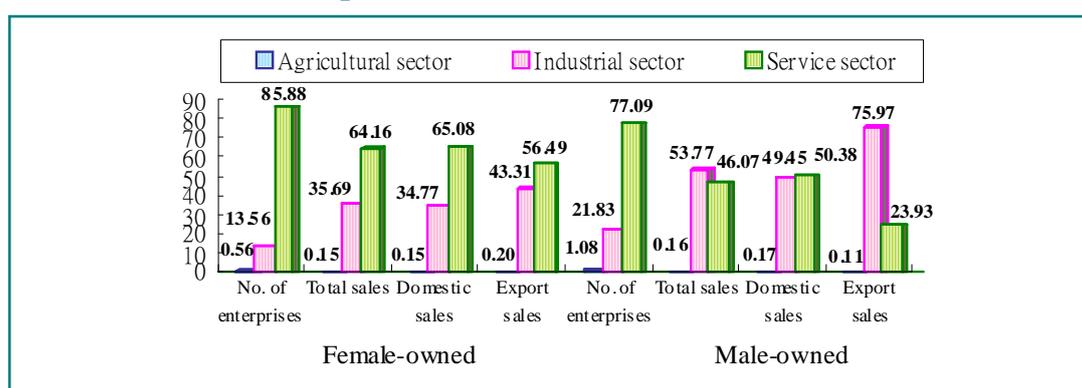


Source: Ministry of Finance Tax Data Center, VAT data for 2008.

6. Female-owned Enterprises Are Heavily Concentrated in the Service Sector

In 2008, the service sector accounted for the largest share of female-owned enterprises, and also for the largest shares of female-owned enterprises' total sales and export sales; 85.88% of female-owned enterprises were in the service sector (Figure 2-4-2).

Figure 2-4-2 SME Performance Indicators in 2008 – by Sector and Sex of Enterprise Owner



Source: Ministry of Finance Tax Data Center, VAT data for 2008.

7. Female-owned Enterprises Account for More Than Half of Enterprises, Total Sales and Export Sales in the Wholesaling and Retailing Industries

In 2008 the wholesaling and retailing industry accounted for the largest share of female-owned enterprises (54.92%), their total sales (52.15%), domestic sales (48.60%) and export sales (69.79%) (see Table 2-4-4).

Table 2-4-4 Individual Industries' Shares of the Number of Enterprises, Total Sales, Domestic Sales and Export Sales in 2008 – by Sex of Enterprise Owner

Industry	Item	No. of Enterprises		Total Sales		Domestic Sales		Export Sales	
		Female-owned enterprises	Male-owned enterprises						
Total		100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Agriculture, forestry, fisheries and animal husbandry		0.55	1.05	0.12	0.09	0.13	0.11	0.09	0.04
Mining and quarrying		0.08	0.14	0.18	0.16	0.21	0.22	0.01	0.01
Manufacturing		7.81	12.45	17.33	40.93	15.81	30.18	24.90	70.58
Electricity and gas supply		0.02	0.04	0.89	2.20	1.07	2.94	—	0.17
Water supply and pollution remediation		0.47	0.60	0.76	0.47	0.89	0.62	0.16	0.07
Construction		5.19	8.66	7.77	5.23	9.25	6.97	0.40	0.43
Wholesaling and retailing		54.92	51.20	52.15	31.55	48.60	34.43	69.79	23.61
Transportation and warehousing		1.69	2.94	3.22	2.65	3.40	2.52	2.33	3.00
Hotel and restaurant		12.01	6.97	2.19	0.77	2.58	1.05	0.22	0.00
Information, communications and broadcasting		1.03	1.35	1.78	2.31	1.84	2.80	1.46	0.96
Finance and insurance		1.01	1.41	5.94	8.79	7.12	11.96	0.06	0.04
Real estate		1.32	1.83	3.29	2.24	3.92	3.04	0.16	0.03
Professional, scientific and technical services		2.75	2.85	2.07	1.34	2.42	1.48	0.34	0.97
Supporting services		2.33	2.05	1.06	0.62	1.27	0.83	0.07	0.05
Educational services		0.05	0.05	0.02	0.02	0.02	0.02	0.00	0.00
Medical, healthcare and social services		0.03	0.03	0.02	0.01	0.02	0.01	0.00	0.00
Arts, entertainment and leisure services		1.76	1.87	0.33	0.20	0.39	0.27	0.01	0.00
Other service industries		6.99	4.50	0.88	0.41	1.06	0.56	0.01	0.02

Source: Ministry of Finance Tax Data Center, VAT data for 2008.

Chapter 3

Financial Status of SMEs

Financial analysis has a vital role to play in facilitating an understanding of the current state of Taiwan's SMEs and the outlook for their future development; the various financial indicators can be used to examine SMEs' operational management. The first and second sections of this chapter present an overview of the financial status of Taiwan's SMEs, using business income tax return data for 2007 supplied by the Tax Data Center of the Ministry of Finance; there is thus a one-year time lag as compared to the data presented in the other chapters in this White Paper. Section III uses Financial Supervisory Commission (FSC) survey data to examine the interaction between SMEs and the banking sector, while Section IV gives a brief report on the current tax reforms that affect SMEs.

The definition of SMEs used in this chapter is the revised definition announced by the Ministry of Economic Affairs in July 2005; the industry categories used in Section II are based on the ROC Standard Industry Classification Version 7.

I Overall Financial Status of SMEs

In this section, consolidated balance sheet data (where the figures for each account in the balance sheet are converted into percentages of total assets) are used to examine the fund utilization and asset allocation status of SMEs, so as to gain an overall understanding of SMEs' financial structure.

1. Analysis of Asset Allocation by SMEs

(1) A Fall in SMEs' Current Assets

For large enterprises, in 2007 the share of total assets held by current assets fell by 2.75 percentage points (compared to 2006) to 71.50%. For SMEs, the decline was even more pronounced; current assets' share of total assets fell by 13.64 percentage points to 63.20%. Of the various current asset items, the largest decline was seen in cash; cash's share of SMEs' total assets fell by 32.34 percentage points to 16.98%. The shares held by accounts receivable and inventories fell by 7.38 and 9.76 percentage points to 18.25% and 23.93%, respectively (Table 3-1-1).

Table 3-1-1 Consolidated Financial Data for Taiwanese Enterprises, 2005–2007

Unit: %

Item	Size/Year	Large Enterprises			SMEs		
		2005	2006	2007	2005	2006	2007
Current assets		65.03	74.25	71.50	55.96	76.84	63.20
Cash		28.26	21.79	21.19	15.61	49.32	16.98
Accounts receivable		26.64	37.36	37.07	15.84	10.87	18.25
Inventories		7.33	10.81	10.30	21.10	14.17	23.93
Advance payments		0.44	0.56	0.69	1.50	1.08	1.70
Other current assets		2.36	3.74	2.25	1.90	1.41	2.33
Funds and long-term investments		19.32	1.58	2.08	16.28	3.87	3.85
Fixed assets		11.99	19.22	20.43	24.87	17.00	29.01
Land and buildings		5.62	8.57	8.66	15.31	10.29	18.07
Machinery		5.41	9.17	10.51	7.80	5.50	9.17
Other fixed assets		0.96	1.48	1.26	1.76	1.21	1.77
Intangible and other assets		3.66	4.95	5.98	2.90	2.29	3.94
Total assets = Liabilities + Net worth		100.00	100.00	100.00	100.00	100.00	100.00
Liabilities		74.48	82.20	83.07	62.31	59.73	59.64
Current liabilities		56.27	62.78	60.96	55.33	52.13	52.25
Short-term loans		30.34	41.66	38.99	14.39	13.62	13.36
Accounts payable		11.58	11.55	11.56	15.17	13.65	14.19
Income received in advance		6.48	3.81	4.33	5.11	4.74	4.71
Other current liabilities		7.88	5.75	6.08	20.67	20.12	19.99
Long-term liabilities		10.09	10.93	12.15	5.33	5.93	5.85
Long-term loans repayable		3.05	3.85	4.82	4.45	4.98	4.97
Other long-term liabilities		7.04	7.09	7.34	0.88	0.94	0.88
Other liabilities		8.12	8.49	9.96	1.65	1.67	1.54
Net worth		25.52	17.80	16.93	37.69	40.27	40.36

Source: Ministry of Finance, Business income tax return data.

(2) A Slight Fall in Funds and Long-term Investments

The changes in the share of total assets held by funds and long-term investments for SMEs and for large enterprises differed significantly in 2007. For large enterprises, the funds and long-term investments ratio rose by 0.5 percentage points compared to 2006, to 2.08%, while for SMEs it fell by 0.02 to 3.85%.

(3) A Rise in Fixed Assets for SMEs

For large enterprises, the share of total assets held by fixed assets rose by 1.21 percentage points in 2007 compared to 2006, climbing to 20.43%, while for SMEs the fixed assets ratio increased by 12.01 percentage points to 29.01%. For SMEs, out of the various items making up fixed assets, the main increase was seen in land and buildings, and in machinery, whose shares rose by 7.78 percentage points and 3.67 percentage points, respectively. There has thus been a shift in the SMEs' asset mix away from current assets towards fixed assets. However, liquid assets still account for the largest share of total assets for both SMEs and large enterprises, at over 60% in both cases.

2. Analysis of SMEs' Financial Structure

The financial structure of Taiwan's SMEs in 2007 remained more or less unchanged from 2005 and 2006. However, SMEs' operating costs did rise significantly in 2007 compared to 2006, and as a result the SME sector as a whole posted a sizeable loss in 2007.

(1) A Slight Increase in Current Liabilities

Since 2004, the SMEs' current liabilities ratio has been falling steadily. The ratio stood at 60.45% in 2004, 55.33% in 2005, and 52.13% in 2006, although in 2007 it rose very slightly to 52.25%. For SMEs, the current liabilities' share of total liabilities was 87.61% in 2007, while for large enterprises the figure was 73.38%. The fact that this figure is so much higher for SMEs than for large enterprises reflects the fact that SMEs are subject to more intense short-term funding pressure.

(2) A Slight Fall in the Long-term Liabilities Ratio

Having risen steadily for three years, in 2007 the SMEs' long-term liabilities ratio fell slightly, declining by 0.08 percentage points (compared to 2006) to 5.85%. For large enterprises, the ratio has continued to rise steadily, climbing from 10.09% in 2005 to 10.93% in 2006 and to 12.15% in 2007. It can thus be seen that the SMEs' long-term liabilities ratio is only half that of large enterprises; this is mainly due to the fact that SMEs are generally perceived as being less credit-worthy than large enterprises, which affects their ability to secure long-term funding.

3. Analysis of SMEs' Profit and Loss

(1) A Pronounced Increase in the Operating Cost Ratio Compared to 2007

As regards the operating costs' share of net operating income, for SMEs in 2007 the operating cost ratio was 155.10%, representing an increase of 74.75 percentage points compared to 2006; it can thus be seen that operating costs far exceeded net operating income. The dramatic increase in SMEs' operating costs caused the SME sector as a whole to make a loss in 2007; the gross profit margin fell to -55.10% (Table 3-1-2).

The large enterprises' operating cost ratio declined slightly, falling by 1.84 percentage points to 92.60%. The gross profit margin for large enterprises in 2007 was 7.41%, up 1.49 percentage points from 2006. Over the last few years, the large enterprises' operating cost ratio has tended to fall, dropping from 96.58% in 2005 to 94.44% in 2006 and to 92.60% in 2007.

(2) The SMEs' Operating Expenses Ratio Rises, and Substantially Exceeds that of Large Enterprises

The SMEs' operating expenses ratio stood at 22.45% in 2007, up from 18.26% in 2006, and was significantly higher than the operating expenses ratio for large enterprises (4.94%). This high operating expenses ratio has had a significant negative impact on SME earnings.

Table 3-1-2 Profit and Loss of Taiwanese Enterprises, 2005–2007

Unit: %

Item	Size/Year	Large Enterprises			SMEs		
		2005	2006	2007	2005	2006	2007
Net operating income		100.00	100.00	100.00	100.00	100.00	100.00
Less: Operating costs		96.58	94.44	92.60	82.05	80.35	155.10
Gross operating profit		3.42	5.92	7.41	17.95	19.97	-55.10
Less: Operating expenses		2.36	3.98	4.94	16.80	18.26	22.45
Net operating profit		1.06	2.39	2.47	1.15	3.82	-77.55
Plus: Non-operating profit		0.60	1.15	1.63	1.38	1.46	1.42
Less: Interest expenses		0.21	0.66	0.83	0.75	1.29	0.65
Less: Other non-operating expenses		0.13	0.25	0.36	0.58	0.75	0.58
Profit (loss)		1.33	1.82	2.90	1.20	0.80	-77.36

Source: See Table 3-1-1.

(3) Erosion of Net Operating Profit by High Operating Expenses

The combination of rising operating costs and rising operating expenses in 2007 caused Taiwan's SME sector as a whole to post a high net operating loss. Despite the continuing rise in the price of raw materials in 2007, large enterprises' operating costs were relatively unaffected, and large enterprises were able to maintain a positive gross margin of 7.41%. For SMEs, on the other hand, the dramatic fluctuations in raw material prices resulted in the first net operating loss since 2000.

(4) A Dramatic Decline in Current Profit

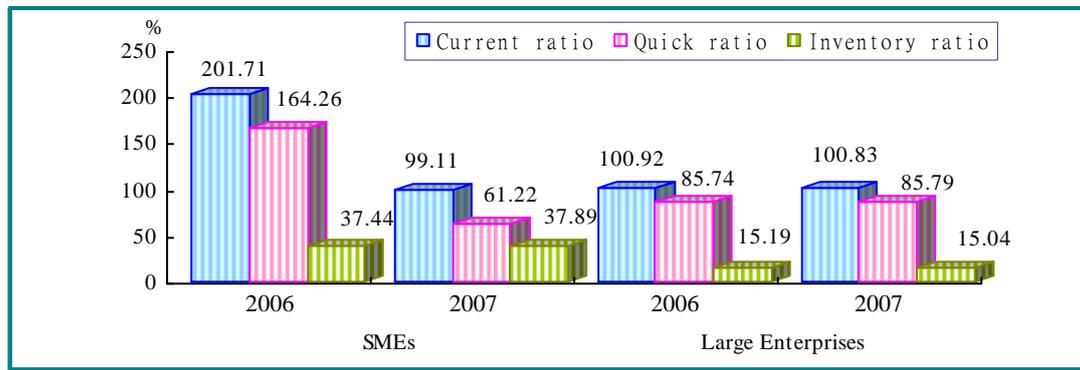
The SMEs' net profit margin fell dramatically in 2007 to -77.55%, mainly because of the pronounced increase in the operating cost ratio. Current profit for SMEs stood at -77.36%, compared to 2.90% for large enterprises.

4. Analysis of SMEs' Financial Ratios

(1) A Pronounced Fall in the Current Ratio and Quick Ratio, and a Slight Increase in the Inventory Ratio

The current ratio of Taiwan's SMEs fell by 102.6 percentage points in 2007, while the quick ratio fell by 103.04 percentage points. The inventory ratio remained more or less unchanged compared to 2006, rising by just 0.45 percentage points (Figure 3-1-1). The dramatic fall in the current and quick ratios was due to the fall in current assets and an increase in inventories. Overall, the SMEs' short-term liquidity deteriorated compared to 2006.

Figure 3-1-1 Short-term Liquidity of Taiwanese Enterprises, 2006 and 2007



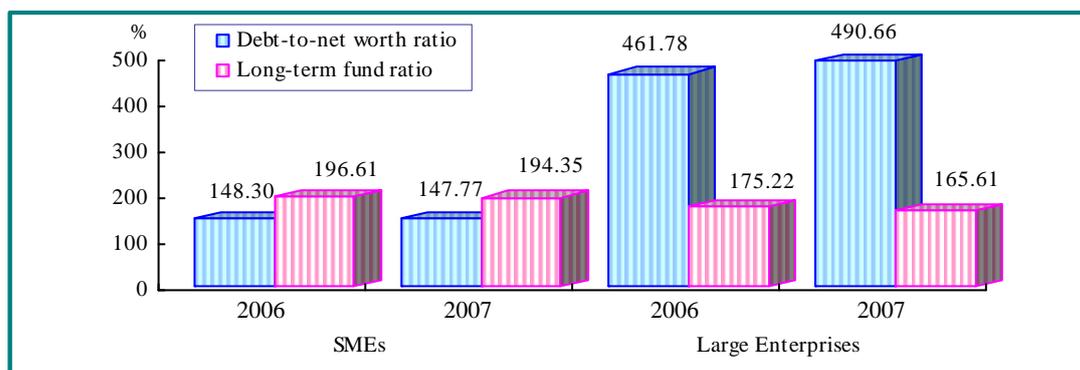
Notes: 1. Current ratio = current assets ÷ current liabilities × 100% (reference value = 200; ideally, the ratio should be higher than the reference value).
 2. Quick ratio = (current assets – inventories) ÷ 100% (reference value = 100; ideally, the ratio should higher than the reference value).
 3. Inventory ratio = inventories ÷ current liabilities × 100% (reference value = 100; ideally, the ratio should be higher than the reference value).

Source: Ministry of Finance, Business income tax return data.

(2) A Fall in the Debt-to-Net Worth Ratio, and a Slight Fall in the Long-term Fund Ratio

In 2007, the debt-to-net worth ratio of Taiwan's SMEs remained more or less unchanged from 2006, at 147.77%. By contrast, large enterprises have seen some dramatic fluctuations in the debt-to-net worth ratio over the past few years; in 2007, large enterprises' debt-to-net worth ratio increased to 490.66% (Figure 3-1-2). For both large enterprises and SMEs, the debt-to-net worth ratio was higher than the reference value.

Figure 3-1-2 Long-term Stability of Taiwanese Enterprises in 2006 and 2007



Notes: 1. Debt-to-net worth ratio = debt ÷ net worth × 100% (reference value = 100; ideally, the ratio should be below the reference value).
 2. Long-term fund ratio = (equity + long-term debt) ÷ fixed assets × 100% (reference value = 100; ideally, the ratio should be below the reference value).

Source: See Figure 3-1-1.

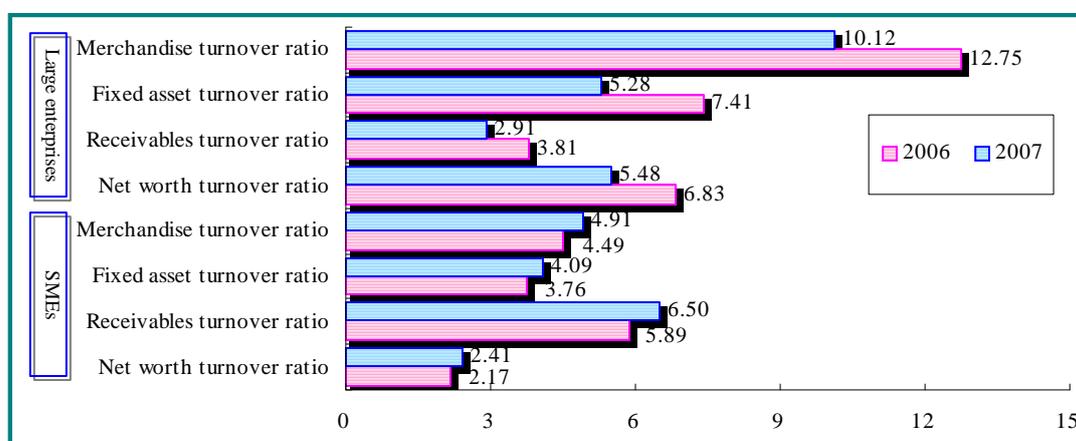
The SMEs' long-term fund ratio fell slightly, from 196.61% in 2006 to 194.35% in 2007. However, this was still superior to the long-term fund ratio of large enterprises (165.61%). Both large enterprises and SMEs thus had sufficient long-term funds to cover long-term asset purchases; both sectors can be considered to have sound long-term asset allocation.

(3) An Across-the-board Rise in Turnover Ratios

Turnover ratios reflect the efficiency of an enterprise's asset utilization, its credit and inventory policies, and its investment strategy. Receivables turnover can be used to measure the operating capability of an enterprise; a high ratio suggests efficient collection of receivables. Looking at the data for 2007, it can be seen that SMEs' receivables turnover rose from 5.89 turns in 2006 to 6.50 turns in 2007; merchandise turnover also rose, from 4.49 turns to 4.91 turns (Figure 3-1-3). The increase in these two figures reflects an improvement in SMEs' operating capability compared to 2006.

The SMEs' fixed asset turnover ratio rose from 3.76 turns in 2006 to 4.09 turns in 2007 (up from 4.04 turns in 2005), while the net worth turnover ratio increased from 2.17 turns to 2.41 turns. There was thus an improvement in the efficiency of SMEs' fixed asset and capital use in 2007 compared to 2006.

Figure 3-1-3 Operating Capability of Taiwanese Enterprises in 2006 and 2007



Notes: 1. Net worth turnover ratio = net sales / net worth.
 2. Receivables turnover ratio = net sales / receivables.
 3. Fixed asset turnover ratio = net sales / fixed assets.
 4. Merchandise turnover ratio = net sales / inventories.

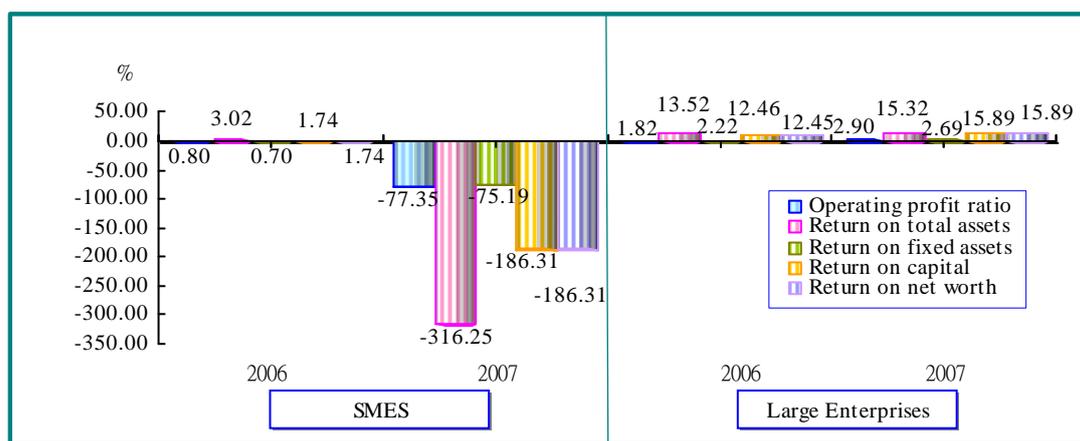
Source: See Figure 3-1-1.

(4) A Dramatic Fall in All Profitability Indicators

The SMEs' operating profit ratio fell dramatically from 0.80% in 2006 to -77.35% in 2007.

The return on total assets declined even more dramatically, from 3.02% in 2006 to -316.25% in 2007; the return on fixed assets fell from 0.70% to -75.19%, return on capital fell from 1.74% to -186.31%, and the return on net worth fell from 1.74% to -186.31% (Figure 3-1-4). By contrast, for large enterprises all profitability indicators improved in 2007 compared to 2006.

Figure 3-1-4 Profitability of Taiwanese Enterprises in 2006 and 2007



Notes: 1. Operating profit ratio = current profit / net operating income.

2. Return on fixed assets = current profit / fixed assets.

3. Return on total assets = current profit / total assets.

4. Return on capital = current profit / net worth.

5. Return on net worth = current profit / net worth.

Source: See Figure 3-1-1.

II Financial Analysis by Industry

This section examines the financial status of Taiwan's SMEs by industry, comparing the situation in 2007 with that in 2006.

1. Overall Financial Analysis by Industry

The 2007 consolidated balance sheets of SMEs and large enterprises by industry are shown in Table 3-2-1; the 2007 profit and loss structure by industry is shown in Table 3-2-2, and the consolidated financial ratios by industry are presented in Table 3-2-3. As can be seen from the figures in these tables, considerable disparities exist between the financial structures of different industries.

(1) Among SMEs, the Construction Industry Had the Highest Current Assets Ratio, While the Finance and Insurance Industry Had the Lowest

In 2007, in the SME sector, the construction industry had the highest current assets ratio, at

87.40%, followed by the wholesaling and retailing industry, with 75.06%. The hotel and restaurant industry had the lowest current assets ratio, at 29.53% (Table 3-2-1).

Table 3-2-1 SMEs' Consolidated Balance Sheet Data in 2007 – by Industry

Unit: %

Item \ Industry	Agriculture, Forestry and Fisheries and Animal Husbandry	Mining and Quarrying	Manufacturing	Water, Electricity and Gas	Construction	Wholesaling and Retailing	Hotel and Restaurant	Transportation, Warehousing and Communications	Finance and Insurance	Real Estate and Leasing	Professional, Scientific and Technical Services	Educational Services	Medical, Healthcare and Social Services	Cultural, Sporting and Leisure Services	Other Services
Current assets	48.69	48.70	61.27	38.34	87.40	75.06	29.53	56.78	46.57	39.31	58.35	42.98	52.74	32.43	57.74
Cash	15.15	16.25	14.76	15.25	17.38	20.10	12.76	28.23	25.57	7.08	27.31	27.87	12.23	11.60	28.46
Accounts receivable	10.29	16.36	22.42	13.78	21.86	20.13	3.36	21.34	12.08	5.39	17.13	9.49	17.29	8.32	15.26
Inventories	8.41	12.69	21.50	7.37	42.62	30.90	9.29	1.09	3.59	22.51	7.51	1.21	22.49	8.07	8.93
Advance payments	12.81	1.63	1.35	0.83	1.63	1.90	2.58	3.67	0.45	1.39	2.48	1.19	0.33	2.30	2.71
Other current assets	2.03	1.77	1.24	1.11	3.91	2.03	1.53	2.46	4.87	2.93	3.91	3.22	0.41	2.15	2.39
Funds and long-term investments	1.27	0.85	1.05	1.31	0.55	2.23	1.37	1.49	32.83	5.95	8.76	1.06	0.00	3.61	2.52
Fixed assets	46.38	47.37	35.85	58.90	9.50	20.07	62.47	36.90	14.31	44.89	24.30	51.28	44.82	54.99	31.09
Land and buildings	11.67	17.77	19.78	37.02	3.53	12.80	45.17	9.99	12.38	38.52	15.59	34.60	29.88	38.62	17.03
Machinery	29.53	25.66	14.38	14.98	5.44	6.25	9.78	25.01	1.66	2.68	6.97	13.36	9.03	8.31	11.84
Other fixed assets	5.17	3.94	1.69	6.90	0.53	1.03	7.52	1.90	0.27	3.68	1.73	3.31	5.91	8.05	2.21
Intangible and other assets	3.66	3.07	1.83	1.46	2.55	2.64	6.63	4.82	6.30	9.85	8.59	4.68	2.43	8.96	8.66
Total assets = liabilities + net worth	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Liabilities	63.58	59.67	69.70	49.28	70.54	58.99	66.06	30.83	33.92	70.67	44.59	47.94	74.99	64.18	46.78
Current liabilities	56.77	54.23	61.94	47.19	68.36	54.93	50.78	27.66	26.17	54.52	38.64	42.62	60.13	45.25	38.65
Short-term loans repayable	13.23	12.91	17.75	6.74	7.77	11.07	10.58	7.51	10.11	21.95	6.98	11.18	4.97	8.65	5.65
Accounts payable	9.63	15.74	21.58	19.79	13.85	16.91	8.50	9.21	4.31	8.52	11.07	5.62	32.33	8.21	9.92
Income received in advance	0.66	0.80	1.72	0.26	33.66	0.94	0.31	0.44	0.09	2.09	3.74	3.42	16.82	1.92	2.40
Other current liabilities	33.26	24.77	20.89	20.40	13.08	26.01	31.39	10.50	11.65	21.96	16.86	22.40	6.01	26.48	20.68
Long-term liabilities	5.86	4.38	6.78	1.07	1.57	3.17	13.95	1.91	6.46	12.38	4.12	4.90	1.00	7.70	5.28
Long-term loans repayable	5.43	3.56	6.35	1.05	1.46	3.01	13.32	1.72	2.47	11.29	3.74	4.90	1.00	7.37	5.17
Other long-term liabilities	0.43	0.81	0.43	0.02	0.11	0.17	0.63	0.18	3.99	1.09	0.38	0.00	0.00	0.33	0.12
Other liabilities	0.95	1.07	0.98	1.02	0.62	0.89	1.33	1.26	1.29	3.77	1.83	0.42	13.85	11.22	2.85
Net worth	36.42	40.33	30.30	50.72	29.46	41.01	33.94	69.17	66.08	29.33	55.41	52.06	25.01	35.82	53.22
Stockholders' equity	36.42	40.33	30.30	50.72	29.46	41.01	33.94	69.17	66.08	29.33	55.41	52.06	25.01	35.82	53.22
Reserves and operating surplus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Source: See Table 3-1-1.

Manufacturing industry had a current assets ratio of 61.27% in 2007, 25.79 percentage points down on 2006; this was the most pronounced change for any industry except for the medical, healthcare and social services industry.

(2) The Hotel and Restaurant Industry Posted the Highest Fixed Assets Ratio

For SMEs, the hotel and restaurant industry had the highest fixed assets ratio in 2007, at 62.47%, followed by the water, electricity and gas industry, with 58.90%, and the cultural,

sporting and leisure services industry, with 54.99%. For all of these industries, land and buildings accounted for the largest share of fixed assets.

(3) The Medical, Healthcare and Social Services Industry Had the Highest Debt Ratio, Followed by the Real Estate and Leasing Industry

In 2007, in the SME sector, the medical, healthcare and social services industry had the highest debt ratio, at 74.99%, followed by the real estate and leasing industry, with 70.67%, and the construction industry, with 70.54%. This situation for these top three industries remained more or less the same as in 2006. The industries with the lowest debt ratios were the transportation, warehousing and communications industry (30.83%) and the finance and insurance industry (33.92%).

In the medical, healthcare and social services industry, current liabilities accounted for the largest share of total liabilities in 2007, at 32.33%. In the construction industry, income received in advance represented the largest share, at 33.66%; this was a higher percentage than in any other industry.

(4) The Largest Fluctuations Were Seen in Manufacturing Industry and in the Professional, Scientific and Technical Services Industry

SMEs in manufacturing industry and in the professional, scientific and technical services industry experienced pronounced fluctuations in 2007. Manufacturing industry SMEs had reserves and surpluses in positive territory in 2006, at 1.48%; in 2007, because of rising operating costs, they posted a loss that was equivalent to 1.6 times their net operating income. For SMEs in the professional, scientific and technical services industry, the net loss in 2006 was equivalent to 5.14% of net operating income; in 2007, it was three times as large as net operating income (Table 3-2-2).

(5) SMEs in Most Industries Made a Profit

Overall, there was a pronounced improvement in the profitability of Taiwan's SMEs in 2007. Out of 15 industries, SMEs in 8 industries made a profit, with SMEs in the other 7 industries making a loss. For most industries, the gross profit margin was over 30%; the educational services industry posted the highest gross margin, at 60.92%, and the agriculture, forestry, fisheries and animal husbandry industry had the lowest, at 14.62%. The negative gross profit margin posted by the manufacturing industry was mainly due to the dramatic rise in operating costs.

Despite their impressive performance in terms of gross margins, the SMEs' ability to control operating expenses remains inferior to that of large enterprises. While SMEs in 11 industries had higher gross profit margins than large enterprises in the same industries, after

deducting operating expenses, there were only 3 industries in which SMEs had a higher net profit margin than large enterprises in the same industry; these were: mining and quarrying, construction, and finance and insurance.

The overall industry-specific earnings performance of SMEs in 2007 was superior to that in 2005 and 2006. Of the 15 industries, whereas there were only 5 in which SMEs made a profit in 2005, this figure rose to 8 in 2006, and to 11 in 2007.

Table 3-2-2 Profit and Loss Structure in 2007 – by Industry

Item \ Industry	Unit: %														
	Agriculture, Forestry, Fisheries and Animal Husbandry	Mining and Quarrying	Manufacturing	Water, Electricity and Gas	Construction	Wholesaling and Retailing	Hotel and Restaurant	Transportation, Warehousing and Communications	Finance and Insurance	Real Estate and Leasing	Professional, Scientific and Technical Services	Educational Services	Medical, Healthcare and Social Services	Cultural, Sporting and Leisure Services	Other Services
SMEs															
Net operating income	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Less: Operating costs	82.73	77.96	245.11	76.12	80.27	76.67	54.83	60.94	62.89	67.45	51.90	38.54	79.82	58.92	48.17
Gross operating profit	14.62	20.15	-145.11	19.58	53.48	19.76	-40.56	33.01	36.96	31.07	46.38	60.92	19.06	40.06	45.70
Less: Operating expenses	15.22	14.76	11.12	19.69	11.60	19.96	45.47	31.91	25.91	31.95	365.23	72.86	18.00	47.33	44.99
Net operating profit	-0.55	5.40	2.68	-0.14	3.53	-0.34	-4.91	1.02	10.98	-0.85	-318.85	-11.81	0.55	-7.47	0.73
Plus: Non-operating income	3.31	0.44	0.95	3.11	0.42	1.35	3.19	1.44	9.67	15.53	3.55	3.04	0.98	4.25	0.87
Less: Interest expenses	1.99	0.42	0.51	0.19	0.25	0.40	1.06	0.77	8.70	5.59	1.48	0.31	0.02	1.29	0.36
Less: Other non-operating expenses	1.05	0.51	0.49	0.27	0.26	0.40	0.80	0.79	4.36	5.96	0.64	1.52	0.27	1.11	0.40
Current profit (loss)	2.31	6.79	-156.28	6.85	8.04	3.92	1.03	7.02	7.81	4.58	-317.42	-10.19	2.86	-4.41	6.94
Large Enterprises															
Net operating income	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Less: Operating costs	78.70	96.21	88.08	82.08	93.59	89.33	47.55	79.36	97.39	77.74	69.54	47.16	89.17	64.29	74.21
Gross operating profit	21.30	3.79	11.95	17.92	6.44	10.66	52.45	20.62	2.61	22.26	30.46	52.84	10.83	35.71	25.79
Less: Operating expenses	14.51	12.78	6.17	3.26	4.52	9.45	46.93	12.83	2.11	11.23	20.34	54.14	7.08	31.16	18.16
Net operating profit	6.79	-8.98	5.77	14.66	1.90	1.21	5.52	7.77	0.50	11.03	10.13	-1.30	3.75	4.55	7.63
Plus: Non-operating profit	3.30	3.07	2.47	1.75	2.00	3.81	2.25	3.83	0.47	2.21	1.94	2.32	0.39	3.22	1.76
Less: Interest expenses	1.82	16.83	1.34	0.33	0.98	2.11	1.72	2.39	0.15	0.83	1.34	0.29	0.25	1.37	0.59
Less: Other non-operating expenses	1.82	4.25	0.68	2.44	0.88	0.42	1.84	2.17	0.03	2.35	0.64	0.05	0.97	2.47	0.62
Current profit (loss)	6.45	-26.99	6.21	13.64	2.02	2.50	4.21	7.08	0.80	10.06	10.09	0.68	2.92	3.94	8.18

Source: See Table 3-1-1.

2. Short-term Repayment Ability by Industry

As regards the short-term repayment ability of Taiwan's SMEs, in 2007 more than half of the industries had a current ratio of less than 100%, and 13 out of 15 industries had a quick ratio of less than 100% (only the transportation, warehousing and communications industry and "other services" industry had a quick ratio higher than 100%, at 146.08% and 106.69%,

respectively). These figures indicate that, on the whole, the short-term repayment ability of Taiwan's SMEs is far from satisfactory; clearly, the poor liquidity of 2005 and 2006 continued into 2007 (Table 3-2-3).

The hotel and restaurant industry, real estate and leasing industry, and cultural, sporting and leisure services industry had the lowest current ratios and quick ratios in 2007; the real estate and leasing industry had a quick ratio of just 23.80%, and the quick ratio for the hotel and restaurant industry was only 29.26%. SMEs in these industries would find it very difficult to cope with sudden cash-flow problems.

Table 3-2-3 Financial Ratios for Individual Industries in 2007

Item	Unit: %														
	Industry	Agriculture, Forestry, Fisheries and Animal Husbandry	Mining and Quarrying	Manufacturing	Water, Electricity and Gas	Construction	Wholesaling and Retailing	Hotel and Restaurant	Transportation, Warehousing and Communications	Finance and Insurance	Real Estate and Leasing	Professional, Scientific and Technical Services	Educational Services	Medical, Healthcare and Social Services	Cultural, Sporting and Leisure Services
SMEs															
Current ratio	70.97	94.08	100.90	77.02	126.46	115.19	42.70	148.96	56.75	59.16	103.33	70.14	84.68	52.32	126.25
Quick ratio	58.67	69.57	65.29	62.21	64.75	67.51	29.26	146.08	52.30	23.80	89.06	68.15	48.58	38.94	106.69
Inventory ratio	12.30	24.52	35.60	14.80	61.70	47.68	13.44	2.88	4.45	35.37	14.27	1.99	36.10	13.39	19.56
Debt-to-net worth ratio	174.54	147.96	230.04	97.14	239.47	143.87	194.61	44.57	51.33	240.91	80.46	92.10	299.77	179.16	87.91
Long-term fund ratio	110.18	90.10	101.41	92.75	330.16	261.11	104.41	265.41	1,589.45	113.25	358.01	159.70	60.13	108.42	222.71
Net worth ratio	1.56	3.93	5.65	1.89	4.11	2.87	2.06	0.82	0.12	0.40	0.94	1.01	1.15	1.02	1.73
Receivables turnover	6.65	9.26	7.49	7.36	5.60	6.95	28.30	3.66	2.08	2.63	4.45	7.98	1.72	6.02	7.14
Fixed asset turnover	1.48	3.20	4.68	1.72	12.89	6.97	1.52	2.11	1.75	0.32	3.14	1.48	0.66	0.91	3.50
Merchandise turnover	8.11	11.93	7.76	13.76	2.87	4.50	10.24	71.02	6.87	0.60	9.47	62.20	1.32	6.04	12.17
Operating profit ratio	2.31	6.79	-156.30	6.85	8.04	3.92	1.03	7.02	7.81	4.58	-315.70	-10.19	2.86	-4.41	6.94
Return on total assets	3.40	21.69	-731.82	11.80	103.61	27.34	1.57	14.84	13.68	1.45	-991.28	-15.04	1.90	-4.01	24.32
Return on fixed assets	1.31	10.76	-267.60	6.59	9.74	4.63	0.72	3.97	0.62	0.53	-164.83	-5.37	0.82	-1.61	6.39
Large enterprises															
Current ratio	63.55	15.74	126.74	69.57	111.17	144.87	43.39	110.70	92.51	104.00	136.72	46.02	68.39	70.45	98.15
Quick ratio	48.20	11.82	92.87	56.11	35.85	115.97	36.64	101.85	85.07	23.35	100.80	44.48	64.01	62.37	77.15
Inventory ratio	15.35	3.92	33.87	13.46	75.32	28.90	6.75	8.85	7.44	80.65	35.92	1.55	4.37	8.08	21.00
Debt-to-net worth ratio	169.23	31.18	150.58	139.18	396.37	467.91	171.12	199.93	1,382.88	329.44	158.93	303.12	298.92	186.52	246.06
Long-term fund ratio	165.42	905.29	120.25	78.96	275.07	320.65	100.69	74.50	709.51	140.69	308.05	88.57	65.56	125.59	145.64
Net worth turnover	1.35	0.08	3.07	1.45	2.47	8.45	1.50	1.46	11.92	1.73	2.72	5.34	2.30	1.44	3.59
Receivables turnover	6.03	32.87	5.44	7.73	3.36	4.77	17.65	5.19	2.08	7.08	4.72	22.57	4.05	5.60	7.05
Fixed asset turnover	2.09	0.63	2.51	0.69	4.99	8.57	0.93	0.60	49.16	1.41	6.90	4.23	0.82	1.13	3.30
Merchandise turnover	6.70	12.10	9.70	16.09	0.95	13.66	26.06	18.34	14.37	0.91	5.96	118.99	32.44	17.50	9.53
Operating profit ratio	6.45	-26.99	6.21	13.64	2.02	2.50	4.21	7.08	0.80	10.06	10.09	0.68	2.92	3.94	8.18
Return on total assets	13.48	-17.02	15.57	9.41	10.07	21.39	3.91	4.22	39.32	14.16	69.60	2.89	2.40	4.45	26.98
Return on fixed assets	3.24	-1.56	7.61	8.29	1.01	3.71	2.33	3.44	0.64	4.06	10.59	0.91	1.69	1.97	8.48

Source: See Table 3-1-1.

3. Profitability by Industry

In 2007, out of 15 industries, there were 11 in which, on average, SMEs made a profit; this represented an improvement compared to 2006. The industries in which SMEs made a loss were manufacturing, the professional, scientific and technical services industry, the educational services industry, and the cultural, sporting and leisure services industry. In the mining and quarrying industry, the construction industry, the wholesaling and retailing industry and the finance and insurance industry, the SMEs' profitability was superior to that of large enterprises.

III Financial Institutions and SME Financing

Financing is the lifeline of an enterprise, and this is particularly true for SMEs. Ready access to funds and efficient fund management are among the keys to the successful operation of SMEs. The financing channels available to SMEs are somewhat limited, with indirect financing (in the form of bank loans) being the most important.

1. The Taiwan Cooperative Bank Still Has a Higher Total of Outstanding Loans to SMEs Than Any Other Bank

As in 2007, Taiwan Cooperative Bank had a higher total of outstanding loans to SMEs than any other financial institution in Taiwan. As of December 2008, Taiwan Cooperative Bank's outstanding loans to SMEs came to NT\$380.6 billion, representing an increase of NT\$37.4 billion compared to December 2007; the Bank's share of the SME loan market rose from 11.23% in 2007 to 12.01% in 2008. First Commercial Bank was in second place, with outstanding loans to SMEs of NT\$341.5 billion, giving it a market share of 10.78%. The SME loan market in Taiwan is heavily concentrated, with the top 10 banks providing 74.59% of all outstanding loans to SMEs (Table 3-3-1).

Table 3-3-1 Top 10 Banks by Amount of Loans to SMEs in 2008

Units: NT\$ millions; %

Bank	Loans Outstanding	Market Share	Loans to SMEs as % of Total Loans
Total	2,362,679	74.59	18.19
Taiwan Cooperative Bank	380,556	12.01	21.25
First Commercial Bank	341,462	10.78	34.13
Taiwan Business Bank	308,988	9.75	36.46
Hua Nan Commercial Bank	300,046	9.47	28.45
Chang Hwa Commercial Bank	225,241	7.11	25.74
Bank of Taiwan	221,015	6.98	11.76
Mega International Commercial Bank	194,085	6.13	20.95
Land Bank of Taiwan	190,275	6.01	12.69
E. Sun Commercial Bank	118,322	3.74	23.78
Cathay United Bank	82,689	2.61	11.40

Source: Banking Bureau, Financial Supervisory Commission, Executive Yuan, *Statistics of Banking Business*, January 2009.

2. Taichung Commercial Bank Had the Highest Percentage of Loans Extended to SMEs

As regards the percentage of a bank's total outstanding loans that are loans made to SMEs, in 2008 Taichung Commercial Bank had the highest SME loan ratio. In 2008, the Bank's total outstanding loans to SMEs came to NT\$74.4 billion, representing 36.87% of its total outstanding loans to all business enterprises.

Taiwan Business Bank was in second place; as a specialized "SME bank," Taiwan Business Bank naturally has a high percentage of its loans going to SMEs. The top ten banks with the highest shares of loans going to SMEs had the same membership in 2008 as in 2007 (Table 3-3-2).

Table 3-3-2 Top 10 Banks by the Percentage of Total Loans Going to SMEs in 2007 and 2008

Units: NT\$ millions; %

Bank	2007		2008	
	Loans Outstanding	Loans to SMEs as a % of Total Loans	Loans Outstanding	Loans to SMEs as a % of Total Loans
Taichung Commercial Bank	66,156	34.29	74,378	36.87
Taiwan Business Bank*	280,102	34.71	308,988	36.46
First Commercial Bank	328,298	34.96	341,462	34.13
EnTie Commercial Bank	60,619	33.26	54,220	30.71
Shanghai Commercial and Savings Bank	66,623	27.71	74,059	28.82
Hua Nan Commercial Bank	274,823	27.62	300,046	28.45
Chang Hwa Commercial Bank	215,675	25.85	225,241	25.74
Cosmos Bank	27,043	22.81	23,644	24.14
E. Sun Commercial Bank	113,777	23.53	118,322	23.78
King's Town Bank	29,339	22.29	22,516	21.31

Note: * denotes a specialized SME bank.

Source: See Table 3-3-1.

3. The Increase in Outstanding Loans to SMEs by Banking Subsidiaries of Financial Holding Companies Was Greater Than That Seen at Other Commercial Banks

Since the Financial Holding Company Law came into effect in late 2001, a number of financial holding companies have been established in Taiwan. As of December 2008, there were 14 banks in Taiwan that were subsidiaries of financial holding companies. Between them, these 14 banks had total outstanding loans to SMEs of NT\$1,584.2 billion, representing an increase of NT\$89.3 billion (5.97%) compared to the 2007 total of NT\$1,494.9 billion. By comparison, the rate of increase in outstanding loans to SMEs by other banks (i.e., those that are not subsidiaries of financial holding companies) was only 2.39%. It can thus be seen that not only have the total outstanding loans to SMEs by banks that are subsidiaries of financial holding companies continued to increase, but the rate of increase has also been faster than that seen at other banks (Table 3-3-3).

Table 3-3-3 Outstanding Loans to SMEs by the Banking Subsidiaries of Financial Holding Companies in 2007 and 2008

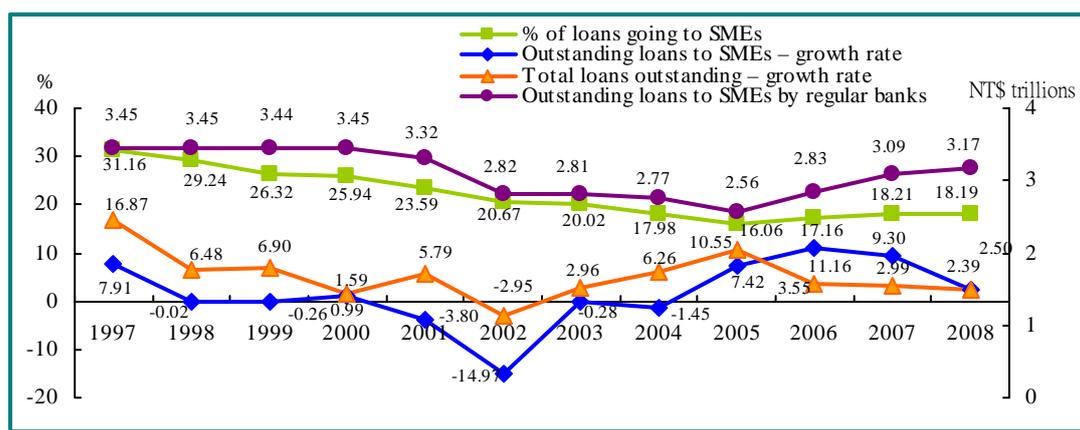
Units: NT\$ millions; %

Bank	2007		2008			
	Outstanding Loans to SMEs	Loans to SMEs as % of Total Loans	Outstanding Loans to SMEs	Loans to SMEs as % of Total Loans	Increase in Loans to SMEs	Annual Growth Rate
Total (all regular commercial banks)	3,093,752	18.21	3,167,759	18.19	74,007	2.39
First Commercial Bank	328,298	34.96	341,462	34.13	13,164	4.01
Hua Nan Commercial Bank	274,823	27.62	300,046	28.45	25,223	9.18
Bank of Taiwan	185,080	10.14	221,015	11.76	35,935	19.42
Mega International and Commercial Bank	190,465	22.17	194,085	20.95	3,620	1.90
E. Sun Commercial Bank	113,777	23.53	118,322	23.78	4,545	3.99
Cathay United Bank	75,561	10.76	82,689	11.40	7,128	9.43
Taipei Fubon Commercial Bank	85,643	14.39	80,627	11.84	-5,016	-5.86
Chinatrust Commercial Bank	62,051	8.75	74,686	10.55	12,635	20.36
Bank SinoPac	72,765	13.59	71,379	13.00	-1,386	-1.90
Yuanta Bank	40,380	17.43	44,207	19.34	3,827	9.48
Shin Kong Commercial Bank	27,016	9.91	30,786	11.24	3,770	13.95
Taishin International Bank	21,024	4.01	12,638	2.63	-8,386	-39.89
Jih Sun Commercial Bank	14,369	8.65	9,747	7.29	-4,622	-32.17
China Development Industrial Bank	3,688	4.84	2,554	3.55	-1,134	-30.75

Source: See Table 3-3-1.

4. Total Bank Loans to SMEs Rose Compared to the End of 2007

As of the end of 2008, the total outstanding loans of ordinary commercial banks in Taiwan (including the Taiwan branches of foreign banks, but excluding overseas loans) came to NT\$3,167.8 billion, representing an increase of NT\$74 billion (2.39%) compared to the end of 2007. The share of total loans going to SMEs fell very slightly, from 18.21% in 2007 to 18.19% in 2008, but in absolute terms the amount of outstanding loans to SMEs rose (Figure 3-3-1).

Figure 3-3-1 Changes in Bank Loans to SMEs by Regular Banks

Note: "Total loans outstanding" was calculated using the following formula: regular banks' outstanding loans to SMEs (including overdue loans) divided by loans to SMEs as a percentage of total loans.

Source: Banking Bureau, Financial Supervisory Commission, Executive Yuan, *Statistics of Banking Business*, January 2009.

5. Domestic Banks' Outstanding Loans to SMEs Have Continued to Rise

Implementation of the Financial Supervisory Commission's Plan for Increasing Loans to SMEs by Domestic Banks began in July 2005. The target for the first three years of implementation was to achieve an increase in lending to SMEs of NT\$200 billion each year; various ancillary measures were introduced to provide SMEs with smoother access to financing. By the end of 2007, domestic banks' outstanding loans to SMEs totaled NT\$3,004.9 billion, and by the end of 2008 they had risen to NT\$3,137.6 billion, representing an increase of 32.57% since implementation of the Plan began. The share of banks' overall lending going to SMEs had risen from 38.27% to 40.51%. The significant rise in outstanding loans to SMEs since 2005 indicates that the government's policy of encouraging lending to SMEs has been effective.

6. A Fall in the Cost of Financing in 2008

Statistical data show that the average interest rate on new loans extended by the Bank of Taiwan, Taiwan Cooperative Bank, First Commercial Bank, Hua Nan Commercial Bank and Chang Hwa Commercial Bank had fallen steadily from 7.58% in 1998 to 2.16% in 2004. In 2006, the rate rose to 2.37%, and in 2007 it climbed still further to 2.85%. The average interest rate on new loans then fell back to 2.35% in 2008 due to the impact of the global financial crisis, making the cost of financing for business enterprises slightly lower in 2008 than it had been in the previous two years.

IV Tax Reforms That Affect SMEs

In 2008 – 2009, there were a number of changes in Taiwan's tax system that are of great significance for business enterprises; this section will outline these changes, with the aim of giving SMEs a clearer understanding of the new tax system.

1. The Period for Which Losses Can Be Set Off against Profit Has Been Extended from 5 Years to 10 Years

Article 39 of the Income Tax Law stipulates that profit-seeking enterprises can set off losses accumulated over the previous five years against profits. Since this article was last revised in 1989, the global economy has undergone dramatic transformations, and Taiwanese industry has been transformed and upgraded; the five-year provision is no longer adequate to meet contemporary needs. On January 6, 2009, a revision of Article 39 of the Income Tax Law passed its third reading in the Legislative Yuan. This revision extends the period for which losses may be set off against profits from five years to ten years. This is one of the measures

adopted by the government to help business enterprises get through the current economic downturn. It is estimated that 60,000 enterprises will benefit from this revision of the law, including firms in industries such as biotechnology and insurance where it can take many years for a newly-established business to become profitable, and enterprises in industries such as DRAM (Dynamic Random Access Memory) manufacturing and LCD panel manufacturing where the ups and downs of the business cycle can cause heavy losses in some years.

2. Implementation of the Statute for Upgrading Industries Comes to an End

The *Statute for Upgrading Industries* has been in effect for over 40 years. When the period of implementation of the *Statute* first expired in 1999, the government decided that, given the state of development of Taiwanese industry and the international business environment, the period of implementation needed to be extended, so that Taiwan's industries could continue to upgrade and transform themselves. The period of implementation was therefore extended until the end of 2009. Once the extended period of implementation is over, most of the tax breaks that were provided under the *Statute* will also cease to exist; only the four functional tax breaks for spending on R&D, manpower cultivation, operational headquarters and international logistics centers will be retained, in order to promote innovation and the strengthening of industrial competitiveness.

To accommodate the termination of the period of implementation of the *Statute for Upgrading Industries* and the implementation of the government's policy of reducing the tax burden for enterprises and simplifying administration, a number of adjustments are being made to the way profit-seeking enterprise income tax is reported: (1) Starting with the 2009 provisional income tax filings (filing period: September 1–30, 2009), those profit-seeking enterprises that calculate (and pay) their provisional income tax filing amount as being half of the amount of profit-seeking enterprise income tax declared in the previous year will not be required to fill out and submit a provisional income tax return. (2) Starting with the profit-seeking enterprise income tax filings for the year 2009 (filing period: May 1 – May 31, 2010), those profit-seeking enterprises that are structured as sole proprietorships or partnerships will not be required to calculate the amount of profit-seeking enterprise income tax payable; they will only be required to report their income, which can be added to the personal income of the business owner or partners and the tax paid as personal income tax. In addition, starting from fiscal 2009, sole proprietorships and partnerships will no longer be required to make provisional income tax filings. This new regulation will apply to approximately 260,000 sole proprietorships and partnerships. (3) The adoption of or

changes to particular methods of valuing inventory or determining depreciation of fixed assets will no longer need to be reported to and approved by the tax authorities, so as to simplify auditing procedures.

From the point of view of Taiwan's SMEs, this simplification of the tax system will help to reduce the SMEs' tax burden, while also improving the efficiency of both tax administration and business operations.

3. A Reduction in the Profit-seeking Enterprise Income Tax Rate from 25% to 20%

Following the termination of the period of extended implementation of the *Statute for Upgrading Industries*, in addition to the retention of four functional tax breaks and the simplification of the tax system, the *Income Tax Law* has been passed to create a more internationally competitive tax environment and a more transparent investment environment, thereby making Taiwan more attractive to foreign investment and helping to drive economic growth. Starting from 2010, the rate at which profit-seeking enterprise income tax will be payable will be reduced from 25% to 20%, while the rates at which individual income tax payers in different income banks pay individual income tax will be adjusted from rates of 6%, 13%, 21%, 30% and 40% to rates of 5%, 12%, 20%, 30% and 40%. Following this revision, those profit-seeking enterprises with annual taxable income under NT\$120,000 will be exempted from paying income tax, while all enterprises with taxable income of more than NT\$120,000 will pay income tax at a uniform rate of 20%. The Ministry of Finance anticipates that 700,000 firms will benefit from this measure, which will help to reduce the unfair variation in the tax burden between industries, and will support the development of both SMEs and traditional industries.

4. A Five-year Exemption from Profit-seeking Enterprise Income Tax for New Investment by Manufacturing Firms and Enterprises in Technology Services Industries

As a result of the global financial crisis, since the second half of 2008 countries all around the world have been experiencing a pronounced economic downturn, Taiwan has been no exception. To encourage firms in the manufacturing sector and in the technology services industries to undertake investment that can help to drive an economic recovery, the Ministry of Economic Affairs has formulated the *Measures for the Provision of a Five-year Tax Exemption from Profit-seeking Enterprise Income Tax for Enterprises in the Manufacturing Sector and Technology Services Industries for New Income Arising During the Period July 1 2008 to December 31, 2009*, in accordance with the provisions of Article 9-2 of the revised

Statute for Upgrading Industries. Those manufacturing and technology services firms that conform to the specified criteria can apply to the Industrial Development Bureau for a five-year tax exemption approval letter. These firms must undertake new investment to establish a new business or expand the capitalization of an existing business during the period from July 1, 2008 to December 31, 2009.

5. Deferred Income Tax Payment Measures

In order to help businesses and individuals that are having difficulty paying their income tax because of the impact of the global financial crisis and the resulting economic downturn, on February 4 and April 10, 2009 the Ministry of Finance promulgated the *Ministry of Finance Regulations Governing the Deferment of Income Tax Payment in Response to the Global Financial Crisis and Economic Downturn*. Profit-seeking enterprises whose taxable net income in the period September – December 2008 or the period January – April 2009 was at least 30% lower than during the same period in the previous year may, within the specified period, submit an application for tax payment deferral no later than December 31, 2009.

6. The Reduction in the Rates of Inheritance Tax and Gift Tax Will Help SMEs to Maintain a Reasonable Level of Working Capital

In January 2009, the *Inheritance and Gift Tax Law* was revised, with a reduction in the rates at which inheritance and gift tax are payable from up to 50% to a uniform rate of 10%, as well as an increase in allowable deductions. Although this measure is not directly related to SMEs, it will help both enterprises and individuals that need to remit funds into Taiwan from overseas, thereby helping Taiwan's SMEs to maintain a reasonably high level of working capital.

Chapter 4

The Current Status of SMEs' Labor Utilization

The Taiwanese economy was not spared the impact of the global financial crisis in 2008. The whole-year economic growth rate fell to 0.06%; while the number of people in work rose by 1.06% compared to 2007, the average unemployment rate – at 4.14% – was 0.23 percentage points higher than in 2007. This chapter will examine SME labor utilization in 2008, working conditions, and SMEs' manpower cultivation efforts.

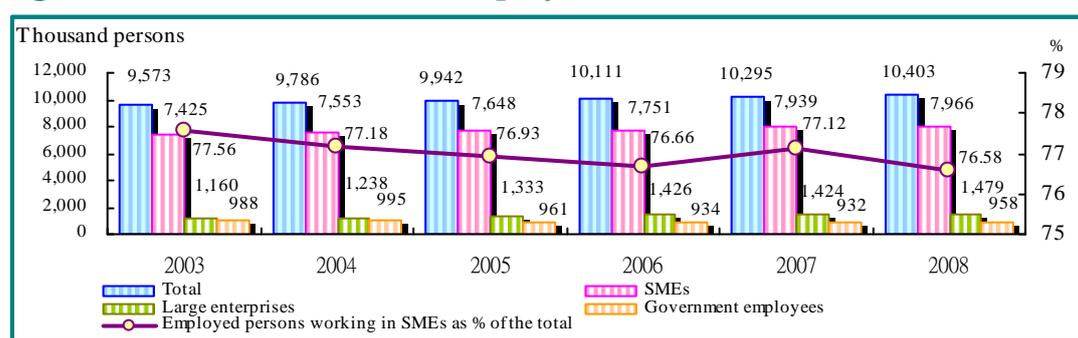
In this chapter, enterprise size is defined according to the number of employees. Enterprises in the mining and quarrying industry, manufacturing industry and the construction industry with less than 200 employees, and enterprises in other industries with less than 50 employees, are classed as SMEs. However, in some cases limited availability of data makes it impossible to use this classification system; in such cases, SMEs are defined as enterprises with less than 100 employees; this is pointed out in the text where appropriate.

I Labor Usage in SMEs

1. An Increase of 27,000 in the Number of People Working in SMEs

In 2008, Taiwan's total available workforce amounted to 10,853,000 persons, of which 10,403,000 were employed persons. The number of employed persons working in SMEs in Taiwan was 7,966,000; this figure represented an increase of 27,000 compared to 2007, but

Figure 4-1-1 The Number of Employed Persons in Taiwan, 2003–2008



Source: Directorate General of Budget, Accounting and Statistics (DGBAS), Executive Yuan, *Monthly Bulletin of Manpower Statistics*, 2003 – 2008.

the SMEs' share of all employed persons in Taiwan fell to 76.58%, because the number of employed persons working in large enterprises rose by 3.86% while the number of employed persons working in SMEs increased by only 0.34% (Figure 4-1-1).

The number of employed persons working in SMEs in the manufacturing sector in 2008 stood at 2,191,000, accounting for 27.50% of all employed persons working in SMEs. The wholesaling and retailing industry had the second largest number at 1,652,000 (20.74%), followed by the construction industry with 823,000 (10.33%) (Table 4-1-1).

Table 4-1-1 The Number of Persons Working in SMEs in Individual Industries in 2007 and 2008

Units: thousand persons; %

Industry	Employed Persons				Paid Employees			
	2007	2008	% of Total	Annual Growth Rate	2007	2008	% of Total	Annual Growth Rate
Total	7,939	7,966	100.00	0.34	5,383	5,469	100.00	1.60
Agriculture, forestry, fisheries and animal husbandry	538	529	6.64	-1.67	68	75	1.37	10.29
Mining and quarrying	5	5	0.06	0.00	5	4	0.07	-20.00
Manufacturing	2,180	2,191	27.50	0.50	1,893	1,907	34.87	0.74
Electric power and gas	3	2	0.03	-33.33	3	2	0.04	-33.33
Water supply and pollution remediation	23	28	0.35	21.74	16	22	0.40	37.50
Construction	827	823	10.33	-0.48	690	686	12.54	-0.58
Wholesaling and retailing	1,667	1,652	20.74	-0.90	869	879	16.07	1.15
Transportation and warehousing	281	275	3.45	-2.14	177	175	3.20	-1.13
Hotel and restaurant	653	659	8.27	0.92	339	353	6.45	4.13
Information, communications and broadcasting	116	119	1.49	2.59	102	108	1.97	5.88
Finance and insurance	223	228	2.86	2.24	220	224	4.10	1.82
Real estate	66	68	0.85	3.03	56	59	1.08	5.36
Professional, scientific and technical services	232	238	2.99	2.59	153	162	2.96	5.88
Support services	182	194	2.44	6.59	157	171	3.13	8.92
Educational services	210	208	2.61	-0.95	173	171	3.13	-1.16
Medical, healthcare and social services	147	157	1.97	6.80	110	121	2.21	10.00
Arts, entertainment and leisure services	79	76	0.95	-3.80	56	54	0.99	-3.57
Other service industries	507	513	6.44	1.18	296	294	5.38	-0.68

Source: DGBAS, *Monthly Bulletin of Manpower Statistics*.

The age structure, gender structure and educational structure of employed persons working in SMEs were largely unchanged in 2008 compared to 2007. Employed persons working in SMEs are heavily concentrated in the 25 – 55 age group; while male employed persons outnumber female employed persons, the female share has been rising steadily. There has also been a gradual increase in the average educational attainment of employed persons working for SMEs, with a rise in the share of employed persons educated to junior college level or above, and a fall in the share educated to senior vocational school level or below; this trend is probably related to the government's policy of expanding access to higher education (Table 4-1-2).

Table 4-1-2 Characteristics of Employed Persons in Taiwan in 2007 and 2008

Units: thousand persons; %

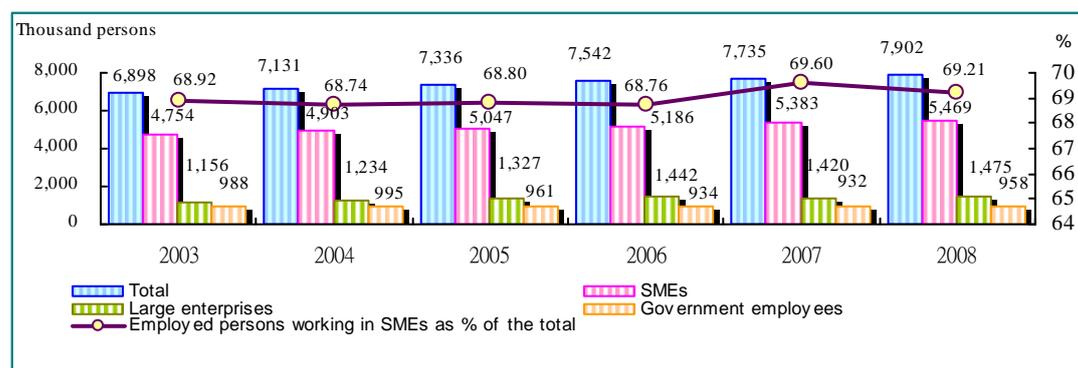
Item	2007			2008		
	SMEs	Large Enterprises	Government Employees	SMEs	Large Enterprises	Government Employees
Total No. of Persons (Share of total)	7,939 (77.12)	1,424 (13.83)	932 (9.05)	7,966 (76.58)	1,479 (14.22)	958 (9.21)
Age	100.00	100.00	100.00	100.00	100.00	100.00
15 - 24	8.99	8.36	4.04	8.42	7.76	3.73
25 - 40	44.31	60.13	42.05	43.92	60.79	42.25
41 - 55	37.18	27.68	45.94	37.44	27.45	45.68
56 - 65	7.61	3.65	7.68	8.28	3.80	8.08
65 or over	1.90	0.18	0.28	1.94	0.20	0.27
Sex	100.00	100.00	100.00	100.00	100.00	100.00
Male	58.11	54.05	52.11	57.96	53.58	51.40
Female	41.89	45.95	47.89	42.04	46.42	48.60
Education	100.00	100.00	100.00	100.00	100.00	100.00
Illiterate	0.59	0.03	0.03	0.51	0.02	0.02
Self-taught	0.14	0.01	0.02	0.13	0.04	0.01
Primary school	12.87	2.14	2.80	12.03	1.94	2.54
Junior high school	18.20	4.90	4.09	17.49	4.69	3.66
Senior high school	9.28	6.39	6.22	9.22	6.17	5.78
Senior vocational school	29.59	21.54	14.78	29.45	20.62	14.11
Junior college	15.13	24.30	23.27	15.38	23.17	22.81
University	12.33	29.44	34.44	13.68	30.74	35.97
Master's	1.78	9.60	11.78	2.02	11.00	12.46
Ph.D.	0.10	1.64	2.56	0.10	1.62	2.64

Source: DGBAS, *Monthly Bulletin of Manpower Statistics*.

2. A 1.60% Increase in the Number of Paid Employees Working for SMEs

The total number of paid employees (including government employees) in Taiwan in 2008 was 7,902,000, representing an increase of 167,000 (2.16%) compared to 2007. The number of paid employees working for SMEs was 5,469,000. The percentage of all paid employees who were working for SMEs as opposed to working for large enterprises or the government fell slightly, from 69.60% in 2007 to 69.21% in 2008. In absolute terms, however, the number of paid employees working for SMEs rose by 86,000 (1.60%). When compared to the number of employed persons working in SMEs, the number of paid employees is relatively low; this reflects the fact that the employed persons working in SMEs include large numbers of business owners and self-employed persons.

The characteristics of paid employees working for SMEs are very similar to those of employed persons working in SMEs. However, paid employees are more heavily concentrated in the 25 – 40 age group (51.91%), and the percentage of paid employees who are female, at nearly 45%, is higher than the corresponding percentage for employed persons (Table 4-1-3).

Figure 4-1-2 The Number of Paid Employees in Taiwan, 2003–2008

Source: DGBAS, *Monthly Bulletin of Manpower Statistics*.

Table 4-1-3 Characteristics of Paid Employed Persons in Taiwan in 2007 and 2008

Unit: thousand persons; %

Item	2007			2008		
	SMEs	Large Enterprises	Government Employees	SMEs	Large Enterprises	Government Employees
Total No. of Paid Persons (Share of total)	5,383 (69.60)	1,420 (18.36)	932 (12.04)	5,469 (69.21)	1,475 (18.67)	958 (12.12)
Age	100.00	100.00	100.00	100.00	100.00	100.00
15 - 24	12.22	8.39	4.04	11.36	7.78	3.73
25 - 40	52.37	60.27	42.05	51.91	60.92	42.25
41 - 55	31.14	27.62	45.94	31.85	27.39	45.68
56 - 65	3.97	3.55	7.68	4.56	3.72	8.08
65 or over	0.31	0.17	0.28	0.33	0.19	0.27
Sex	100.00	100.00	100.00	100.00	100.00	100.00
Male	55.62	53.96	52.11	55.40	53.49	51.40
Female	44.38	46.04	47.89	44.60	46.51	48.60
Education	100.00	100.00	100.00	100.00	100.00	100.00
Illiterate	0.17	0.03	0.03	0.15	0.02	0.02
Self-taught	0.04	0.01	0.02	0.05	0.04	0.01
Primary school	8.34	2.14	2.80	7.84	1.93	2.54
Junior high school	17.08	4.91	4.09	16.23	4.68	3.66
Senior high school	9.13	6.38	6.22	9.02	6.16	5.78
Senior vocational school	30.62	21.57	14.78	30.31	20.64	14.11
Junior college	17.32	24.33	23.27	17.25	23.20	22.81
University	15.06	29.40	34.44	16.60	30.71	35.97
Master's	2.14	9.60	11.78	2.42	10.98	12.46
Ph.D.	0.10	1.63	2.56	0.12	1.63	2.64

Source: DGBAS, *Monthly Bulletin of Manpower Statistics*.

3. There Were Around 504,000 SME Employers in 2008

The number of SME employers in Taiwan fell from 519,000 in 2007 to 504,000 in 2008. SME employers are concentrated in the 25 – 55 age group; employers aged between 41 and 55 accounted for more than half of the total, and this percentage continued to rise in 2008, reflecting a trend towards entrepreneurial activity among the middle-aged. On average, SME owners tend to be younger than the owners of large enterprises, suggesting that age is not an

especially important factor in starting up an SME. As average educational attainment in Taiwan has risen, the share of SME employers who are educated to senior vocational school level or above has increased too.

4. A Rise in the Percentage of Self-employed Persons Who Are Middle-aged

The self-employed either work alone or as part of a partnership; they may be assisted by persons who are working without pay, but they do not have any paid employees. Self-employed persons can thus all be classed as SMEs. The number of self-employed persons in Taiwan peaked in 1991 – 1992 at around 1,572,000; since then, it has tended to fall, dropping to 1,374,000 in 2008 (a decline of around 22,000 compared to 2007). The share of self-employed persons in the 25 – 40 age group fell by 1.07 percentage points in 2008, more than any other age group, while the percentage of self-employed persons who are aged 56 or over rose by 1.51 percentage points. This may reflect the difficulty that the middle-aged unemployed have in finding work, which may lead them to start their own business instead.

5. A Decline of 171 in the Number of Female SME Owners and Female Self-employed

The number of female SME owners fell by 3,129 in 2008 compared to 2007. Although the number of female self-employed rose slightly, the total number of female SME owners and female self-employed combined fell by 171 (0.04%) compared to 2007.

The percentage of SME employers and self-employed persons who are women has been rising steadily for some years now, reflecting a gradual increase in enthusiasm for entrepreneurial activity among women. Self-employed women account for just over 79% of the total number of female SME employers and self-employed. Female SME owners are heavily concentrated in the wholesaling and retailing industry, followed by the hotel and restaurant industry, and manufacturing (Table 4-1-4).

6. A Continued Increase in the Number of Persons Working in SMEs in Hi-tech, Knowledge-intensive Industries

Using the OECD definition of hi-tech, knowledge-intensive industries, as of 2008 there were just over 2.52 million people in Taiwan working in industries of this type, representing an increase of 90,000 compared to 2007. Of these, a little over 1.39 million were working in SMEs, up 46,000 from 2007; the number of persons working in large enterprises in hi-tech, knowledge-intensive industries increased by 22,000, and the number of government

employees working in this sector rose by 18,000. Employed persons working in hi-tech, knowledge-intensive industries are heavily concentrated in the 25 – 40 age group, far more so than is the case for Taiwanese industry as a whole. More than half of the employed persons working in the hi-tech, knowledge-intensive industries are female, suggesting that these industries offer significant opportunities for women.

Table 4-1-4 Distribution of Female Business Owners and Female Self-employed Persons by Industry in 2007 and 2008

Units: persons; %

Industry	2008			2007			2008		
	Business Owners (both sexes)		Self-employed Persons	Female Business Owners		Female Self-employed Persons	Female Business Owners		Female Self-employed Persons
	SMEs	Large Enterprises		SMEs	Large Enterprises		SMEs	Large Enterprises	
Total No. of Persons (Share of total)	504,240 (26.80)	3,447 (0.18)	1,374,059 (73.02)	92,419 (20.85)	539 (0.12)	350,380 (79.03)	89,290 (20.16)	338 (0.08)	353,338 (79.77)
Agriculture, forestry, fisheries and animal husbandry	8,611	0	319,168	684	0	37,321	722	0	37,367
Mining and quarrying	291	0	16	36	0	0	19	0	0
Manufacturing	130,290	1,380	79,362	9,405	0	6,562	9,855	227	6,464
Electric power and gas	20	0	—	0	0	224	0	0	—
Water supply and pollution remediation	2,471	0	1,829	305	0	615	226	0	118
Construction	59,348	28	55,241	2,081	0	0	1,970	0	260
Wholesaling and retailing	125,643	550	431,787	25,916	29	142,588	24,403	59	140,368
Transportation and warehousing	7,403	419	86,025	19,787	0	60,082	953	0	1,656
Hotel and restaurant	52,234	52	146,363	640	49	1,557	18,783	27	61,092
Information, communications and broadcasting	5,602	257	4,819	1,206	0	461	1,182	0	1,140
Finance and insurance	1,034	60	2,072	299	103	712	290	25	394
Real estate	3,761	43	5,023	1,014	118	891	698	0	837
Professional, scientific and technical services	26,993	120	38,196	6,773	0	12,212	6,659	0	12,851
Support services	8,672	447	9,746	8,004	155	11,401	1,783	0	2,593
Educational services	15,216	0	17,168	1,413	0	1,368	8,687	0	11,743
Medical, healthcare and social services	15,945	77	12,663	2,175	0	3,817	1,500	0	1,465
Arts, entertainment and leisure services	5,370	14	13,148	1,713	86	3,063	1,874	0	3,487
Other service industries	35,337	0	151,433	10,969	0	67,505	9,688	0	71,503

Source: DGBAS, *Monthly Bulletin of Manpower Statistics*.

7. An Increase of Over 20,000 in the Number of Employed Persons Working in SMEs in Important New Emerging Industries

The “important new emerging industries” include: chemical materials manufacturing; chemical products manufacturing; the manufacturing, repair and distribution of electrical machinery and electronics products; transportation vehicle manufacturing; and the manufacturing, repair and distribution of precision machinery. In 2008, there were just over 1,417,000 employed persons working in the important new emerging industries, representing

an increase of 50,000 compared to 2007. The number of employed persons working in SMEs in important new emerging industries rose by approximately 22,000 in 2008 (Table 4-1-5), although the SMEs' share of all employed persons working in important new emerging industries fell by 0.67 percentage points (due to the substantial increase of nearly 30,000 employed persons working in large enterprises).

Table 4-1-5 Characteristics of Employed Persons Working in Important New Emerging Industries in 2007 and 2008

Units: thousand persons; %

Item	2007			2008		
	SMEs	Large Enterprises	Government Employees	SMEs	Large Enterprises	Government Employees
Total No. of Persons (Share of total)	860.15 (62.89)	497.96 (36.41)	9.55 (0.70)	881.86 (62.22)	526.66 (37.16)	8.75 (0.62)
Age	100.00	100.00	100.00	100.00	100.00	100.00
15 - 24	10.62	10.04	2.86	9.29	9.17	1.94
25 - 40	57.60	68.82	26.34	58.73	69.88	35.11
41 - 55	28.58	19.45	63.50	28.38	19.39	54.51
56 - 65	2.97	1.67	7.30	3.35	1.50	7.86
65 or over	0.23	0.02	—	0.25	0.06	0.58
Sex	100.00	100.00	100.00	100.00	100.00	100.00
Male	60.41	58.86	82.10	61.42	58.21	77.10
Female	39.59	41.14	17.90	38.58	41.79	22.90
Education	100.00	100.00	100.00	100.00	100.00	100.00
Illiterate	0.03	0.01	—	0.03	0.01	—
Self-taught	0.01	0.02	—	0.02	0.04	—
Primary school	5.60	1.47	1.00	4.76	1.32	1.15
Junior high school	11.83	4.76	4.65	10.98	4.44	5.09
Senior high school	8.31	6.95	7.02	7.78	6.73	5.05
Senior vocational school	31.37	27.06	29.94	30.50	25.93	29.81
Junior college	21.76	22.79	26.60	22.31	21.74	27.14
University	17.13	25.73	24.03	19.31	27.53	25.39
Master's	3.79	10.49	6.75	4.07	11.66	6.36
Ph.D.	0.17	0.71	—	0.22	0.61	—

Note: The "important new emerging industries" include: chemical materials manufacturing; chemical products manufacturing; the manufacturing, repair and distribution of electrical machinery and electronics products; transportation vehicle manufacturing; and the manufacturing, repair and distribution of precision machinery.

Source: DGBAS, *Monthly Bulletin of Manpower Statistics*.

8. A Substantial Fall in the Number of Employed Persons Working in SMEs in the Cultural and Creative Industries

The number of employed persons working in the cultural and creative industries fell from 306,000 in 2007 to 295,000 in 2008. Over this same period, the share of employed persons working in SMEs in the cultural and creative industries rose from 77.84% of all employed persons working in these industries to 76.57%. In the SME sector, the numbers of employed persons working in the artistic creation and artistic performance industry, the broadcasting industry, publishing, specialist design services, architectural and engineering services and the technology inspection and analysis industry all rose in 2008 compared to the previous year. The largest number of employed persons was working in the sporting, entertainment and

leisure services industry, but this industry's share of all employed persons fell from 25.57% to 23.89% in 2008. In 2008, 28.20% of the employed persons working in the cultural and creative industries were educated to university level or above; this percentage was slightly up on 2007. In large enterprises, the percentage was over 50%. Clearly, manpower quality in the cultural and creative industries tends to be higher than the average for Taiwanese industry as a whole.

9. An Increase in the Number of People That Had Previously Worked in SMEs Who Have Been Made Redundant

The number of unemployed persons in Taiwan rose by around 31,000 in 2008, and the unemployment rate increased to 4.14%. The number of unemployed persons who had previously worked in SMEs rose from 281,000 in 2007 to 306,000 in 2008, while the number who had previously worked in large enterprises rose from 36,000 to 38,000 (Table 4-1-6).

Table 4-1-6 Characteristics of the Unemployed in 2007 and 2008

Units: thousand persons; %

Item \ Sex	2007			2008		
	SMEs	Large Enterprises	Government Employees	SMEs	Large Enterprises	Government Employees
Total No. of Persons (Share of total)	281.23 (67.15)	36.22 (8.65)	101.33 (24.20)	306.36 (68.11)	37.57 (8.35)	105.91 (23.54)
Age	100.00	100.00	100.00	100.00	100.00	100.00
15 - 24	15.76	12.63	54.12	14.77	12.23	56.79
25 - 40	51.81	57.27	38.03	50.58	61.60	37.83
41 - 55	29.13	27.18	6.59	30.44	23.92	4.40
56 - 65	3.23	2.90	1.26	4.17	2.23	0.95
65 or over	0.07	0.02	—	0.04	0.03	0.03
Sex	100.00	100.00	100.00	100.00	100.00	100.00
Male	61.11	55.97	54.90	63.11	56.20	53.14
Female	38.89	44.03	45.10	36.89	43.80	46.86
Education	100.00	100.00	100.00	100.00	100.00	100.00
Illiterate	0.15	—	0.03	0.11	—	0.00
Self-taught	0.03	—	—	0.07	—	0.02
Primary school	8.06	2.33	2.23	8.58	2.31	1.29
Junior high school	18.95	8.34	6.85	20.01	7.51	6.43
Senior high school	9.59	8.50	6.49	10.12	8.06	5.74
Senior vocational school	35.09	30.11	19.20	32.15	26.45	16.70
Junior college	14.42	22.58	12.48	14.52	18.18	11.69
University	12.80	23.21	45.40	13.17	31.05	48.38
Master's	0.91	4.94	7.13	1.20	5.62	9.62
Ph.D.	0.00	—	0.19	0.08	0.83	0.13

Note: The enterprise types given in the table are those in which the unemployed worked before becoming unemployed.

Source: DGBAS, Monthly Bulletin of Manpower Statistics.

The global financial situation has been deteriorating since the second half of 2007. In Taiwan, the unemployment rate rose from 3.81% in April 2008 to 5.03% in December 2008. 17.8% of large enterprises (those with 200 or more employees) made employees take “unpaid leave” with around 202,000 people being affected. About 370,000 applications for

unemployment benefit were received in 2008, with a total of NT\$6.6 billion being disbursed, compared to NT\$1.3 billion in 2007. These figures appear to indicate the seriousness of the unemployment problem.

To help solve Taiwan's unemployment problem, besides working to revitalize the economy, the government has also implemented a number of manpower cultivation and job creation measures. The short-term job creation measures and initiatives that the government has implemented include the "Find Job" scheme, the Public Sector Short-term Job Creation Plan, the Manpower Retention Plan, the High Quality Manpower Cultivation and Job Creation Plan, the Short-term Employment Skill Promotion Plan, the 2006 – 2008 Plan for Placement of University and Junior College Graduates in Industry and Internship Programs, and the 2006 – 2008 University and Junior College Graduate Joint Incubation Plan, etc. The aim of these initiatives is to help unemployed workers to find new jobs as quickly as possible, so as to mitigate the impact of rising unemployment and related social problems.

Since the implementation of the government's job creation initiatives began, as of June 15, 2009, the 2008 – 2009 Short-term Job Creation Measures had brought about the creation of 38,820 new jobs in 2008 and 41,436 new jobs in 2009.

As regards the 2009 – 2012 Job Creation Measures, in 2009 approximately 58,000 unemployed people found work, and nearly 240,000 underwent training. The various ministries and agencies concerned had set a target of enabling 43,827 individuals to find jobs and providing training for 169,490 by June 2009; as of June 15, 2009, these Measures had helped 45,175 people to find work, and 169,490 to undergo training (Table 4-1-7).

Table 4-1-7 Results Achieved in the Implementation of the 2009–2012 Job Creation Measures

Unit: persons

Category	Job Creation Plan	Annual Target	Target for June 2009 (A)	Results Achieved as of June 15, 2009	
				No. of Persons (B)	(B)/(A)
Training (instances)	Expanding collaboration between industry and the university sector	51,150	31,000	31,061	100
	Strengthening training to promote job creation	184,720	138,490	130,674	94
Sub-total		235,870	169,490	161,735	95
No. of persons securing employment	Increasing the success rate in the matching of job seekers with vacancies	26,380	24,047	24,993	104
	Provision of wage subsidies to increase employment	15,122	15,122	15,122	100
	Assistance for entrepreneurs and the self-employed	6,110	1,645	1,940	118
	Stepping up of short-term job creation measures	10,722	3,013	3,120	104
Sub-total		58,334	43,827	45,175	103

Source: Council for Economic Planning and Development (Executive Yuan) website.

10. A Decline of Around 12,000 in the Number of SME Employees Changing Jobs

The number of SME employees changing jobs fell to 427,000 in 2008, representing a decline of 12,000 compared to 2007. The number of SME employees going to work for another SME remained high, at 88.32% of the total, although this figure was slightly down on 2007.

11. Manufacturing Industry Makes the Most Use of Agency Workers

Increasingly, managers are focusing on cost control and efficient manpower utilization so as to boost overall competitiveness. This trend has created demand for new types of employee distinct from conventional full-time, regular employees. According to the data presented in the 2006 Industrial and Business Census, as of the end of 2006 a total of 7,792 enterprises (0.71%) were using agency workers, with the average number of agency workers in any given month being 114,506, representing 1.68% of all paid employees; annual expenditure on agency workers totaled nearly NT\$26 billion (Table 4-1-8). While 6,668 of the firms using agency workers were SMEs (accounting for 85.57% of all firms that used agency workers), this figure represented only 0.61% of all SMEs in Taiwan, whereas 13.39% of large enterprises were using agency workers. Large enterprises also accounted for the lion's share of agency workers and expenditure on agency workers; regular employees are still the norm in the SME sector.

Table 4-1-8 The Use of Agency Workers in the Manufacturing Sector and in the Service Sector in 2006

Item	Total No. of Firms at Year-end (A)	Firms Using Agency Workers					
		No. of Firms (B)		Average No. of Agency Workers in Any Given Month		Annual Expenditure on Agency Workers	
			B/A*100 (%)		Share of All Paid Employees (%)	(NT\$ millions)	Share of Total Expenditure (%)
Total	1,105,102	7,792	0.71	114,506	1.68	25,986	0.06
By enterprise size							
Large enterprises	8,397	1,124	13.39	71,838	2.57	19,892	0.07
SMEs	1,096,705	6,668	0.61	42,668	1.05	6,094	0.04
Manufacturing Sector	226,048	3,254	1.44	60,550	1.93	12,932	0.06
Large enterprises	1,642	416	25.33	37,906	3.26	9,731	0.07
SMEs	224,406	2,838	1.26	22,644	1.15	3,201	0.05
Service Sector	879,054	4,538	0.52	53,956	1.46	13,053	0.06
Large enterprises	6,755	708	10.48	33,932	2.07	10,160	0.08
SMEs	872,299	3,830	0.44	20,024	0.97	2,893	0.04

Source: DGBAS, Industrial and Business Census, 2006.

12. A Substantial Increase in the Number of Foreign Laborers Employed by SMEs

In Taiwan, the government's policy with respect to the importation of foreign laborers has

consistently emphasized the need to prevent foreign laborers from playing more than a supplementary role in the economy. However, since the importation of foreign laborers first began in 1989, there has been a steady increase in the number of foreign laborers working in Taiwan. To reduce competition for jobs between foreign laborers and domestic workers, in 2001 the Council of Labor Affairs began to tighten the restrictions in the importation of foreign laborers and to reduce the quotas; as a result, the number of foreign laborers fell, bottoming out in 2003. However, because of complaints about labor shortages in industry, the government subsequently implemented a slight relaxation of the restrictions, and the number of foreign laborers in Taiwan began to rise again. The official quota for the importation of foreign laborers rose by 8,875 in 2008 compared to 2007; however, the number of foreign laborers actually working in Taiwan fell by 155 (Table 4-1-9).

Table 4-1-9 The Number of Foreign Laborers Employed by Large Enterprises and by SMEs, 2002–2008

Units: persons; %

Year	Item	Foreign Laborer Approvals			No. of Foreign Laborers Actually in Taiwan		
		All Enterprises	SMEs	Large Enterprises	All Enterprises	SMEs	Large Enterprises
2002		203,235	85,965 (42.30)	117,270 (57.70)	180,038	76,846 (42.68)	103,192 (57.32)
2003		196,638	83,322 (42.37)	113,316 (57.63)	176,156	75,824 (43.04)	100,332 (56.96)
2004		199,346	81,996 (41.13)	117,350 (58.87)	179,878	75,224 (41.82)	104,654 (58.18)
2005		197,283	83,614 (42.38)	113,669 (57.62)	180,234	76,149 (42.25)	104,085 (57.75)
2006		206,385	93,507 (45.31)	112,878 (54.69)	181,648	79,388 (43.70)	102,260 (56.30)
2007		211,821	100,064 (47.24)	111,757 (52.76)	191,923	90,632 (47.22)	101,291 (52.78)
2008		220,696	113,530 (51.44)	107,166 (48.56)	191,768	100,496 (52.40)	91,272 (47.60)

Notes: 1. Figures include only foreign laborers employed by manufacturing and construction firms.

2. SMEs are defined as firms with less than 200 employees.

3. Figures in parentheses are percentages of the total.

Source: Bureau of Employment and Vocational Training, Council of Labor Affairs, Executive Yuan.

The increase in the number of foreign laborers over the past few years has mainly been derived from demand on the part of SMEs; the number of foreign laborers employed by large enterprises has tended to fall. In 2008, the official quota for the importation of foreign laborers rose by 8,875, but the increase with respect to foreign laborers working for SMEs was 13,466, while the number of foreign laborers actually working in Taiwan for SMEs rose by 9,864; these figures represented annual growth rates of 51.44% and 52.40%, respectively. While the gradual increase in the importation of foreign laborers by SMEs has helped SMEs to solve the problems of labor shortages and high manpower costs, in the long term, SMEs should really be focusing on upgrading their technology and on automation, so as to reduce their dependence on foreign laborers.

II Labor Conditions in SMEs

1. The Highest Salary Levels for SME Employees Are Found in the Medical, Healthcare and Social Services Industry

As can be seen from the data in Table 4-2-1, in 2008 the industry in which SME employees had the highest average salary level was the medical, healthcare and social services industry, followed by the professional, scientific and technical services industry; the agriculture, forestry, fishing and animal husbandry industry had the lowest average salary. Among large enterprises, the highest salaries were found in the professional, scientific and technical services industry and the finance and insurance industry; here again, the agriculture, forestry, fisheries and animal husbandry industry had the lowest salaries. For government employees, the highest average salaries were in the finance and insurance sector, followed by mining and quarrying; real estate had the lowest average salaries.

Table 4-2-1 Average Monthly Salary in 2007 and 2008 – by industry

Unit: NT\$ thousands

Industry	Enterprise Size		2007			2008		
	SMEs	Large Enterprises	SMEs	Large Enterprises	Government Employees	SMEs	Large Enterprises	Government Employees
Agriculture, forestry, fisheries and animal husbandry	14.63	23.74	37.46	19.14	23.74	37.46		
Mining and quarrying	38.20	—	60.03	40.92	—	60.03		
Manufacturing	31.88	36.76	50.95	33.25	36.76	50.95		
Electric power and gas	29.04	34.34	59.61	29.04	34.34	59.61		
Water supply and pollution remediation	30.06	31.11	34.71	32.66	31.11	34.71		
Construction	34.86	49.58	47.07	35.78	49.58	47.07		
Wholesaling and retailing	30.23	39.45	41.93	34.87	39.45	41.93		
Transportation and warehousing	24.88	31.48	41.48	36.19	44.99	43.14		
Hotel and restaurant	35.60	44.99	43.14	29.50	31.48	41.48		
Information, communications and broadcasting	39.08	49.03	42.08	39.38	49.03	42.08		
Finance and insurance	40.11	52.26	64.12	40.17	52.26	64.12		
Real estate	36.74	42.00	32.46	37.51	42.00	32.46		
Professional, scientific and technical services	39.27	52.27	50.08	41.99	52.27	50.08		
Support services	29.31	47.97	48.78	29.08	43.18	33.24		
Educational services	44.17	46.44	50.47	30.23	47.97	48.78		
Medical, healthcare and social services	27.50	27.83	33.60	47.21	46.44	50.47		
Arts, entertainment and leisure services	28.24	43.18	33.24	30.57	27.83	33.60		
Other service industries	28.71	34.64	40.48	30.44	34.64	40.48		

Source: DGBAS, Taiwan Region Manpower and Employment Survey.

2. Personnel Costs Account for 30 – 40% of SMEs' Operating Expenses

In the SME sector, the share of overall operating expenses held by personnel costs has consistently been highest in the medical, healthcare and social services industry; in 2007, the percentage stood at 49.51% in this industry (Table 4-2-2). The personnel costs' share of operating expenses was lowest in the professional, scientific and technical services industry,

at just 6.02%. For most other industries, the percentage averaged around 40%. In manufacturing industry and in the wholesaling and retailing industry, which between them include a very large number of SMEs, the personnel costs' share of operating expenses is far higher among SMEs than it is among large enterprises. The personnel costs' share of operating costs is also higher among SMEs than among large enterprises.

Table 4-2-2 Personnel Costs as a Percentage of Operating Costs and Operating Expenses in 2007

Unit: %

Industry	Personnel Costs as a Percentage of Operating Expenses		Personnel Costs as a Percentage of Operating Costs	
	SMEs	Large Enterprises	SMEs	Large Enterprises
Agriculture, forestry, fisheries and animal husbandry	34.38	42.32	5.34	6.59
Mining and quarrying	15.64	38.80	2.49	4.55
Manufacturing	32.99	21.95	1.43	1.44
Water, electricity and gas	36.68	47.17	7.54	1.80
Construction	37.39	43.30	4.72	2.00
Wholesaling and retailing	42.61	33.54	8.80	3.21
Hotel and restaurant	37.84	37.95	17.15	18.85
Transportation, warehousing and communications	39.04	35.69	13.42	4.97
Finance and insurance	37.59	39.84	10.97	0.84
Real estate and leasing	33.51	19.12	10.77	2.41
Professional, scientific and technical services	6.02	34.67	5.27	7.85
Educational services	48.26	44.48	31.56	23.77
Medical, healthcare and social services	49.51	48.02	9.11	3.53
Cultural, sporting and leisure services	39.11	31.63	17.42	10.32
Other service industries	45.73	46.64	22.09	9.17
Total (all industries)	28.36	30.97	3.59	1.57

Note: Operating costs include business costs and operating expenses.

Source: Ministry of Finance Tax Data Center, Business income tax data for 2007.

3. For All Industries, 2007 Saw Little Change in the Average Number of Hours Worked per Week

In the SME sector, the hotel and restaurant industry has for many years had the longest working hours (in terms of hours worked per week). In 2008, SME employees in the hotel and restaurant industry worked an average of 48.51 hours per week; "other service industries" were in second place with 46.50 hours per week, followed by the wholesaling and retailing industry with 46.28 hours per week (Table 4-2-3). The educational services industry had the shortest working hours, at 39.07 hours per week. Most industries saw a fall in working hours in 2008; the only exceptions were the mining and quarrying industry, the electric power and gas industry, and the finance and insurance industry, where average working hours increased slightly compared to 2007. Working hours for employees of large enterprises tend to be similar to or slightly lower than those of SMEs, although there are some industries where this is not the case, demonstrating that large enterprises do not necessarily offer shorter working hours and higher pay than SMEs in the same industry.

Table 4-2-3 Working Hours per Week in 2007 and 2008 – by Industry

Unit: hours per week

Industry	Enterprise Type	2007			2008		
		SMEs	Large Enterprises	Government Employees	SMEs	Large Enterprises	Government Employees
Agriculture, forestry, fisheries and animal husbandry		40.30	45.30	40.49	39.78	44.78	40.56
Mining and quarrying		43.51	40.00	40.05	43.62	48.00	39.73
Manufacturing		43.65	43.86	41.20	42.96	42.49	40.34
Electric power and gas		44.01	42.49	40.40	44.60	41.25	39.79
Water supply and pollution remediation		45.16	42.75	41.83	43.59	43.34	41.42
Construction		42.04	43.96	40.69	40.47	42.44	40.54
Wholesaling and retailing		48.00	44.91	41.10	46.28	44.15	40.60
Transportation and warehousing		47.94	44.90	40.97	45.38	43.95	40.32
Hotel and restaurant industry		49.98	45.79	41.70	48.51	44.65	40.80
Information, communications and broadcasting		43.08	43.18	42.28	42.46	42.84	41.71
Finance and insurance		43.90	43.93	41.05	44.26	41.66	40.60
Real estate		47.07	49.33	39.68	45.47	48.63	38.28
Professional, scientific and technical services		43.28	41.12	40.51	42.86	43.54	39.71
Support services		44.67	47.50	40.75	44.67	46.55	40.03
Educational services		39.44	36.85	35.64	39.07	34.44	36.62
Medical, healthcare and social services		45.99	44.93	42.11	44.57	44.17	42.58
Arts, entertainment and leisure services		47.29	44.86	39.78	46.23	43.13	39.98
Other service industries		48.10	46.45	41.93	46.50	43.35	41.53

Source: DGBAS, *Monthly Bulletin of Manpower Statistics*, 2007 – 2008.**Table 4-2-4 Working Hours per Week for Employees in the Private Sector in 2007 and 2008**

Unit: hours per week

Item	Enterprise size	SMEs		Large Enterprises	
		2007	2008	2007	2008
Average working hours per week (all employees)		43.75	42.87	43.98	42.91
Age					
15 - 24		43.57	42.77	42.77	41.14
25 - 40		44.74	43.67	44.72	44.01
41 - 55		43.90	43.14	44.79	43.49
56 - 65		42.51	41.98	42.35	41.48
65 or over		42.69	41.41	38.82	39.48
Sex					
Male		44.49	43.42	44.57	43.36
Female		43.00	42.30	43.36	42.43
Education					
Illiterate		42.03	39.95	45.55	44.22
Self-taught		41.75	40.52	42.70	39.07
Primary school		44.16	42.12	44.11	44.93
Junior high school		44.55	44.07	46.03	43.46
Senior high school		44.14	43.49	45.78	44.58
Senior vocational school		44.41	43.95	45.02	43.43
Junior college		43.67	43.80	43.48	42.78
University		43.13	41.77	41.93	41.46
Master's		41.93	41.06	42.11	41.02
Ph.D.		41.42	40.88	39.54	40.34

Source: DGBAS, *Monthly Bulletin of Manpower Statistics*, 2007 – 2008.

Among workers in the private sector, average working hours are longest for those employees in the 25 – 40 age group, after which they tend to fall over time. 2008 saw a fall in average working hours for employees of both SMEs and large enterprises; many firms

have responded to the downturn by forcing employees to take unpaid leave or by cutting working hours (Table 4-2-4).

III Manpower Cultivation in SMEs

1. The Economic Downturn Has Led Enterprises to Attach More Importance to Employee Training

To encourage business enterprises to implement employee training and undertake ongoing investment in human capital, the Council of Labor Affairs provides subsidies for individual enterprises and organizations to arrange training programs for their employees in line with operational needs, and also encourages enterprises in related industries to join forces with one another to implement employee training on a joint basis. In 2008 subsidies were provided for a total of 38,282 training classes with 733,638 participants. It can thus be seen that business enterprises in Taiwan are making a real effort in the area of manpower cultivation (Table 4-3-1).

Table 4-3-1 Provision of Assistance to Enhance Manpower Cultivation by Business Enterprises, 2004–2008

Year	Individual Training Plans			Joint Training Plans			
	No. of Firms Receiving Subsidies	No. of Training Classes	No. of Training Participants	No. of Projects	No. of Firms Taking Part	No. of Training Classes	No. of Training Participants
2004	1,288	13,828	213,809	76	588	1,282	42,225
2005	1,471	22,115	394,997	89	1,146	3,062	104,153
2006	1,551	22,486	424,311	87	668	2,814	102,867
2007	1,307	26,953	547,805	102	1,891	2,692	108,389
2008	1,415	38,282	733,638	112	2,088	4,583	131,971

Source: Bureau of Employment and Vocational Training, Council of Labor Affairs, Executive Yuan.

2. A Substantial Increase in the Number of SME Employees Participating in Professional Training in 2007

Since 2002, the number of persons participating in professional training programs has risen steadily, breaking through the one million mark in 2005 and climbing to a record 1,623,920 in 2007. There have been particularly impressive increases in this regard among both public and private enterprises with 200 or more employees; the number of employees of such enterprises taking part in professional training rose to 1,273,910 in 2007. There has also been a substantial increase in the number of employees of enterprises with fewer than 200 employees taking part in professional training programs; the 2007 total, at 190,664 employees, was the highest since 2002 (Table 4-3-2).

Table 4-3-2 The Number of Employees Participating in Professional Training, 2002–2007

Unit: instances of training

Year	Total Instances of Participation in Professional Training	Employees of Public or Private Companies/Agencies with Less than 200 Employees	Employees of Public or Private Companies/Agencies with 200 or More Employees	Other Organizations
2002	738,580	160,498	399,128	178,954
2003	859,308	145,503	499,079	214,726
2004	883,921	175,682	541,872	166,367
2005	1,090,745	164,146	718,483	208,116
2006	1,139,902	107,882	842,866	189,154
2007	1,623,920	190,664	1,273,910	159,346

Notes: 1. The “Employees of Public or Private Companies/Agencies with 200 or More Employees” category includes training organized by public and private companies and agencies.

2. The “Employees of Public or Private Companies/Agencies with Less than 200 Employees” category includes training organized by public and private companies and agencies with less than 200 employees, and also training provided by training facilities attached to universities, foundations, public training institutions, etc.

3. The “Other Organizations” category includes training provided by government training institutions and by training facilities attached to universities, foundations, public training institutions, etc.

Source: Bureau of Employment and Vocational Training, Council of Labor Affairs, Executive Yuan.

3. A Pronounced Fall in Spending on Professional Training as a Percentage of Total Operating Expenses in Most Industries

Spending on professional training tends to account for only a very small share of total operating expenses for both SMEs and large enterprises. In 2007, this percentage fell for SMEs and for large enterprises, with a particularly noticeable decline in manufacturing industry, the water, electricity and gas industry, the finance and insurance industry, the professional, scientific and technical services industry, and the educational services industry (Table 4-3-3).

Table 4-3-3 Expenditure on Training as a Percentage of Operating Costs and Operating Expenses, 2005–2007

Unit: %

Industry	Enterprise Size	SMEs						Large Enterprises					
		Expenditure on Training as a Percentage of Operating Costs			Expenditure on Training as a Percentage of Operating Expenses			Expenditure on Training as a Percentage of Operating Costs			Expenditure on Training as a Percentage of Operating Expenses		
		2005	2006	2007	2005	2006	2007	2005	2006	2007	2005	2006	2007
Agriculture, forestry, fisheries and animal husbandry		0.15	0.13	0.02	1.10	0.87	0.12	0.17	0.08	0.01	1.40	0.53	0.05
Mining and quarrying		0.04	0.06	0.01	0.26	0.33	0.05	0.00	0.00	0.00	0.00	0.00	0.00
Manufacturing		0.13	0.35	0.01	1.13	2.62	0.13	0.20	0.14	0.02	2.63	1.94	0.23
Water, electricity and gas		0.76	0.41	0.01	3.57	2.05	0.04	0.06	0.08	0.01	1.50	1.78	0.16
Construction		0.13	0.16	0.02	1.11	1.27	0.13	0.08	0.10	0.01	1.84	2.12	0.23
Wholesaling and retailing		0.19	0.19	0.02	0.96	0.92	0.09	0.20	0.25	0.02	1.77	2.30	0.23
Hotel and restaurant		0.27	0.31	0.03	0.61	0.69	0.06	0.74	1.00	0.09	1.72	2.07	0.18
Transportation, warehousing and communications		0.37	0.38	0.04	1.14	1.12	0.12	2.15	1.05	0.09	11.03	7.00	0.62
Finance and insurance		2.17	2.77	0.33	6.80	9.01	1.14	0.02	0.04	0.01	2.98	2.48	0.27
Real estate and leasing		0.31	0.36	0.03	1.10	1.08	0.10	0.16	0.18	0.02	1.39	1.48	0.15
Professional, scientific and technical services		1.16	1.54	0.04	2.34	3.14	0.04	1.04	0.81	0.12	4.60	3.61	0.54
Educational services		1.04	1.40	0.12	1.51	2.11	0.19	0.77	2.49	0.22	1.57	4.07	0.40
Medical, healthcare and social services		0.17	0.33	0.02	0.40	0.84	0.12	0.00	—	0.00	—	—	0.03
Cultural, sporting and leisure services		0.46	0.44	0.04	1.05	0.98	0.08	0.41	0.46	0.05	1.36	1.38	0.14
Other service industries		0.78	0.90	0.09	1.69	1.91	0.18	0.71	0.65	0.07	3.34	3.33	0.38

Source: Ministry of Finance Tax Data Center, Business income tax data for 2005 – 2007.

4. Online Job Banks Are the Main Channel Used by SMEs for Recruitment of New Employees

According to the results of a survey undertaken by the SME Training Center, National Sun Yat-sen University, online job banks constitute SMEs' most widely used channel for the recruitment of new employees, with 48% of SMEs making use of them. The next most common channel is recommendation by existing employees (25%); the use of newspaper or magazine advertisements has fallen back to third place, with only 13% of firms using this method.

5. SMEs in Southern Taiwan Rely Mainly on In-house Training for Manpower Cultivation

According to the National Sun Yat-sen University survey, in-house training is the most widely used manpower cultivation method employed by SMEs in southern Taiwan (45% of SMEs), followed by training programs organized by management consultants (19%), certified training agencies (17%), dedicated SME training centers (7%), and conferences and seminars (13%); participation in conferences and seminars helps SMEs and their employees to keep up-to-date with the latest trends, when faced with the rapid pace of change in technology.

6. The Main Method Used by SMEs to Encourage Employee Participation in Education and Training is to Subsidize Part or All of the Cost of Training

The results obtained in the survey by National Sun Yat-sen University showed that the main method used by SMEs in southern Taiwan to encourage employee participation in education and training is to subsidize part or all of the cost of training; 53% of SMEs make use of this method. Other methods used include "lifelong learning passports" and giving employees time off work to take part in training activities. 13% of SMEs provide no concrete incentives for participation in education and training.

7. SMEs Find Difficult to Apply for Government Funding Support for Education and Training

With regard to the use of government resources by SMEs for employee education and training, the majority of SMEs reported that the application process was too complex, with too many different forms to be filled out, which discouraged them from applying to make use of government subsidies. Those SMEs that did try to make use of government resources usually sought help from firms of management consultants. 15% of SMEs reported having

participated in manpower cultivation activities for which they received government subsidies, against 85% that had not.

Chapter 5

The Current State of SME Trade and Overseas Investment Activity

Since the restrictions on investment in mainland China first began to be relaxed, China has gradually emerged as the most important overseas investment destination for Taiwanese businesses and businesspeople. This was mainly due to the absence of a language barrier, the low cost of Chinese labor, the lure of China's huge domestic market, and the various investment incentives that the Chinese central and local government authorities offered to Taiwanese investors. However, China has recently introduced a number of new laws and measures – including the reduction of tax drawback rates for exportation for certain categories of product in 2007, and the new Labor Contracts Law and Business Income Tax Law of 2008 – which have made China a much less attractive investment location; the advantages that investing in China used to offer, including tax breaks and low labor costs, are gradually being eroded.

Foreign trade and overseas investment by Taiwanese firms has been one of the most important drivers of economic growth for Taiwan. Small and medium enterprises (SMEs) have always constituted the backbone of the Taiwanese economy; their role in foreign trade and in overseas investment was a key factor in Taiwan's "economic miracle." The current status of SMEs' involvement in foreign trade and overseas investment is thus a very important issue. The limitations imposed by the available data make exploring this question a difficult task; the analysis presented in this chapter is based on those data sources that are available, including the Investment Commission, Ministry of Economic Affairs *Survey on Overseas Investment by Manufacturing Industry in Taiwan* (2008 edition; based on a survey conducted in 2007); Ministry of Finance import/export trade data and business income tax collection data, the *Survey of Taiwanese Investment in China* undertaken by the National Federation of Industries at the request of the Investment Commission, Ministry of Economic Affairs, and other data obtained from Ministry of Economic Affairs websites.

I Overview of Taiwan's Imports and Exports

The import and export statistics presented in this section are based on Ministry of Finance customs data. The original customs data were not broken down by enterprise size, so export sales figures from Ministry of Finance business income tax data have been used to

supplement them.

1. Imports and Exports – Key Trading Partners

According to Ministry of Finance statistics, in 2008 Taiwan's imports and exports totaled US\$496.48 billion, representing an increase of 6.6% compared to 2007. Exports totaled US\$255.66 billion, while imports came to US\$240.82 billion. The annual rates of increase for exports and imports were 3.6% and 9.8%, respectively.

Manufactured products have consistently accounted for over 99.0% of Taiwan's total exports for many years now; in 2008, heavy industry and chemical industry products combined accounted for 82.9% of total exports. Raw materials for agriculture and industry account for the bulk of Taiwan's imports; raw materials' share of total imports stood at 79.4% in 2008, with capital goods and consumer goods holding shares of just 13.6% and 7.0%, respectively. China (including Hong Kong) maintained its status as Taiwan's most important export market in 2008, taking 39.0% of all Taiwanese exports (0.8 percentage points lower than in 2007), followed by the U.S. with 12.0%. The main source of imports was Japan (19.3% of total imports), followed by China and Hong Kong (13.7%) (Table 1-3-3).

2. The Government's Efforts to Stimulate Exports to Key Markets

Besides the key export markets referred to above, the Ministry of Economic Affairs has been working actively to help Taiwanese companies develop overseas markets and globalize their operations. In addition to boosting exports to existing major markets, the Ministry has identified several key overseas markets that Taiwan should focus its efforts on. Taiwanese customs data indicate that, in 2008, exports to the 10 key markets in question (Japan, South Korea, Russia, Brazil, India, Vietnam, Indonesia, Malaysia, Spain and Turkey) grew by an average of 17.5%, significantly higher than Taiwan's overall export growth rate of 3.6%. Overseas markets for which the export growth rate exceeded 20% included: Brazil (64.4%), India (28.4), Indonesia (22.5%), and Spain (20.3%).

3. SME Export Sales

Despite the economic downturn caused by the global financial crisis in the second half of 2008, overall, Taiwan's foreign trade has continued to grow. A key issue here is the export sales performance of Taiwan's SMEs in 2008. As there are no official data on export sales based on enterprise size, for the purpose of this chapter the export sales figures from the Ministry of Finance Tax Data Center's business income tax collection data have been used to gain some idea of the export sales performance of Taiwan's SMEs in 2008.

Export sales by all Taiwanese business enterprises totaled NT\$9,476.2 billion in 2008, with large enterprises accounting for NT\$7,831.5 billion of this (82.64% of the total), while SMEs' share stood at NT\$1,644.7 billion (17.36% of the total). While total export sales for all enterprises grew by 15.0% in 2004, the growth rate fell to only 2.35% in 2005 and to just 1.17% in 2006. The situation improved dramatically in 2007, with an annual growth rate of 10.04%, but by the end of 2008 the financial crisis and the resulting global economic downturn had had a severe negative impact on world trade, and the annual growth rate in total export sales by all Taiwanese business enterprises in 2008 was negative, at -1.37% (Table 5-1-1).

Close examination of the export sales situation in 2008 shows that it is large enterprises that have seen the most pronounced decline in exports. The annual export sales growth rate for large enterprises in 2008 was -1.73%, whereas, despite the impact of the global economic downturn, SMEs managed to achieve positive growth in export sales, with an annual growth rate of 0.35%.

Table 5-1-1 Taiwanese Enterprises' Export Sales, 2003–2008

Units: NT\$ millions; %

Year	Total Exports	Exports by Large Enterprises	Exports by SMEs
Export sales (NT\$ millions)			
2003	7,332,742 (100)	6,004,906 (81.89)	1,327,836 (18.11)
2004	8,432,906 (100)	7,006,544 (83.09)	1,426,362 (16.91)
2005	8,630,921 (100)	7,112,098 (82.40)	1,518,823 (17.60)
2006	8,731,753 (100)	7,169,529 (82.11)	1,562,224 (17.89)
2007	9,608,324 (100)	7,969,397 (82.94)	1,638,927 (17.06)
2008	9,476,222 (100)	7,831,515 (82.64)	1,644,707 (17.36)
Annual growth rate (%)			
2004	15.00	16.68	7.42
2005	2.35	1.51	6.48
2006	1.17	0.81	2.86
2007	10.04	11.21	4.67
2008	-1.37	-1.73	0.35

Source: Ministry of Finance Tax Data Center, Business income tax collection data.

II Trends in Overseas Investment by SMEs

The ongoing trend towards economic globalization and the increase in trans-national capital flows have encouraged business enterprises to invest in locations with low production costs. For Taiwanese manufacturing firms, overseas investment has been an important strategy for boosting international competitiveness since the 1980s. China – which is geographically close to Taiwan, and offers low costs and a huge domestic market – currently accounts for the lion's share of Taiwan's overseas investment. However, the global financial crisis of 2008, which has caused many firms to resort to laying off employees and closing factories, has led to a pronounced contraction in the scale of overseas investment activity. This section

will examine the changes in Taiwan's overseas investment in 2008.

1. A Fall in Approved Overseas Investment

According to the statistics on approved overseas investment compiled by the Investment Commission, Ministry of Economic Affairs, the annual total of approved overseas investment (not including investment in China) peaked in 2001 at US\$4,392 million, after which it began to fall. However, in 2006 approved investment rose again, to US\$4,315 million, representing an increase of US\$1,868 million (76.32%) compared to 2005. In 2007, overseas investment rose further, to a record high of US\$6,470 million, 49.93% up on 2006. In 2008, the impact of the global financial crisis led to a dramatic decline in the scale of overseas investment, which fell by 30.96% (compared to 2007) to US\$4,466 million.

The year 2008 saw negative growth in investment in the U.S., Singapore, Thailand, Malaysia, and the Philippines. The most pronounced decline was in investment in Thailand, which fell by 98.69%; given the recent political turmoil in Thailand, Taiwanese investment in that country is expected to fall still further in 2009. There was a pronounced increase in investment in Vietnam and Indonesia (485.02% and 317.47%, respectively); investment in Europe also rose significantly compared to 2007 (Table 5-2-1).

Table 5-2-1 Approved Overseas Investment by Region, 2001–2008

Units: US\$ millions; %

Year	Total	USA	Japan	Hong Kong	Singapore	Thailand	Malaysia	Indonesia	Philippines	Vietnam	Europe	Other Regions
2001	4,392	1,093	169	95	378	16	46	6	46	31	46	2,403
2002	3,370	578	24	167	26	6	32	9	83	55	123	2,075
2003	3,969	467	100	641	26	49	50	13	2	157	77	2,322
2004	3,382	557	149	140	822	9	35	2	2	95	62	1,365
2005	2,447	315	43	108	98	20	28	9	15	94	299	1,334
2006	4,315	485	11	272	806	82	31	9	13	124	51	2,402
2007	6,470	1,346	19	190	1,194	712	65	1	13	109	19	2,803
2008	4,466	400	52	337	698	9	28	3	3	639	83	2,215
Annual Growth Rate	-30.96	-70.31	176.94	77.96	-41.58	-98.69	-57.23	317.47	-80.17	485.02	345.66	-20.95

Source: Investment Commission, Ministry of Economic Affairs, *Approved Overseas Investment Statistics*.

2. Approved Investment in China

Statistics on investment in China compiled by the Investment Commission, Ministry of Economic Affairs show that approved Taiwanese investment in China reached a historic high of US\$6,941 million in 2004 before falling off slightly in 2005, then rising again to US\$7,642 million in 2006 and US\$9,971 million in 2007; the 2007 total represented an annual growth rate of 30.46% compared to 2006. Despite the global economic downturn, in 2008 Taiwanese investment in China continued to increase, rising by 7.23% to US\$10,691 million. China has maintained its status as the most important investment location for

Taiwanese businesses.

The ten industries that account for the largest shares of Taiwanese investment in China are: electronic components manufacturing; computer, communications and audiovisual product manufacturing; electrical machinery and equipment manufacturing and repair; basic metals manufacturing; wholesaling and retailing; plastics manufacturing; machinery manufacturing; chemical materials manufacturing; information, communications and broadcasting; and metal products manufacturing. As can be seen from the above list, Taiwanese investment in China is heavily concentrated in the manufacturing sector, with wholesaling and retailing and information, communications and broadcasting being the only two non-manufacturing industries in the top ten. Investment in the information, communications and broadcasting industry grew particularly rapidly in 2008, rising by 114.49%. It would appear that there is significant potential for future growth in Taiwanese investment in the service sector in China; as Taiwan and China gradually open up their markets to one another, a new wave of growth in Taiwanese investment in the service sector in China can be anticipated. One important question that the authorities will need to keep an eye on is whether increased Taiwanese investment in China in response to market opening leads Taiwanese firms to cut back investment at home, or to reduce the scale of their operations in Taiwan.

Table 5-2-2 The Ten Industries with the Highest Levels of Approved Investment in China in 2008

Industry	Amount (US\$ millions)	Share of Total (%)	Annual Growth Rate (%)
Electronic components manufacturing industry	20,519	19.19	-15.43
Computer, communications and audiovisual electronics product manufacturing industry	17,833	16.68	5.62
Electrical machinery and equipment manufacturing and repair industry	10,659	9.97	1.80
Basic metals industry	7,280	6.81	40.58
Wholesaling and retailing industry	4,991	4.67	21.17
Plastics manufacturing industry	4,965	4.64	-14.94
Machinery manufacturing industry	4,736	4.43	-6.07
Chemical materials manufacturing industry	4,434	4.15	213.06
Information, communications and broadcasting industry	3,245	3.03	114.49
Metal products manufacturing industry	2,978	2.79	-3.76

Notes: 1. The "share of total" is the share of all approved investment in China (all industries) held by the industry in question.

2. The annual growth rate is the rate of increase in 2008 compared to 2007.

Source: Investment Commission, Ministry of Economic Affairs, *Approved Overseas Investment Statistics*.

Three industries – the electronic components manufacturing industry, the computer, communications and audiovisual electronics product manufacturing industry, and the electrical machinery and equipment manufacturing and repair industry – have consistently accounted for the largest share of Taiwanese investment in China (44.80% in 2006, 51.76% in 2007, and 45.84% in 2008). The slight decline in the share of total Taiwanese investment held by these three industries in 2008 was mainly due to a fall in investment in the electronic

components manufacturing industry, where investment fell by 15.43% compared to 2007. The chemical materials manufacturing industry has seen the most pronounced rise in investment in China over the past two years, with an annual growth rate in excess of 100% for two years in a row: 165.63% in 2007, and an even more impressive 213.06% in 2008 (Table 5-2-2).

III The Operational Status of the Overseas Operations of Taiwanese Business Enterprises

This section uses data from the *2008 Survey on Overseas Investment by Manufacturing Industry*, compiled by the Investment Commission, Ministry of Economic Affairs, to examine the situation with respect to those Taiwanese enterprises whose main overseas operation is located in China, while also giving an overview of the current status of Taiwanese firms' overseas operations in other parts of the world.

1. Characteristics of Manufacturing Firms Investing in China

Table 5-3-1 below is based on the original data from the *2008 Survey on Overseas Investment by Manufacturing Industry* (which was conducted in 2007). Business enterprises are classified as either large enterprises or SMEs; the table gives a general picture of the current status of Taiwanese enterprises that have invested overseas. SMEs are defined as those enterprises having less than 200 employees; large enterprises are defined as enterprises having 200 or more employees.

As can be seen from the table, in 2007 the large enterprises had average annual sales of US\$3,921.84 million; the SMEs had average annual sales of US\$241.48 million. The average number of employees for large enterprises (as of the end of 2007) was 2,457; for SMEs, the figure was 109. Large enterprises' average annual expenditure on the purchase of fixed assets and on R&D was 19.82 times and 10.54 times, respectively, that of SMEs.

The data presented in Table 5-3-1 presents only an overall picture of the status of the enterprises as a whole. We now need to look separately at the status of the Taiwanese parent companies and that of their overseas operations to gain a clearer picture of the allocation of resources in this regard. In 2007, for both large enterprises and SMEs, the Taiwan-based operations were the main source of revenue; on average, 80.78% of SMEs' total annual sales revenue was derived from the domestic operations, while for large enterprises the figure was 73.44%. As regards expenditure on R&D, in both large enterprises and SMEs this was heavily concentrated in the Taiwan parent company (on average, over 90% of total R&D spending).

Table 5-3-1 Taiwan Parent Companies of Enterprises Investing Overseas – Basic Data

Units: firms; US\$ millions; persons

	No. of Respondent Firms	Average Annual Sales	No. of Respondent Firms	Average Annual Expenditure on the Purchasing of Fixed Assets
Large Enterprises	446	3,921.84	427	312.19
SMEs	114	241.48	98	15.75
	No. of Respondent Firms	Average Annual Expenditure on R&D	No. of Respondent Firms	Average No. of Employees
Large Enterprises	399	58.47	432	2,457
SMEs	92	5.55	115	109

Source: Investment Commission, Ministry of Economic Affairs, 2008 Survey on Overseas Investment by Manufacturing Industry (original data) (survey conducted in 2007).

As regards expenditure on the purchase of fixed assets and the number of employees, there are significant disparities between large enterprises and SMEs. For large enterprises, the amount spent on the purchase of fixed assets in the overseas operations and the amount spent in Taiwan are similar, and the same is true with respect to the number of employees in the overseas operations and the number of employees in the Taiwan parent company. In these areas, the status of the overseas operations is already approaching that of the Taiwan parent company. SMEs, by contrast, are still concentrating their resources on their domestic operations; on average, the Taiwan parent company accounts for 84.01% of total expenditure on the purchase of fixed assets and for 79.19% of the overall number of employees (Table 5-3-2).

Table 5-3-2 Comparison of Taiwan Parent Companies and Their Overseas Operations

Units: %

		Distribution of Annual Sales Revenue	Distribution of Annual Expenditure on the Purchasing of Fixed Assets	Distribution of Annual Expenditure on R&D	Distribution of Employees
Large Enterprises	Taiwan parent company	73.44	57.47	91.49	52.93
	Overseas operations	26.56	42.53	8.51	47.07
SMEs	Taiwan parent company	80.78	84.01	97.23	79.19
	Overseas operations	19.22	15.99	2.77	20.81

Source: Investment Commission, Ministry of Economic Affairs, 2008 Survey on Overseas Investment by Manufacturing Industry (original data) (survey conducted in 2007).

2. Overseas Operations of Taiwanese Companies – Regions Invested in and Business Areas Invested in

(1) Main Regions Invested in

As can be seen from Table 5-3-3, Guangdong Province is the main location for the China operations of Taiwanese SMEs; 31% of the survey respondents had their main China-based operation in Guangdong. Shanghai was in second place, followed by Jiangsu Province. For

large enterprises, Jiangsu was the main location, followed by Guangdong and Shanghai. Shanghai, Guangdong and Jiangsu are thus the three main locations for the China operations of Taiwanese business enterprises investing in China. As regards overseas investment in countries other than China, the U.S. is the main location for both large enterprises and SMEs (25.94% of large enterprises and 37.21% of SMEs). Hong Kong and Macao are also important locations for overseas investment by SMEs.

Table 5-3-3 Regions Invested in by Taiwanese Business Enterprises Investing Overseas

Units: enterprises; %

Region	Percentage of Enterprises Investing in the Region	
	Large Enterprises	SMEs
No. of Enterprises Investing in China (no. of respondents)	514	100
Beijing	2.92	6.00
Shanghai	18.87	26.00
Guangdong	25.49	31.00
Fujian	4.09	2.00
Jiangsu	31.32	21.00
Zhejiang	4.67	4.00
Hubei, Hunan and Sichuan	3.89	2.00
Hebei, Henan and Shandong	3.11	6.00
Other regions	5.64	2.00
No. of Enterprises Investing in Regions Other than China (no. of respondents)	212	43
USA	25.94	37.21
Canada	0.00	0.00
Mexico and other Central and South American countries	6.13	9.30
Europe	11.79	4.65
Hong Kong and Macao	8.02	23.26
Japan and South Korea	7.08	4.65
Malaysia, Indonesia, the Philippines and India	11.79	4.65
Singapore	2.83	2.33
Thailand	8.49	6.98
Vietnam	12.26	6.98
Other Asian countries	2.36	0.00
New Zealand, Australia, and Africa	3.30	0.00

Source: Investment Commission, Ministry of Economic Affairs, 2008 Survey on Overseas Investment by Manufacturing Industry (original data) (survey conducted in 2007).

(2) Main Business Areas Invested in

The business areas invested in by Taiwanese enterprises investing overseas vary depending on the geographical region invested in.

a. China

Of the respondent firms that had invested in China, 84.45% of large enterprises and 63.75% of SMEs reported that manufacturing was their main business area; only 14.8% of large enterprises and 32.98% of SMEs had invested in the service sector. Broadly speaking, therefore, Taiwanese investment in China is still heavily concentrated in manufacturing industry. For large enterprises, the main industries invested in were electronics component

manufacturing (27.30% of large enterprises) and computer, electronics and optical products manufacturing (18.62%); the combined total for these two industries was 45.92% of large enterprises. For SMEs, electronics component manufacturing (23.08%) and computer, electronics and optical products manufacturing (12.09%) were also the main industries invested in. Over the past few years, the Chinese government has been employing a number of policy tools to support the growth of the hi-tech sector; this is a key reason why China has remained an important production location for Taiwanese companies, particularly those in the hi-tech sector (Table 5-3-4).

Table 5-3-4 Business Areas Invested in by Taiwanese Enterprises Investing Overseas

Units: enterprises; %

Industry	Percentage of Enterprises Investing in China that Have Invested in this Business Area		Percentage of Enterprises Investing in Other Overseas Regions that Have Invested in this Business Area	
	Large Enterprises	SMEs	Large Enterprises	SMEs
Total sample size (no. of respondent firms)	392	91	166	39
Agriculture, forestry, fisheries, animal husbandry and mining	0.26	2.20	1.20	0.00
Food, beverage and tobacco products manufacturing	2.81	1.10	1.20	0.00
Textiles, garments and leather goods	2.30	2.20	4.82	0.00
Wood, bamboo and paper products manufacturing, and printing	1.53	0.00	0.60	0.00
Petroleum, chemical materials and chemical products	5.10	3.30	3.61	5.13
Pharmaceuticals manufacturing	0.00	0.00	0.00	0.00
Rubber and plastic products manufacturing	4.85	5.49	4.22	5.13
Non-metal mineral products	1.79	2.20	1.20	0.00
Basic metals and metal products manufacturing	5.61	4.40	4.22	0.00
Electronics components manufacturing	27.30	23.08	12.05	12.82
Computer, electronics and optical products manufacturing	18.62	12.09	16.27	17.95
Electrical equipment and machinery manufacturing	5.87	5.49	3.61	0.00
Transportation vehicle manufacturing	5.61	1.10	6.63	0.00
Other manufacturing industries	3.06	3.30	3.01	0.00
Non-manufacturing industries	0.51	1.10	0.00	0.00
Wholesaling and retailing	5.10	10.99	15.06	28.21
Transportation and warehousing, and hotel and restaurant operation	1.53	1.10	1.20	0.00
Information, communications and broadcasting	0.77	4.40	1.20	0.00
Professional, scientific and technical services	1.02	4.40	1.20	5.13
Support services	0.77	4.40	1.20	5.13
Other service industries	5.61	7.69	17.47	20.51

Source: Investment Commission, Ministry of Economic Affairs, *2008 Survey on Overseas Investment by Manufacturing Industry* (original data) (survey conducted in 2007).

As regards investment in the service sector, Taiwanese companies in service industries have found it difficult to develop the Chinese market, possibly because of the gross disparities in income level that characterize this market. Taiwanese investment in the service sector has consequently tended to be concentrated in the wholesaling and retailing industry, which is closely linked with people's everyday lives. As can be seen from Table 5-3-4,

wholesaling and retailing was the main business area for 10.99% of the respondent SMEs, a figure exceeded only by the electronic components manufacturing industry and the computer, electronics and optical products manufacturing industry.

b. Other Overseas Regions

With regard to overseas investment in regions other than China, for both large enterprises and SMEs the main business areas are the electronics components manufacturing industry and the computer, electronics and optical products manufacturing industry. Investment in the service sector is heavily concentrated in wholesaling and retailing (15.06% of large enterprises and 28.21% of SMEs). Willingness to invest in the service sector appears to be higher in other overseas regions than it is with respect to China; service industries are the main business area for 37.33% of large enterprises investing in other overseas regions, and for 58.98% of SMEs; these figures are noticeably higher than the corresponding percentages for China (14.8% and 32.98%, respectively). The main reason for this situation may be that the service sector can only develop successfully in countries that have attained a high level of economic and social maturity. Other overseas regions such as the U.S., Hong Kong and Macao, Europe and Japan all possess environments conducive to service sector development, hence the higher percentage of Taiwanese firms investing in the service sector in these regions as compared to China.

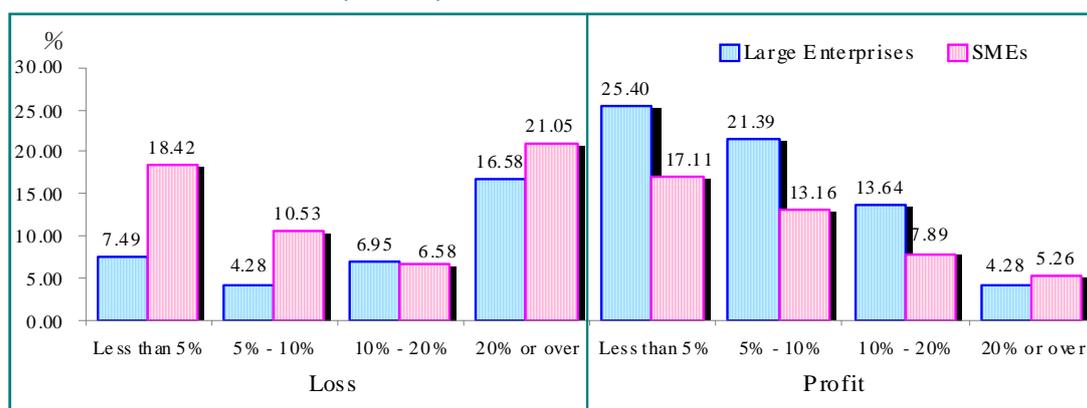
3. Profitability of Overseas Operations

As regards the earnings performance of Taiwanese companies investing overseas in 2007, of those Taiwanese firms investing in China, 64.71% of large enterprises made a profit and 35.29% made a loss, whereas only 43.42% of SMEs made a profit, against 56.58% that made a loss. 21.05% of SMEs had a profit margin of -20% or lower, and of those that made a profit, most posted a profit margin of between 0% and 5% or between 5% and 10%. SMEs are thus far more likely to have low profit margins if they do make a profit, or to make heavy losses if they make a loss (Figure 5-3-1).

Of those Taiwanese firms investing in overseas regions other than China, 67.19% of large enterprises made a profit and 32.81% made a loss. 50% of SMEs made a profit (with 30.56% posting a profit margin of less than 5%), and 50% made a loss (with 25% posting a profit margin of -20% or less) (Figure 5-3-2).

Overall, whether investing in China or elsewhere, more than 60% of large enterprises made a profit. Among SMEs, the share of firms making a loss exceeded those making a profit; furthermore, those SMEs that did make a profit generally had low profit margins, while those that posted a loss often suffered a serious loss.

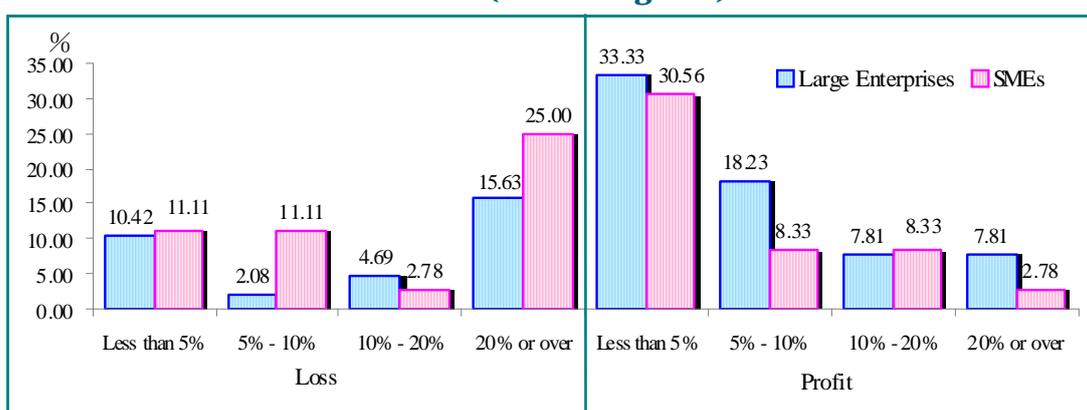
Figure 5-3-1 Profit or Loss of Taiwanese Enterprises Investing Overseas in 2007 (China)



Note: Total sample sizes were 374 large enterprises and 76 SMEs.

Source: Investment Commission, Ministry of Economic Affairs, *2008 Survey on Overseas Investment by Manufacturing Industry* (original data) (survey conducted in 2007).

Figure 5-3-2 Profit or Loss of Taiwanese Enterprises Investing Overseas in 2007 (Other Regions)



Note: Total sample sizes were 192 large enterprises and 36 SMEs.

Source: Investment Commission, Ministry of Economic Affairs, *2008 Survey on Overseas Investment by Manufacturing Industry* (original data) (survey conducted in 2007).

IV The Impact of Changes in the Global Economic Environment on Business Enterprises in Taiwan

Over the past year, although Taiwan has experienced the effects of the global financial crisis, it has also achieved significant breakthroughs with respect to the negotiation of free trade agreements. At the same time, China began to implement several important new economic measures in 2007; the implementation of these new laws and policies has had a pronounced impact on Taiwanese business enterprises.

1. The Impact of the Global Financial Crisis

(1) A Contraction in Exports and a Dramatic Fall in the Number of New Orders Received

The financial crisis that began in the second half of 2008 has since spread rapidly around the globe. In the fourth quarter of 2008, the U.S., the Euro zone and Japan all experienced a fall in both imports and exports, as did South Korea, Singapore and Taiwan. Starting in September 2008, Taiwan's exports fell for four months in a row, from US\$25,209 million in August 2008 to US\$13,633 million in December (a decline of 45.92%); the December 2008 total represented a year-on-year decrease of 41.93% compared to December 2007. At the same time, the global financial crisis has had a damaging effect on consumer confidence in overseas markets, leading to a reduction in the number of new orders received. The value of export orders received in December 2008 was US\$20.79 billion, representing a year-on-year decline of US\$2.01 billion (33.00%) compared to December 2007.

(2) Slower Growth in Overseas Demand Accompanied by Negative Growth in Domestic Demand

The global financial crisis has led to a fall in industrial production and a rise in unemployment. To keep going during the crisis, many business enterprises have had to resort to layoffs, or to forcing employees to take unpaid leave, so as to reduce their personnel costs. Consumer confidence has fallen, resulting in reduced domestic demand, and taking 0.16 percentage points off Taiwan's economic growth rate in 2008. Although the government has kept working to stimulate domestic demand, the uncertain economic outlook has led to a widespread reluctance to invest; the fall in gross fixed capital formation took another 1.98 percentage points off the economic growth rate; low net exports due to weak overseas demand were responsible for another 2.10 percentage points. Given the combination of depressed overseas demand and falling domestic demand, it can be anticipated that Taiwan will post a pronounced negative economic growth rate in 2009.

As a result of the rapid contraction in demand, Taiwan experienced a fall in both imports from and exports to the U.S., the Euro zone and Japan in the fourth quarter of 2008; the same was true of imports from and exports to South Korea and Singapore. The IMF is forecasting that the volume of global trade will fall by 2.8% in 2009, making this the first year of negative growth since 1982. The dramatic contraction in global trade is linked to the evolution of global supply chains. In the last few years, the developing nations have begun to participate actively in global production networks. This process of economic globalization has been accompanied by regional economic integration, further enhancing the linkages between individual economies and the global economy as a whole. It was thus inevitable that the Taiwanese business enterprises would feel the effects of the global financial crisis,

especially as Taiwan is heavily dependent on foreign trade.

(3) A Rise in Protectionist Sentiment

Besides causing a contraction in the volume of world trade and contributing to higher unemployment, the global financial crisis has also led many countries to adopt protectionist measures. Some of the examples are as follows: In late January 2009, the U.S. Customs began to implement the Interim Final Rule for Importer Security Filing; the European Union has begun to insist that all textile imports have uniform labeling; Indonesia has announced that, during the next two years, all imports of garments, shoes, electronics products, children's toys and food and beverage products must go through a registered and approved importer, and must undergo customs clearance at either an international airport or one of five specified ports: Jakarta, Semarang, Surabaya, Medan, or Kota Makassar; the Brazilian government is introducing a new permit system for 24 product categories, including toys, shoes, garments and cameras; in 2009, Turkey has raised the import duty on rolled steel plate by 8 percentage points.

If this wave of protectionism continues to spread, it will inevitably have a pronounced negative impact on Taiwan's exports. It seems certain that both Taiwanese companies operating in Taiwan and those investing overseas will experience the effects of trade barriers over the next few years.

2. Free Trade Agreements

(1) Taiwan Secures Membership of the WTO's Agreement on Government Procurement (GPA)

In the past, even the most competitive Taiwanese enterprises had to sit by and watch as lucrative foreign government procurement contracts went to firms from other countries; there was simply no opportunity for Taiwanese companies to participate in this market segment. However, in December 2008 Taiwan secured formal membership of the WTO's Agreement on Government Procurement (GPA), enabling Taiwanese firms to compete on a level playing field with foreign companies when seeking to secure government purchasing business overseas.

According to statistics compiled by the Public Construction Commission, Executive Yuan, the opening up of the governing procurement market by the GPA signatory nations (which include the U.S., the European Union, Japan, Canada, Hong Kong and Singapore) will give Taiwanese enterprises access to business opportunities totaling around US\$390 billion (approximately NT\$12 trillion) a year; this figure is roughly 12 times the total annual procurement value of all government agencies in Taiwan. Taiwanese companies will now be

looking forward to being able to start participating in overseas government purchasing markets within the next six months.

One point worth noting is that, in order to keep the negative impact of GPA membership on domestic companies to a minimum, only national procurement contracts and those placed by Taipei City Government and Kaohsiung City Government will fall within the scope of the GPA's requirements; government purchasing by other county and city governments will not be affected, so Taiwanese SMEs will still have significant opportunities to participate in government procurement business within Taiwan. The government has formulated a number of measures to help SMEs secure government procurement business opportunities. For example, Article 97 of the Government Procurement Law stipulates that the regulatory authorities may adopt suitable measures, in accordance with the requirements of the law, to help SMEs secure a specified percentage of government purchasing contracts, either as contractors or sub-contractors. In line with this provision, the Public Construction Commission set a target of 30% of the value of government procurement contracts to go to SMEs (as either contractors or sub-contractors) in fiscal 2008. According to Public Construction Commission statistics, the share of government purchasing opportunities that went to SMEs in fiscal 2008 was actually 61% (representing a total of NT\$772.9 billion); this figure confirms that SMEs are capable of participating effectively in the government procurement market in Taiwan.

(2) The Ongoing Negotiations for an Economic Collaboration Agreement with China

Over the past few years, the economic interaction between Taiwan and China has grown steadily, and China has become the main focus of Taiwan's overseas investment (and Taiwanese firms' main overseas production location). There is thus a clear need for a formal economic collaboration agreement that will protect the rights of Taiwanese companies operating in China.

Due to the slow progress in bilateral trade negotiations under the WTO framework, since the 1990s many countries have begun to focus more on regional economic integration. This has resulted in a situation where the transaction costs applying to trade between the members of regional trade blocs have fallen, but other countries that have been excluded from these groupings have suffered due to increased (relative) transaction costs and reduced market scope.

Taiwan, which has always been heavily dependent on exports, may find itself in a difficult position in the future. Due to political factors, Taiwan has as yet been unable to secure a bilateral free trade agreement with any country in Asia, Europe or North America, which between them receive 88.7% of Taiwan's exports. Currently, only five countries –

Panama, Guatemala, Nicaragua, El Salvador and Honduras – have signed bilateral free trade agreements with Taiwan. Between them, these five markets account for only 0.187% of Taiwan's exports, so the signing of these free trade agreements has had only very limited benefits for Taiwan.

A free trade agreement signed between China and the ten ASEAN member nations has already come into effect. Starting from 2010, the import tariff applying to trade in most products between China and ASEAN will be reduced to zero; the competitiveness of Taiwanese products (which will remain liable to import duty) in these markets will suffer as a result. This problem could be solved by the signing of an economic collaboration agreement with China.

3. The Impact of the Chinese Government's New Economic and Trade Policies

Over the last few years, the Chinese economy has been growing at a very rapid pace, leading the Chinese government to implement a number of reforms to prevent the economy from overheating. Starting in 2007, there has been a steady stream of new legislation, including the Enterprise Income Tax Law and Labor Contracts Law, as well as a reduction of the tax drawback rate for exportation, and an adjustment of the government's policy regarding processing trade and of the official list of industries in which foreign investment is encouraged. These new policies have had a major impact on the overall economic environment in China, an impact which has also been felt directly by Taiwanese firms that have invested in China. To gain a more in-depth understanding of the effects of China's new economic policy measures on Taiwanese business enterprises, this chapter makes use of the results obtained in the *Survey of the Impact of China's New Economic and Trade Policies*, conducted by the Chinese National Federation of Industries on behalf of the Investment Commission, Ministry of Economic Affairs. The *Survey* was conducted using a questionnaire survey administered to 367 firms, and in-depth interviews with representatives of 52 firms.

(1) The Impact of the New Measures on the Operations of Taiwanese Companies in China

a. The Labor Contracts Law Has Had the Greatest Impact on Taiwanese Firms Operating in China

The survey results show that the Labor Contracts Law, the revaluation of the Yuan, and the reduction in the tax drawback rate for exportation are the measures that have had the biggest impact on Taiwanese companies operating in China. The impact of the Labor Contracts Law

has been especially pronounced. An article in the September 2007 issue of the Straits Exchange Foundation periodical *Straits Business Monthly* notes that, while helping to protect the rights of Chinese workers, from the point of view of Taiwanese companies operating in China the Labor Contracts Law has reduced their ability to use labor flexibly, and has led to increased operational risk and higher managerial costs; the article goes on to note that the effects of the new law have been felt more severely by SMEs than by large enterprises and conglomerates. The survey results indicate that the introduction of the Labor Contracts Law has reduced the profitability of Taiwanese-invested businesses in China by over 10%, and led to a 15% increase in costs.

In mid-July 2005, the Chinese government announced that the Yuan, which had previously been pegged to the U.S. Dollar, would in future be pegged to a basket of currencies. Following the implementation of this change, the Yuan rose steadily against the Dollar. However, since the global financial crisis began in the second half of 2008, the Chinese government has made efforts to rein in the revaluation of the Yuan, and has even taken steps to devalue it, so as to stimulate export growth.

As regards the tax drawback for exportation, starting on July 1, 2007 the Chinese government revised the tax drawback rate for certain product categories downwards. In all, some 2,831 products were affected, accounting for roughly 37% of all product types recognized by the Chinese Customs authorities. For some products, the tax drawback rate has been reduced to zero.

In the first half of 2008, the combined effects of a weakening of demand in international markets, the revaluation of the Yuan, and rising raw materials and labor costs, led to a pronounced slowing of China's export growth. In the first 9 months of 2008, there were 8 months in which China's exports grew more slowly than in the same month in 2007. The widening impact of the financial crisis that began in the U.S. will inevitably have affected China's exports, too. It became clear that an increase in the tax drawback rate would help to reduce exporters' costs and boost their earnings from exports, thereby helping to ensure that falling exports do not slow China's economic development. In late October 2008, China's Ministry of Finance and State Administration of Taxation announced that, as of November 1, 2008, the tax drawback rate would be raised for 3,486 products (representing around 25.8% of all product categories). Shortly before, on August 1, 2008, the tax drawback rate applying to certain categories of textile and garment products had already been raised from 11% to 13%; this was now increased still further to 14%, as was the rate applying to certain categories of toys.

b. The Impact on Taiwanese Companies of the New List of Industries in Which Foreign Investment Is Encouraged and the New Enterprise Income Tax Law Has Been Limited

Following the introduction of the new Foreign Investment Industrial Guidance Catalogue, some foreign companies that had previously been able to benefit from investment incentives are no longer able to do so. Taiwanese companies that do not conform to the new requirements will be required to pay value-added tax at 17% when importing machinery and equipment from overseas; adding to this import duty at around 8 – 10%, it would appear that the introduction of the new Catalogue could potentially have a significant impact on the cost of investment and on the competitiveness of Taiwanese firms investing in China.

However, it can be seen from the survey results that 88.5% of the 52 Taiwanese firms that were interviewed for the survey reported that the introduction of the new Catalogue had had “no impact whatsoever” on their operations. This is because those Taiwanese firms that have been active in China for some time were able to import all the production equipment they needed before the new Catalogue came into effect.

During the past ten years or so, domestic and foreign-invested firms in China have been subject to different tax rates. Following the passage into law of the new Enterprise Income Tax Law, in the future all companies, whether domestic or foreign-invested, will pay Enterprise Income Tax at a uniform rate of 25%. In addition, whereas in the past the China-based subsidiaries of Taiwanese companies could remit dividends and interest, etc. overseas without having to pay tax on them, in the future such remittances will be taxed at a rate of 10%. The new law would thus appear to imply a significant increase in the tax burden that Taiwanese enterprises operating in China must bear. However, the survey interviews show that in fact the perceived impact has not been that serious. Many companies have been struggling even to stay in business, and for those firms that have been making a loss or only a very small profit, the burden imposed by the Enterprise Income Tax Law is limited, particularly as there are various strategies that can be employed to minimize the tax liability. Overall, the negative impact of the Enterprise Income Tax Law on Taiwanese business enterprises has been limited.

It appears from the questionnaire survey and in-depth interviews that the new economic measures adopted by the Chinese government have reduced the profit margins of Taiwanese firms operating in China by a little over 10%, and increased their costs by more than 15%. In the in-depth interviews, 42.3% of firms reported that the impact of the new measures in 2008 had been limited, mainly because the companies had already secured most of their orders before the new measures came into effect; it may be that the impact of the new measures will

start to be felt more keenly from 2009 on.

(2) The Impact of the New Measures on Taiwanese Investment in China

a. Very Few Taiwanese Firms Have Been Asked to Relocate Their China-based Operations by Local Government Authorities

One of the objectives behind the implementation of China's new economic and trade policies was to encourage Taiwanese-invested firms to upgrade and transform themselves, thereby bringing the development of energy-intensive, high-polluting, resource-intensive industries under control. As the disparity in economic development between China's coastal regions and Taiwan has narrowed, the government authorities in China have become more selective about what types of overseas investment they are seeking to encourage. Following the enactment of the new Enterprise Income Tax Law, the rate of income tax that Taiwanese enterprises must pay has been raised from 15% to 25%, while the special tax breaks that Taiwanese firms investing in China used to be granted (providing a two-year tax exemption, after which the enterprise paid tax at half the usual rate for a further three years) have been abolished. To be able to benefit from the special 15% tax rate, Taiwanese firms were already required to obtain "hi-tech enterprise certification," "export-oriented enterprise certification" and "advanced technology enterprise certification," or else locate themselves in an Economic and Technological Development Zone, Export Processing Zone or Bonded Manufacturing Zone. Now, following the coming into effect of the Enterprise Income Tax Law, hi-tech enterprises must undergo re-certification to be able to continue to benefit from the 15% tax rate, and judging from the provisions of the new *Management Policy of Hi-tech Enterprise License*, the vast majority of Taiwanese firms operating in China will now find it very difficult to secure hi-tech enterprise status, and so will have to pay tax at the higher rate.

Does this mean that Taiwanese enterprises operating in China will be asked to relocate their factories by local government authorities? Based on the questionnaire survey and the in-depth interviews, 67.4% and 65.8% of Taiwanese enterprises, respectively, did not believe that this was going to happen; only a limited number of Taiwanese firms had been asked to relocate their production facilities, either because of urban development projects or because the firm in question was in a high-polluting industry. The in-depth interviews revealed that local governments in China are reluctant to ask Taiwanese firms to move their factories elsewhere in case this has a negative impact on local economic development.

b. Respondents Anticipated that the Percentage of Taiwanese Firms That Either Close Down Their China-based Operations or Relocate Them Elsewhere Will Rise

50.1% of the interviewees anticipated that the new economic policies adopted by the Chinese

government would cause around 20% of the Taiwanese firms operating in China to either close down their production facilities or relocate them to another country; another 40.2% put the figure at around 15%. 29% of the survey respondents believed 20 or less of the Taiwanese firms operating in the same region as them in China would either close down or relocate their factory; 15.7% believed that 50 – 100 firms would do so, and 13.5% anticipated that 20 – 50 firms would do so.

c. Taiwanese Firms Operating in China Are Reluctant to Relocate Their Operations to the Interior of China

The results obtained in the interviews indicated that less than 1% of Taiwanese firms were willing to relocate their operations away from the coastal regions into the interior of China. The general feeling was that, at present, it is hard enough simply staying in business, let alone trying to invest in the interior. Respondents noted that most of the Taiwanese SMEs that have invested in the interior in the past subsequently abandoned these ventures.

d. Taiwanese Firms Operating in China Are Reluctant to Relocate to Other Countries

It is clear that the overall investment environment in China is much less attractive than it used to be. Given these changed circumstances, are Taiwanese firms thinking about relocating their China-based operations to other countries? The interview results revealed that 40% of firms had considered relocating to another country; for 80% of these firms, the country that they had considered investing in was Vietnam. However, only 1% of interviewees had actually made a move to relocate their operations outside China. The main reasons given by other firms for not having relocated to Vietnam yet were concerns about the language barrier, and worries about the problems of inflation and industrial disputes in Vietnam.

e. Taiwanese Firms' Strategy for Investment in China in the Future

Faced with the new economic policies that the Chinese government has adopted, 32% of Taiwanese firms reported that they would not be undertaking any further investment in China in the near future. Some 28% said that they would be expanding their scale of operations in their core business area, and another 24% said that they would simply continue with operations in their core business area. Taiwanese electronics manufacturers in eastern China have been relatively unaffected by the new measures, and so were more enthusiastic about the idea of continuing to expand their scale of operations. By contrast, firms in traditional industries in southern China were more likely to have no plans for further investment of any kind; at most, they merely intended to carry on with their existing operations.

Chapter 6

SME R&D and Innovation

With the rapid pace of change in information technology and in the business environment, combined with the impact of globalization on competition, business enterprises are faced with the challenges of creating value from knowledge and making effective use of information technology. Those enterprises that remain wedded to outmoded business models will rapidly find themselves being swept away by the tide of change.

The chapter focuses on the use of technology, R&D and innovation by Taiwan's SMEs over the past few years. It aims to give a clearer picture of SMEs' technology utilization and innovation activities in the new era of the knowledge economy, while also presenting an overview of related government SME guidance programs, the results that these have achieved, and case studies of successful program implementation. The final section of this chapter offers some suggestions for SMEs.

I SMEs' R&D Inputs

R&D spending is taken as the main indicator for examining SMEs' R&D inputs. The following sections examine R&D spending at the national level, in individual sectors, and in manufacturing industry. In addition, to gain a clearer understanding of the R&D inputs of the overseas operations of Taiwanese companies, this chapter makes use of data from the *2008 Survey of the Operational Status of Taiwanese-invested Businesses Overseas* undertaken by the Investment Commission, Ministry of Economic Affairs, with the aim of providing a more comprehensive picture of the R&D inputs of Taiwanese enterprises.

1. R&D Expenditure

(1) National R&D Expenditure

According to the data presented in the 2008 edition of the National Science Council's *Indicators of Science and Technology*, total R&D spending in Taiwan in 2007 amounted to NT\$331,386 million, representing an annual growth rate of 7.93% compared to 2006. 68.8% of this R&D spending was in the private sector, 29.9% was in the public sector (i.e., government agencies), and only 1.3% was in the university sector, the non-profit sector or the Taiwan operations of foreign companies. The private sector thus accounts for by far the largest share of R&D expenditure in Taiwan.

(2) Private Sector R&D Expenditure

Within the private sector, the manufacturing sector accounts for the largest share of R&D expenditure. Using the definition of “manufacturing firms” specified by the 8th Revision of the R.O.C. Standard Industry Classification, total annual R&D expenditure in the manufacturing sector is approximately NT\$212,922 million, representing 92.93% of all private-sector R&D expenditure. The share held by the service sector is just 6.62%, while all other industries combined account for only 0.45% of the total. As a rule, manufacturing firms (and particularly those in hi-tech industries) have more need to undertake R&D than service sector companies, which is why R&D expenditure in the manufacturing sector is so much higher than that in other sectors.

Over the last few years, there has been a pronounced increase in the private sector’s share of total national R&D expenditure. Annual R&D spending in the private sector rose from NT\$153,664 million in 2002 to NT\$228,074 million in 2007. The private sector’s share of total national R&D expenditure increased from 63.3% in 2002 to 68.8% in 2007; in the period since 2002, the private sector is the only sector where R&D spending has increased. In the era of the knowledge economy, more and more enterprises are coming to realize the importance of innovation and R&D as a means of overcoming obstacles to further growth and development, strengthening brand image and building core competitiveness. As noted in Chapter 5, Singtex Industrial Co., Ltd., which was the only textile manufacturer to win a Taiwan Excellence Award in 2007, has successfully developed a niche as a manufacturer of functional textiles, which are marketed under the company’s “Singtex” brand; in 2005, Singtex was the subject of an article by Time magazine. Singtex is just one of a growing number of Taiwanese companies that are starting to focus heavily on innovation and R&D, leading to a steady increase in the annual expenditure on R&D of Taiwan’s corporate sector.

Table 6-1-1 Private Sector R&D Expenditure by Enterprise Size, 2004–2007

Unit: NT\$ millions

Item	2004	2005	2006	2007
Total	170,293	188,390	207,237	229,126
SME Sub-total	29,251	29,143	33,159	37,437
0-99 employees	15,024	16,048	17,803	19,140
100-199 employees	14,497	13,095	15,356	18,297
Large Enterprises Sub-total	140,772	159,247	174,078	191,690
200 – 499 employees	24,768	24,017	27,417	31,614
500 or more employees	116,004	135,230	146,661	160,076

Source: National Science Council, Executive Yuan, 2008.

Total R&D expenditure by SMEs (defined as enterprises with fewer than 200 employees) has risen for two years in a row, with a growth rate of 13.78% in 2005 – 2006 followed by a growth rate of 12.90% in 2006 – 2007. The R&D expenditure growth rate for

large enterprises in 2006 – 2007 was 10.12%, lower than that posted by SMEs. It appears that, with the growth of the knowledge economy, Taiwan's SMEs are gradually starting to attach more importance to R&D. Overall, private sector R&D spending continued to grow steadily in 2007 (Table 6-1-1).

(3) R&D Expenditure by Taiwanese Enterprises' Overseas Operations

Table 6-1-2 is based on the original data from the *2008 Survey of the Operational Status of Taiwanese-invested Businesses Operating Overseas* undertaken by the Investment Commission, Ministry of Economic Affairs. The survey distinguishes between large enterprises and SMEs, and can be used to gain a broad understanding of the R&D inputs of the overseas operations of Taiwanese business enterprises. For these purposes, SMEs are defined as enterprises with fewer than 200 employees.

It can be seen from the data presented in this table, that in 2007 the average annual R&D expenditure of large enterprises operating overseas was US\$58,470,000, while that of SMEs was US\$5,550,000; average spending on R&D by large enterprises was thus 10.54 times that of SMEs. On the other hand, if R&D expenditure is expressed as a share of annual sales revenue, this percentage is higher for SMEs than for large enterprises (1.85% compared to 1.33% in 2007), suggesting a greater enthusiasm for investment in R&D among SMEs.

Table 6-1-2 R&D Expenditure by the Parent Companies of Taiwanese-invested Enterprises Operating Overseas

Units: enterprises; US\$ millions; %

Enterprise Size	No. of Respondents	Average Annual Sales Revenue	No. of Respondents	Average Annual R&D Expenditure	Average Annual R&D Expenditure as a % of Annual Sales Revenue
Large Enterprises	446	3,921.84	399	58.47	1.33
SMEs	114	241.48	92	5.55	1.85

Source: Investment Commission, Ministry of Economic Affairs, *2008 Survey of the Operational Status of Taiwanese-invested Businesses Overseas* (original data; survey conducted in 2007)

Table 6-1-3 Domestic Operations' and Overseas Operations' Shares of the Total R&D Expenditure of Taiwanese Companies Investing Overseas

Units: %

		Share of Total Annual Sales Revenue	Share of Total Annual R&D Expenditure
Large Enterprises	Taiwan-based operations	73.44	91.49
	Overseas operations	26.56	8.51
SMEs	Taiwan-based operations	80.78	97.23
	Overseas operations	19.22	2.77

Source: Investment Commission, Ministry of Economic Affairs, *2008 Survey of the Operational Status of Taiwanese-invested Businesses Overseas* (original data; survey conducted in 2007)

The data in the table above shows only the R&D expenditure for the Taiwanese parent companies of overseas operations. This data must now be broken down to show R&D

spending by Taiwan-based and overseas-based operations, to explore R&D spending by overseas operations. In 2007, Taiwan-based operations accounted for 91.49% of the total R&D expenditure of large enterprises, while the figure for SMEs was even higher, at 97.23%. These data show that Taiwanese enterprises that have invested overseas continue to position their overseas operations mainly as manufacturing facilities, while keeping R&D in Taiwan (Table 6-1-3).

2. Major Sources of Technology and Know-how for the Overseas Operations of Taiwanese Enterprises

An examination of the main sources of technology and know-how can shed light on the extent to which Taiwanese companies investing overseas have “localized” their R&D operations.

The table shows the main sources of technology and know-how for large enterprises and SMEs investing in China, and those investing in other regions overseas.

- (1) China: For large enterprises, the parent company in Taiwan is the main source of technology and know-how (59.50% of enterprises), followed by R&D conducted locally by the company itself (19.83%). The corresponding percentages for SMEs are 58.88% and 15.89%, respectively. One point worth noting is that for 10.28% of SMEs the main source of technology and know-how was a research institution in Taiwan.
- (2) Other overseas regions: For both large enterprises and SMEs, the main sources of technology and know-how for Taiwanese enterprises investing in overseas regions other than China were the parent company in Taiwan (60.47% of large enterprises and 68.09% of SMEs) and R&D undertaken locally by the company itself (19.76% of large enterprises and 10.64% of SMEs).

Table 6-1-4 Main Sources of Technology and Know-how for the Overseas Operations of Taiwanese Enterprises

Region and Enterprise Size	China		Other Overseas Regions	
	Large Enterprises	SMEs	Large Enterprises	SMEs
R&D undertaken locally by the enterprise itself	19.83	15.89	19.76	10.64
Technology purchased locally	1.01	2.80	2.77	2.13
Technology provided by local joint venture partner	1.51	0.93	1.19	0.00
Parent company in Taiwan	59.50	58.88	60.47	68.09
Taiwanese research institute	6.39	10.28	2.77	8.51
Local research institute	1.51	3.74	1.98	4.26
Technology transfer from Taiwan (OEM/ODM)	5.21	4.67	2.77	0.00
Technology transfer from local company (OEM/ODM)	1.18	0.00	1.98	0.00
Technology licensed from a company in a third country	2.35	1.87	1.19	2.13
Other	1.51	0.93	5.14	4.26

Notes: 1. The total number of enterprises investing in China was 402 large enterprises and 75 SMEs.

2. The total number of enterprises investing in other regions was 90 large enterprises and 36 SMEs.

Source: Investment Commission, Ministry of Economic Affairs, 2008 *Survey of the Operational Status of Taiwanese-invested Businesses Overseas* (original data; survey conducted in 2007).

It can be seen from the above analysis that, for both large enterprises and SMEs, and regardless of the region in which they are located, the Taiwanese parent company is the main source of technology and know-how for the overseas operations of Taiwanese business enterprises. This share is significantly higher than that held by the next most important source of technology and know-how – R&D conducted locally by the enterprise in question. In most cases, therefore, it is the Taiwan parent company that helps to maintain the technological edge enjoyed by the overseas operations of Taiwanese business enterprises; it is for this reason that Taiwanese firms have been able to remain competitive despite the impact of economic globalization.

II Strengthening the R&D Capabilities of Taiwanese Business Enterprises

The Taiwanese government provides a range of innovation and R&D guidance measures and funding programs, which are intended to encourage SMEs to invest more in innovation and R&D, thereby enhancing their international competitiveness. The following sections outline these innovation and R&D guidance programs.

1. The Industrial Technology Development Program (ITDP)

(1) Program Content

The Ministry of Economic Affairs (MOEA) formulated the Industrial Technology Development Program (ITDP) in accordance with the *Regulations Governing Subsidies for the Promotion of Corporate Research and Development*, with the aim of encouraging business enterprises to undertake innovation and applied research, and to build up their R&D capabilities and systems. Since 1999, business enterprises have been able to apply for government funding for ITDP plans. By providing part of the funding for these plans, the government helps to reduce the cost of innovation and R&D, and the level of risk that the enterprises involved must bear. The ITDP encourages enterprises to develop cutting-edge technology, key technologies that are needed for industry development, and integrated technologies. Enterprises that undertake ITDP plans are able to keep the results of the R&D work. When companies apply for ITDP plan funding, the government is able to provide them with guidance to help strengthen their R&D management systems, cultivate and ensure effective utilization of R&D talent, and promote collaboration and exchange between industry, universities and research institutes.

(2) Results Achieved

Since implementation of the ITDP began in February 1999, a very large number of enterprises have applied for IDTP plan funding. As of 2008, a cumulative total of 1,033 plan applications had been submitted, of which 497 were approved. A total of 809 enterprises participated in these plans, of which 328 were SMEs (Table 6-2-1).

The range of technologies covered by ITDP plans includes information technology (including communications technology and optoelectronics), machinery and aerospace technology, materials technology, chemical engineering technology, biotech and pharmaceuticals, etc. (Figure 6-2-1).

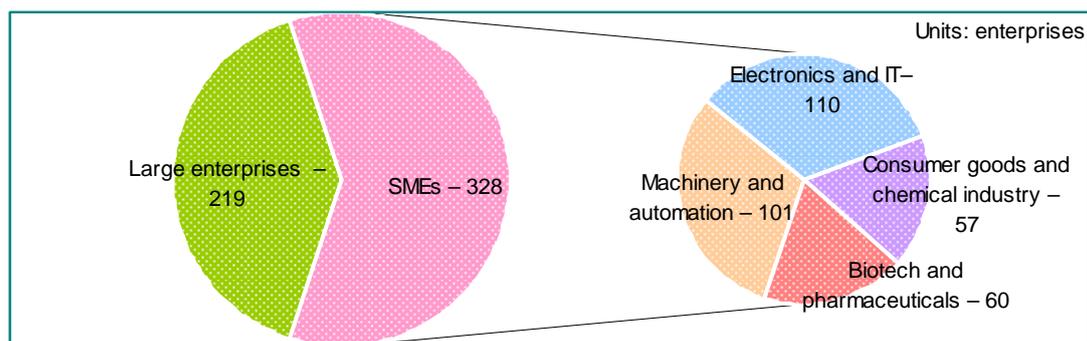
Table 6-2-1 ITDP Plan Approvals

Unit: NT\$ thousands

Item	2005	2006	2007	2008	1999 - 2008
No. of Plans	53	61	64	60	497
No. of Firms Involved	83	137	117	101	809
Total Funding	4,153,153	5,962,966	3,711,547	3,283,720	45,801,876
Total Government Subsidies	1,394,555	1,749,253	1,170,426	1,087,561	12,789,290

Source: ITDP website.

Figure 6-2-1 SME Participation in ITDP Plans



Source: ITDP website.

2. The Small Business Innovation Research (SBIR) Program

(1) Program Contents

To encourage Taiwan's SMEs to step up their development of innovative new technologies and new products, thereby strengthening the competitiveness of the SME sector, the MOEA formulated the Small Business Innovation Research (SBIR) program in accordance with the provisions of the *MOEA Incentive Scheme for Enterprises to Develop Industrial Technologies*. Taking into consideration the fact that SMEs constitute the backbone of Taiwanese industry, it was anticipated that the SBIR program would help to reduce the cost and risk of innovation and R&D for SMEs, thereby helping to stimulate these activities in

the SME sector.

There are two categories of SBIR plans: innovative technology and innovative services. The application process involves two phases: Phase I (Preliminary Research and Preliminary Planning), in which the participants undertake research and evaluation with respect to innovative or cutting-edge ideas that can create real benefits for industry, and Phase II (R&D and Detailed Planning), in which, having clarified the innovative technology, product or service research target and completed the evaluation process, the participants move on to the actual R&D work. Applications may take the form of an individual application, where a single company or business submits an application for SBIR plan funding support, or an R&D alliance application, where a group of at least three enterprises, more than half of which are SMEs, and which are represented by an SME, submit an application for funding support for a project to be carried out by an R&D alliance in which the intra-industry vertical alliance or cross-industry alliance undertakes research relating to the development of industry standards, technology specifications, a joint platform, emerging industry upgrading or transformation of a traditional industry.

In the second half of 2008, the MOEA expanded the scope of the funding support provided for SBIR plans, with a redefinition of the term “innovative technology” so as to encourage SMEs to undertake innovative R&D and implement the results, and to ensure the widespread application of the technology that is developed. To meet the needs of SMEs that have already completed Phase II of an SBIR plan and wish to develop added-value applications, a new “Phase II+” application stage has been added, and “innovative technology” has been redefined to include innovative applications and innovative R&D. These changes came into effect on November 10, 2008. Firms that have not previously received SBIR funding can apply for innovative application funding support for applications that are innovative or can raise the level of the firm’s technology.

Following the global financial crisis, as part of its efforts to strengthen the R&D capabilities of Taiwanese industry, the MOEA has introduced a number of new measures to stimulate R&D. The funding available under the SBIR program has been increased by 30%, and greater attention is being paid not only to the ongoing implementation of R&D activities but also to the cultivation of R&D talent. In line with the instructions given by President Ma and Executive Yuan Premier Liu that efforts should be made to help Taiwanese enterprises differentiate themselves from their counterparts in the emerging markets of East Asia and establish a clear positioning within the framework of global competition, the SMEA has been working with other MOEA agencies to implement the Innovation Development Plan. The R&D capabilities of 18 research institutes with a combined total of over 5,500 R&D

related personnel will be integrated to create 12 industrial technology upgrading guidance teams (also known as the “Innovation Train”) in various specialist fields; the guidance teams will be working closely with industry associations. It is anticipated that these guidance teams will be able to provide concrete assistance in the development of SBIR plans, contributing to the development of new products and the dissemination of new technology. The guidance teams will help to bring real change to Taiwanese industry, helping firms to secure R&D funding, cultivate and retain R&D talent, and build up the capabilities needed to cope with the impact of the global financial crisis.

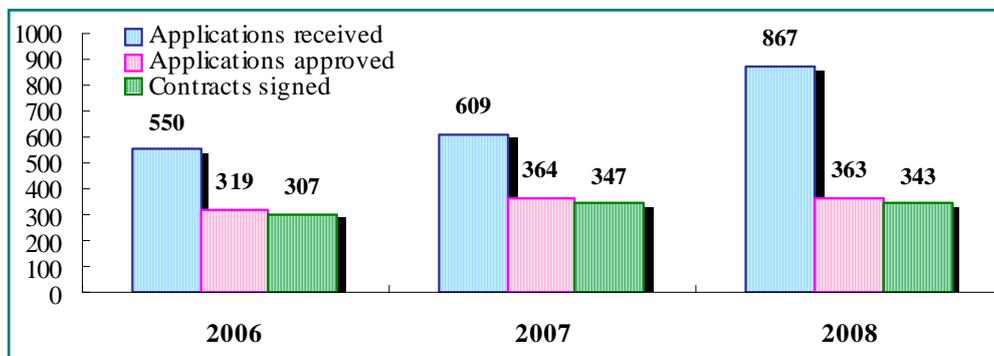
(2) Results Achieved

a. SBIR Plan Approvals

Since implementation of the SBIR program began, thanks to active promotion by the MOEA there has been a steady increase in the number of SBIR plan funding applications received each year. In 2008, a total of 867 applications were received; over the past three years, on average 60.46% of applications have been approved.

A breakdown of the approved applications from small enterprises in 2007 – 2008 is given in Table 6-2-2 below. It can be seen that the largest number of approved applications (277) were from small enterprises in the machinery industry, followed by the consumer goods industry (127), the electronics industry (119), and the service sector (101). The most pronounced increase has been in the number of R&D alliances (an annual growth rate of 283.33%), followed by service alliances (140%).

Figure 6-2-2 SBIR Plan Approvals, 2006–2008



Source: Small and Medium Enterprise Administration, Ministry of Economic Affairs, SBIR Program website.

b. Provision of Funding Support to SMEs

Between February 1999, when implementation of the SBIR program began, and June 2009, a cumulative total of 3,015 SBIR plan applications were approved, with the total amount of

funding support provided being just under NT\$6.3 billion. This funding support stimulated SME spending on R&D that exceeded NT\$12.1 billion, thereby helping to raise the technology level of Taiwan's SMEs and boost Taiwan's overall industrial competitiveness. The SBIR program has also made a major contribution towards the upgrading and transformation of Taiwan's traditional industries.

Table 6-2-2 Small Enterprise SBIR Plan Application Approvals

Units: Approved applications; %

	Service Alliances	R&D Alliances	Service Sector Firms	Biotech Firms	Consumer Goods Firms	Machinery Industry Firms	IT Firms	Electronics Firms	Total
2007	5	18	66	58	106	195	77	84	609
2008	12	69	101	79	127	277	83	119	867
Annual growth rate	140.00	283.33	53.03	36.21	19.81	42.05	7.79	41.67	42.36

Source: Small and Medium Enterprise Administration, Ministry of Economic Affairs, SBIR Program website.

3. The Innovative Technology Applications and Services (ITAS) Program

(1) Program Contents

The Ministry of Economic Affairs (MOEA) launched the Innovative Technology Applications and Services (ITAS) program in 2008 to encourage business enterprises to plan and develop innovative, hi-tech applications and services and innovative business models that can help to create new business opportunities and stimulate industrial development, in line with the government's positioning of high-value-added manufacturing and knowledge-intensive service industries as the two key engines to drive Taiwan's economic growth. Besides encouraging firms to develop innovative, cutting-edge applications and services, firms will also be encouraged to develop innovative services and business models that use technology integration and the application of new technologies to meet particular industrial, social and lifestyle needs, thereby speeding up the reorientation of Taiwan's manufacturing sector towards service provision, the integration of manufacturing and services, and the development of new types of application service.

(2) Results Achieved

The ITAS program seeks to encourage business enterprises to leverage the integration and application of technology to develop innovative services and business models. Over the years, the government has provided funding support for over 300 projects, with the companies involved raising an additional NT\$10 billion plus themselves. More than 5,500 R&D personnel have been involved in these projects, which cover not only the information and electronics industry but also traditional industries such as the machinery manufacturing,

motor vehicle and motor vehicle parts manufacturing, textile manufacturing, paper-making, and die making industries.

Within the framework provided by the ITAS program, a number of key service plans have been initiated to meet the needs of society and industry. The areas covered by these plans include supply chain management, telemedicine, electronic payments, etc. To help Taiwanese industry speed up the process of upgrading and innovation, in 2008 the government added new key service plans, focusing on the servicization of manufacturing industry and cross-industry system integration. These plans will make use of software-hardware integration and the integration of heterogeneous systems to ensure the healthy development of industrial service systems.

4. The Conventional Industry Technology Development (CITD) Program

The advent of globalized competition, the capital markets' preference for hi-tech industry and the impact of WTO accession have led to a rapid worsening of the state of Taiwan's traditional industries, which today are facing major challenges. In accordance with the provisions of the Plan for Enhancing the Competitiveness of Traditional Industries, the Industrial Development Bureau, MOEA launched the Conventional Industry Technology Development (CITD) program to provide R&D subsidies to encourage enterprises in traditional industries to undertake R&D activity. It is anticipated that the CITD program will enhance the range of supporting services available, and will raise the percentage of firms in traditional industries that undertake R&D, thereby helping Taiwan's traditional industries to upgrade their independent R&D capabilities and achieved sustainable growth. The CITD program comprises three sub-plans, the content of which is outlined below:

(1) Product Development Sub-plan

- a. Provision of R&D subsidies of up to NT\$1.6 million for a period of one year, or NT\$3.2 million for a period of two years.
- b. Target: Subsidies are provided for new product development, with the aim of encouraging enterprises in traditional industries to undertake new product development work. In principle, the products developed should embody technology superior to that of any other firms in Taiwan in the same industry.

(2) Joint Development Sub-plan

- a. Provision of R&D subsidies of up to NT\$10 million for a period of one year. The subsidy for the leading firm in the consortium is capped at NT\$2.5 million for one year; other

participant firms may receive up to NT\$1.6 million.

- b. Applicant projects must have significant market potential, and must involve pre-volume-production joint R&D work. The subject of the R&D should offer the potential for shared use, or should represent a key technology. In principle, the products developed should embody technology superior to that of any other firms in Taiwan in the same industry.
- c. Target: Only enterprises in the textile industry, the plastics industry, the electric motorcycle battery industry and the rail transport bogie manufacturing industry may apply for subsidies under this sub-plan.

(3) Product Design Sub-plan

- a. Provision of subsidies of up to NT\$500,000 for a maximum of 6 months.
- b. Target: The emphasis in this sub-plan is on improving the design aesthetics of new products, including the development of new functions, new forms, new materials, and new color schemes, leveraging product design to build competitive advantage through innovation and differentiation.

5. The New Leading Product Development and Assistance Project

(1) Program Contents

The Industrial Development Bureau, MOEA began implementation of the New Leading Product Development and Assistance Project, whereby R&D subsidies would be used to enhance the competitiveness of Taiwan's hi-tech sector, in 1991. Initially, the emphasis was on actively promoting the growth of emerging hi-tech industries and on raising the technology level of existing industries.

(2) Results Achieved

The New Leading Product Development and Assistance Project has achieved impressive results. Since implementation of this Project began, a cumulative total of 1,516 applications for R&D subsidies have been received, of which 764 were approved, involving total R&D expenditure of approximately NT\$76.54 billion (of which the government provided NT\$12.72 billion in subsidies and NT\$9.41 billion in additional support, with the companies concerned raising a further NT\$45.41 billion). The total approved funding for these projects was NT\$67.54 billion, and the total number of personnel involved was 20,835. Of the 764 approved projects, 433 (56.7% of the total) involved SMEs, with total R&D expenditure of NT\$29.8 billion, including NT\$5.96 billion in government subsidies, and 331 (43.3%) involved large enterprises, with total R&D expenditure of NT\$37.8 billion, including

NT\$6.76 billion in government subsidies. It can thus be seen that the beneficiaries of this project have mostly been SMEs.

As regards the benefits in terms of technology development, on average each subsidized R&D project has led to the development of 3.78 items of new technology, of which 1.76 could be classed as innovative technology, and 2.02 patents; on average each project has resulted in the development of 2.02 derivative products. With regard to the results achieved in terms of stimulating investment in R&D, on average, in the three years following commencement of a subsidized R&D project, every NT\$1 of government subsidy has stimulated an additional NT\$1.64 in R&D spending, plus a further NT\$5.18 in follow-up R&D expenditure in the three years after project termination. Regarding volume production, on average every NT\$1 of government subsidy has stimulated NT\$16.87 of investment in volume production during the three years following project termination. If investment in R&D and in volume production are combined, it can be seen that every NT\$1 of government subsidy has led to a further NT\$23.26 of investment by the companies concerned. On average, each project has resulted in total investment of NT\$392,498.

6. The Assist Service Sector Technology Development Plan

As of the end of 2008, the service sector accounted for 73% of Taiwan's GDP, a percentage similar to that seen in the advanced nations. In the future, service sector development will unquestionably play a key role in Taiwan's economic growth. R&D and innovation are needed in the service sector just as much as in the manufacturing sector; only by developing new, more profitable business models can Taiwan's service sector enterprises hope to survive and thrive in today's rapidly changing, globalized market.

Recognizing the emergence of a new industrial development environment, on October 7, 2005 the Commerce Department, MOEA promulgated the Regulations Governing the Promotion of Commercial Research and Development, and announced the launch of the Assist Service Sector Technology Development Plan, with the aim of boosting value-added creation in the service sector and creating a new definition of what constitutes "value" in this sector.

Under the Assist Service Sector Technology Development Plan, subsidies are available for enterprises engaged in wholesaling, retailing, logistics, restaurant operation, management consulting, international trade, e-commerce, convention and exhibition management, advertising, commercial design, franchise operation, etc. Applicants must be engaged in the development of new services, new business models, new marketing models or new commercial applications technology, and the services or models developed must be superior to those of other enterprises in the same industry. Subsidies are capped at NT\$2.5 million for

a period of one year or NT\$5 million for a period of two years; the total subsidy received may not exceed 50% of the total expenditure required for the project.

Recently, unemployment has risen dramatically in Taiwan as a result of the global economic downturn. The Commerce Department has responded by launching the Franchise Store Subsidy Plan, with the aim of leveraging commercial services to boost consumption. To encourage the growth of franchise businesses, the government is providing support through the relaxation of onerous regulations, consulting and diagnostics services, financial subsidies, managerial guidance, manpower cultivation, and assistance with marketing and promotion. It is anticipated that this plan will have a pronounced multiplier effect in terms of providing a stimulus to the wider economy, boosting consumption and creating new jobs.

Besides the subsidy programs described above, the MOEA has also been working actively to build up and maintain the technology innovation capabilities of Taiwanese industry through a range of other programs that seek to encourage ongoing investment in innovation and R&D by business enterprises, so that Taiwanese firms can continue to create value despite the impact of the global economic downturn, and be in a position to take full advantage of future opportunities. The concrete measures adopted are outlined below:

(1) Strengthening Investment in R&D Manpower Development

The MOEA Plan for Promoting Collaborative Research by Universities and Research Institutes involves the promotion of collaboration between domestic universities and research institutes on joint research projects (which may also involve business enterprises), with the aim of recruiting and cultivating R&D manpower on a large scale and thus building up human capital. In 2009, the MOEA expects to provide support for 100 joint research projects of this type, leading to the recruitment of an additional 2,450 research staff by the institutions concerned.

(2) A 20 – 30% Increase in R&D Subsidies for Industry

The government is increasing the amount of R&D subsidies provided to business enterprises by 20 – 30%, so as to reduce the financial burden on firms that undertake R&D projects. Firms that are receiving subsidies under the ITDP, ITAS or New Leading Product Development and Assistance Project programs will have their subsidies increased by 20%; those participating in SBIR, CITD or Assist Service Sector Technology Development Plan projects will receive a 30% subsidy increase.

(3) Increased Subsidies to Help Local Government Authorities Stimulate Innovation in Special Local Industries (Local SBIR Plans)

Provision of central government funding to help local government authorities support innovation and R&D plans undertaken by special local industries began in 2008; in 2009, this funding support is being doubled, so as to ensure that this initiative to encourage SMEs to undertake innovation produces the desired results. In 2009, a total of NT\$117 million will be invested to support special local industry innovation and R&D promotion plans in 12 counties and cities, helping 250 enterprises to undertake R&D.

(4) Encouraging Research Institutes to “Adopt” Industry Clusters, and Expanding the Provision of Subsidies for Local Industry R&D Alliances

A group of 18 research institutes will be “adopting” industry clusters, providing technology consulting services in 25 counties and cities, while also promoting the formation of industry cluster R&D alliances and the development of mechanisms to create innovation through value and promote industrial upgrading and transformation, thereby increasing the R&D resources available to individual firms. In 2009, a total of NT\$350 million will be allocated for this initiative, providing subsidies for 60 local industry R&D alliances and boosting their production value by an anticipated NT\$18 billion.

(5) Expanded Implementation of the Plan to Provide Rapid Technology Guidance to SMEs

Technology guidance organizations will be providing SMEs with comprehensive, short-term technology guidance, covering areas such as R&D, design, production, logistics, automation and e-enablement that are closely linked to firms’ ability to upgrade and transform themselves. It is anticipated that NT\$200 million will be allocated to this plan in 2009. The guidance organizations will be foundations appointed by the MOEA, as well as universities and technical services companies. The goal for 2009 is to provide guidance to 1,000 SMEs.

(6) Expanding the Scope of the Plan for Promoting the Provision of Technology Assistance to SMEs by Universities

This plan involves the leveraging of universities’ extensive R&D capabilities to support industry, helping business enterprises to solve pressing problems and showing them how to make use of government R&D resources to boost their core competitiveness. In 2009, the government will be allocating NT\$140 million to this program; it is anticipated that support will be provided for 1,500 individual projects.

(7) Expanded Implementation of the Plan to Encourage the Establishment of R&D Centers in Taiwan by Foreign Enterprises

In 2009, in an attempt to expand the benefits resulting from the establishment of R&D centers in Taiwan by foreign enterprises, and to encourage Taiwanese companies to

participate in international R&D collaboration, a new application system was introduced whereby consortiums of foreign and domestic companies can apply for subsidies together. It is anticipated that this new system will help to integrate Taiwan's R&D resources and help Taiwanese enterprises keep up with global trends, while also making it easier for domestic enterprises to establish themselves as suppliers to leading international corporations.

(8) Expanded Implementation of the Plan to Encourage the Establishment of R&D Centers in Taiwan by Domestic Enterprises

Under this plan, domestic enterprises can apply for an Alternative National Service quota. This year, the subsidies provided to encourage firms to recruit high-level (master's degree holder and higher) R&D talent under this plan have been increased from a maximum of NT\$5 million over three years to a maximum of NT\$5 million per year. It is anticipated that this scheme will contribute to an ongoing enhancement of both the scale and content of the R&D activities of domestic enterprises, helping them to build up their R&D capabilities which can encourage them to maintain their Taiwan-based operations.

III SME Upgrading and Transformation

With the dawning of today's era of economic globalization, the external competition that business enterprises face has become increasingly intense. Those firms that stick to outdated business models and fail to innovate will soon go under; businesses need to transform and upgrade themselves, and raise their competitiveness, if they are to survive in the rapidly changing business environment of the future.

1. Providing SMEs with Guidance to Help Them Upgrade and Transform Themselves

SMEs are generally under-capitalized and suffer from a shortage of human talent; their small size also tends to result in business models that are less comprehensive than those of large enterprises. With this aim in mind, the Small and Medium Enterprise Administration (SMEA), MOEA has launched the Plan to Help SMEs Enhance their Technology Capabilities, providing innovative services through a Technology Application and Business Opportunity Promotion Platform. These services are mainly directed at innovation-oriented SMEs, i.e., those SMEs that position technology innovation and R&D at the heart of their operations and investments, and those that are willing to engage in technology application integration with external resources and to undertake strategic collaboration in order to raise their competitiveness. The SMEA provides guidance funding, while leveraging the Industrial Technology Research Institute's extensive experience in providing guidance to industry to

provide SMEs with guidance and services related to technology collaboration and business opportunity development.

The main content of the Plan to Help SMEs Enhance their Technology Capabilities is as follows:

(1) Recommendation of Key Technologies to Support the Integration of Technology Application Development

Provision of a “matching” service, arranging discussions regarding appropriate technologies with the aim of meeting the requirements of both the party providing the technology and the party that needs the technology, while integrating the capabilities of the Industrial Technology Research Institute (ITRI) and other guidance providers as well as other government guidance resources, so as to help SMEs upgrade their technology and develop high-value-added products.

(2) Helping SMEs to Access the Government’s Innovative Technology R&D Guidance Resources

Application and consulting services are provided with respect to government R&D subsidies, preferential loans, etc. These services include the explanation of government subsidy schemes, helping SMEs to formulate subsidy application plans, and leveraging the technology capabilities of ITRI and other research institutes to help compensate for the gaps in SMEs’ own capabilities, for example by providing consulting services to help SMEs formulate proposals, thereby making it easier for SMEs to obtain the resources they need.

(3) Holding Innovative Technology and Investment Fairs

The technology and investment fairs organized as part of the Plan to Help SMEs Enhance their Technology Capabilities provide a venue for accessing technology acquisition and investment opportunities. The one-to-one business matching that takes place at the fairs and the additional follow-up services help to create new business opportunities and practical collaboration.

(4) Serving as the MOEA Business Matching Coordination Center to Maximize the Synergy of Guidance

In 2007, the SMEA launched the “SME Business Matching Exchange Train” activity, whereby the SMEA would be responsible for coordinating the various business matching events organized by agencies falling under the Ministry of Economic Affairs (MOEA). The SMEA was to serve as the overall coordinator, contact window and service hub for these business matching activities, with the aim of providing a more comprehensive, professional

business matching service that would increase the business matching success rate and boost the overall amount of investment undertaken in these collaborative projects.

(5) Helping SMEs to Access the Government's Innovative Services Guidance Resources

Under the Plan to Help SMEs Enhance their Technology Capabilities, the SMEA helps SMEs to develop business models oriented towards service innovation, and to apply for the various guidance resources that the government provides to support innovative services development.

(6) Business Plan Formulation Support

The Plan to Help SMEs Enhance their Technology Capabilities incorporates the provision of guidance to help innovation-oriented SMEs that have significant development potential and clear investment goals to formulate business plans. Special teams are assigned to help the SMEs complete their business plans, thereby making it easier for these firms to access the resources they will need to commercialize their ideas.

In 2008, four innovative technology and investment fairs were held, with a total of 65 innovative technology presentations and displays. 727 of the participants were representing firms that were in need of particular types of technology; 514 business matches were made on the day of the events. The holding of these technology and investment fairs helped SMEs to submit 9 Innovative Technology R&D guidance resource applications, thereby stimulating a total of NT\$42.27 million in R&D spending; 7 proposals were able to secure Innovative Service guidance resources, bringing about investment of NT\$43.73 million. As regards the provision of assistance for business plan formulation, 11 SMEs received assistance in this area; these SMEs were able to participate in further business matching activities to obtain investment, leading to the formation of 5 strategic partnerships that created business opportunities worth over NT\$76 million. In all, 15 “SME Business Matching Exchange Train” events have been held, with a total of 508 SMEs receiving assistance, and providing venues for the showcasing of over 1,250 new technologies and products. These events saw over 4,000 business matching discussions, resulting in nearly 400 investment and technology collaboration partnerships which are expected to be worth around NT\$290 million.

2. Policy Resources for SME Upgrading and Transformation

As noted above, the Plan to Help SMEs Enhance their Technology Capabilities involves the provision of services to help SMEs access government resources. The policies implemented by the government to help SMEs upgrade and transform themselves fall into three broad categories: technology upgrading, e-enablement, and enhancement of quality and

management capabilities. Government resources are available for each of these categories; SMEs wishing to make use of these resources can contact the regulatory authority in question.

Faced with the economic downturn that has resulted from the global financial crisis, as well as the rapidly changing global trading environment that economic globalization has brought, business enterprises needed to adopt a positive, proactive attitude to overcome these challenges. Enterprises need to abandon outdated modes of thinking and broaden their horizons; by undertaking ongoing innovation and reform, and working to upgrade and transform themselves, they can maintain a growth trajectory. For SMEs, which tend to suffer from under-capitalization and limited manpower resources, achieving successful technology innovation, upgrading and transformation is no easy task. Nevertheless, those SMEs that make effective use of the government resources outlined above should be able to achieve much greater success in their efforts to upgrade and transform themselves, while expending significantly less effort to do so.

Part Two

Special Topics on SMEs



Chapter 7

The Role of SMEs in Regional Economic Development

The process of economic globalization has brought little direct benefit to Taiwan; on the contrary, as a result of globalization, Taiwan has found itself faced with steadily intensifying competition from the emerging economies, including China, Russia, India, and the countries of Southeast Asia. Taiwan's SMEs, which already suffered from various inherent weaknesses, have found it very difficult to achieve export growth, and the outlook for future development has become increasingly bleak. At the same time, owing to the difficulty in reaching agreement between World Trade Organization (WTO) member economies, there has been a steady increase in the formation of bilateral and regional trade mechanisms. While Taiwan did succeed in securing membership of the WTO in 2002, Taiwan's diplomatic isolation has made it very difficult for it to become a participant in bilateral or regional trade agreements. As a result, Taiwan has not been able to benefit from the market opening, tariff reductions and trade and investment facilitation measures that these free trade agreements provide. Overall, economic globalization and regional integration have presented Taiwan's SMEs with unprecedented challenges.

In the East Asia region, 2010 will see the formation of the "ASEAN + 1" (ASEAN plus China) free trade agreement, possibly followed by an "ASEAN + 3" (ASEAN plus China, Japan and South Korea), and maybe even further expansions of this free trade grouping. The economies involved in these free trade agreements will see a substantial reduction in, and in some cases elimination of, tariff barriers, which will inevitably lead to changes in regional trade patterns and a trade substitution effect. Faced with the prospect of an intensification of regional economic integration in the Asia-Pacific region in the twenty-first century, given that Taiwanese enterprises will be put at a disadvantage in this new trading environment, and given also that Taiwan's industrial structure is undergoing a dramatic transformation, what kind of role will Taiwan's SMEs find themselves playing in the process of regional economic development, and what strategies will they need to adopt?

I Globalization and Regional Economic Integration

1. Globalization and Economic Globalization

The term “globalization” first came into use in the 1980s, when internationally accepted “global standards” were coming into use, leading to increased globalization of culture, politics, and economic matters. The countries of Europe and North America were able to leverage their economic and technological might to export their political and economic policies, as well as culture and ideas, in a one-sided manner through the medium of globalization, ignoring the differences that exist between different countries in terms of factor endowments and the political and economic environment. Economies located within the same region began to break down the economic and trading barriers that had separated them, exploiting their respective competitive advantages to trade with each other (including the exchange of capital flows) and invest in each other. Through this process, economies within the same region gradually became more dependent on one another; by collaborating in such a way that their respective strengths and weaknesses complemented each other, they were able to create a win-win situation for all the parties concerned that achieved the goal of strengthening their international competitiveness.

2. The Extent of Regional Economic Integration and Its Impact

The extent of regional economic integration can vary considerably. In ascending order of intensity, the main forms of integration are: (1) a preferential trade agreement (PTA); (2) a free trade area (FTA); (3) a customs union (CU); (4) a common market; and (5) an economic union. With a PTA, the signatories to the agreement benefit from lower tariff rates than those applying to other countries. An FTA involves the granting of even more favorable treatment with respect to substantially all trade between the signatory nations. The basic model for an FTA is a regional trade agreement (RTA). Besides establishing a free trade zone, the members of an FTA may also establish common external tariffs (CET). If there is also a free flow of production factors between the FTA members, then the level of integration can be deepened still further, creating a common market. The highest level of regional economic integration is an economic union, in which the member nations coordinate the main aspects of their economic policies (including fiscal, monetary and industrial policy); they may also adopt a common currency and unified exchange rates, and establish a unified central bank.

Empirical research has shown that regional integration does have positive benefits for the participating nations. Taking the North American Free Trade Agreement (NAFTA) as an example, both Mexico and the U.S. have benefitted from the integration of their economies (although the benefits to Mexico have been greater). Clarete and Edmonds examined trade data for 83 countries over the period 1980 – 2000, using the gravity model to explore the impact of 11 PTAs on intra-regional trade, external trade and the Asia-Pacific region as a whole. They found that the impact of individual PTAs on regional trade varied considerably,

but that in most cases the impact on global and regional trade was a positive one (Table 7-1-1).

Table 7-1-1 The Impact of Regional Economic Collaboration Agreements on Trade

Category	Increase in Both Intra-regional and Global Trade	Increase in Intra-regional Trade, Without Leading to a Decline in Trade with Non-members	Slight Decline in Intra-regional Trade and in Trade with Non-members
Regional economic collaboration	The Andean Pact, ECO, EFTA, Mercosur, SAPTA, and SPARTECA	The EU and APEC	ASEAN

Source: Clarete and Edmonds (2002), *Asian Regionalism and Its Effects on Trade in the 1980s and 1990s*, Asian Development Bank.

Similarly, the establishment of the ASEAN Free Trade Area (AFTA) has helped to stimulate intra-regional trade in Southeast Asia. The main benefits that would accrue to Taiwan through membership of RTAs and FTAs would include trade creation, trade diversion, investment diversion and investment creation. It is worth noting that, with the opening up of the Chinese market, the intra-regional trade effect in the Greater China region has gradually declined, while in the case of the EU and NAFTA that trade barrier effect has become steadily more pronounced.

II Regional Economic Integration – Organization and Development

Following in the wake of globalization, regional economic integration has become an important new international trend. International treaties and multi-national organizations can play an important role in maintaining the stability of the regional economic integration process and fostering its development, while at the same time protecting the rights of (and imposing obligations on) individual countries. These organizations can contribute to the establishment of the necessary systems and structures, help to resolve international trade disputes, and promote a further deepening of regional economic integration.

The World Trade Organization (WTO) was formally established on January 1, 1995, taking on responsibility for the implementation of the decisions reached during the Eighth Round of the General Agreement on Tariffs and Trade (GATT) (the Uruguay Round). The WTO took over the functions that the GATT had previously performed, but whereas the GATT was merely an international trade agreement, the WTO was structured as a fully-fledged international organization. WTO membership and the approval of WTO agreements were to be formally ratified by the organization's member economies, meaning that individual governments' WTO commitments would be both comprehensive and permanent; furthermore, the decisions reached by the WTO's dispute resolution mechanism

would have full legal force.

The WTO was established to regulate global trade agreements, with the aim of promoting the liberalization of global trade. However, because of the excessive time and effort needed to complete multilateral trade agreements within the WTO framework, many countries have begun to focus more on the creation of bilateral trade agreements, particularly FTAs. However, the establishment of large numbers of FTAs has led to the creation of invisible trade barriers, resulting in a trade diversion effect which is prejudicial to the achievement of the WTO's goal of global trade liberalization. For this reason, in 1996 the WTO established the Committee on Regional Trade Agreements (CRTA) to review the content and implementation timetable of all the regional trade agreements (RTAs) entered into by WTO member economies, and to determine what trade creation and trade diversion these agreements would have. The CRTA also examines the impact of RTAs on the multilateral trade system (MTS), with the aim of promoting the elimination of barriers to trade and ensuring trade liberalization.

The holding of the WTO's Fourth Ministerial Meeting at Doha (the capital of Qatar) in November 2001 marked the beginning of a new round of multilateral trade talks, the Doha Round. In the event, no meaningful agreement was reached by 2005, or even by the end of 2009. Due to the slow pace of progress in multilateral trade talks, there has been a rapid increase in the creation of bilateral FTAs and RTAs.

According to WTO statistics, a total of 103 RTAs and FTAs came into effect between 2000 and 2008, representing more than half of the 182 RTAs and FTAs that currently exist. Almost every WTO member economy is a signatory of at least one FTA or RTA.

Taiwan has signed FTAs only with five Central American nations: Panama, Nicaragua, Guatemala, El Salvador and Honduras. It has yet to sign an FTA with an Asian nation, whereas neighboring countries such as Japan, South Korea, Singapore and China have been able to actively participate in the process of regional economic integration.

III Taiwan's Role in Regional Economic Integration

This section examines Taiwan's economic interaction with (and investment in) the world's main regions, and explains the role that Taiwanese SMEs play within APEC.

1. Taiwan's International Economic and Trade Relations

The Taiwanese economy is heavily dependent on foreign trade. Examination of Taiwan's main export markets during the period 2005 – 2008 (Table 7-3-1) shows a high level of concentration; Taiwan's five largest export markets account for over 60% of the country's

total exports, and the ten largest export markets account for around 75% of total exports. China alone holds a share of Taiwan's total exports that exceeds 20%, while only about 10% of Taiwan's exports go to each of Hong Kong and the U.S., which are the second and third largest export markets, respectively. Of the countries that make up Taiwan's ten main export markets, Vietnam's share of Taiwan's exports has risen sharply since 2006; Taiwan's exports to Vietnam are now roughly equal to its exports to South Korea, which has for some time been Taiwan's sixth largest export market. By contrast, the shares of total exports held by the U.S. and Japanese markets have been falling.

Table 7-3-1 Taiwan's Main Export Markets

Units: US\$ millions; %

Ranking	2005			2006			2007			2008		
	Country	Exports	% of Total Exports	Country	Exports	% of Total Exports	Country	Exports	% of Total Exports	Country	Exports	% of Total Exports
1	China	40,879	21.58	China	48,354	22.68	China	58,511	24.89	China	63,133	25.90
2	Hong Kong	30,721	16.22	Hong Kong	33,569	15.75	Hong Kong	34,239	14.57	Hong Kong	29,697	12.18
3	USA	28,510	15.05	USA	31,428	14.74	USA	31,071	13.22	USA	29,615	12.15
4	Japan	14,481	7.65	Japan	15,607	7.32	Japan	15,161	6.45	Japan	16,355	6.71
5	Singapore	7,656	4.04	Singapore	8,844	4.15	Singapore	10,062	4.28	Singapore	11,206	4.60
Total for Top 5		122,246	64.55		137,802	64.65		149,045	63.41		150,005	61.53
6	South Korea	5,575	2.94	South Korea	6,826	3.20	South Korea	7,487	3.19	South Korea	8,350	3.43
7	Germany	4,352	2.30	Germany	4,888	2.29	Vietnam	6,728	2.86	Vietnam	7,788	3.20
8	Netherlands	4,323	2.28	Malaysia	4,808	2.26	Malaysia	5,257	2.24	Germany	5,417	2.22
9	Philippines	4,220	2.23	Vietnam	4,786	2.25	Thailand	5,072	2.16	Malaysia	5,369	2.20
10	Malaysia	4,154	2.19	Thailand	4,466	2.10	Germany	5,002	2.13	Thailand	4,805	1.97
Total for Top 10		144,871	76.49		163,576	76.74		178,591	75.98		181,735	74.54

Source: Bureau of Foreign Trade, import/export statistics.

As regards Taiwan's main sources of imports, the U.S., Japan and China between them account for around 45% of total imports, the top five import sources account for approximately 55%, and the top ten account for just over 70% (Table 7-3-2). Japan, which is Taiwan's single largest source of imports, has consistently accounted for around 20% of total imports for some years now, a significantly higher share than that for any other country. However, China's share of total imports rose from 10.97% in 2005 to 13.01% in 2008, during which period Japan's share declined from 25.3% to 19.39%, the share held by the U.S. fell from 11.56% to 10.91%, and South Korea's share declined from 7.27% to 5.49%. There has thus been a clear reorientation in Taiwan's trade towards China, at the expense of other trading partners.

Around 73 – 77% of Taiwan's trade is with other APEC member economies; 8 – 10% is with the EU and 13 – 15% is with the members of NAFTA. Trade with other APEC members is thus by far the most important segment of Taiwan's foreign trade (Table 7-3-3). There are significant disparities between the shares of Taiwan's total foreign trade held by

individual groupings within the APEC region; trade with China (including Hong Kong and Macao) accounts for around 25 – 27% of Taiwan's total foreign trade, whereas trade with the ASEAN member nations accounts for 12 – 13%; between them, these two groupings account for around 40% of Taiwan's foreign trade. Their combined share of Taiwan's exports is even higher, at over 50% of total exports. These figures give some idea of just how important China and ASEAN are to Taiwan.

Table 7-3-2 Taiwan's Main Sources of Imports

Units: US\$ millions; %

Ranking	2005			2006			2007			2008		
	Country	Amount	% of Total Imports	Country	Amount	% of Total Imports	Country	Amount	% of Total Imports	Country	Amount	% of Total Imports
1	Japan	45,940	25.30	Japan	46,203	22.92	Japan	45,857	21.01	Japan	46,434	19.39
2	USA	20,988	11.56	China	24,511	12.16	China	27,807	12.74	China	31,153	13.01
3	China	19,928	10.97	USA	22,498	11.16	USA	26,309	12.06	USA	26,133	10.91
4	South Korea	13,203	7.27	South Korea	14,960	7.42	South Korea	15,120	6.93	Saudi Arabia	15,172	6.34
5	Saudi Arabia	7,437	4.10	Saudi Arabia	9,760	4.84	Saudi Arabia	10,409	4.77	South Korea	13,138	5.49
Sub-total		107,496	59.19		117,932	58.50		125,502	57.51		132,030	55.14
6	Germany	6,148	3.39	Germany	6,106	3.03	Germany	7,045	3.23	Australia	8,265	3.45
7	Malaysia	5,194	2.86	Malaysia	6,024	2.99	Malaysia	6,172	2.83	Kuwait	8,074	3.37
8	Singapore	4,942	2.72	Australia	5,341	2.65	Australia	6,113	2.80	Germany	7,444	3.11
9	Australia	4,720	2.60	Indonesia	5,199	2.58	Indonesia	5,771	2.65	Indonesia	7,284	3.04
10	Indonesia	4,538	2.50	Singapore	5,082	2.52	Kuwait	5,743	2.63	Malaysia	6,745	2.82
Total		133,037	73.26		145,683	72.27		156,345	71.64		169,842	70.93

Source: Bureau of Foreign Trade, import/export statistics.

Table 7-3-3 The Shares of Taiwan's Total Exports Held by Individual Trade Groupings

Unit: US\$ millions; %

Year Region	2005			2006			2007			2008		
	Total Trade	Exports	Imports									
Amount												
Total (all countries)	370,993	189,393	181,600	414,757	213,164	201,593	453,282	235,055	218,227	483,249	243,799	239,449
China (inc. Hong Kong and Macao)	93,749	71,903	21,846	108,368	82,175	26,193	122,572	93,111	29,461	125,726	93,197	32,529
ASEAN	47,649	26,569	21,081	53,566	30,264	23,302	59,000	35,307	23,693	63,450	37,858	25,591
China + ASEAN	141,398	98,472	42,927	161,934	112,439	49,495	181,572	128,418	53,154	189,176	131,055	58,120
APEC	286,090	152,593	133,497	317,125	172,499	144,626	343,023	189,613	153,410	354,002	193,766	160,237
EU (15 pre-expansion members)	37,444	20,359	17,086	39,068	21,748	17,320	42,403	23,323	19,080	43,295	24,351	18,944
NAFTA	53,707	31,056	22,652	58,513	34,232	24,281	62,967	34,384	28,583	61,782	33,291	28,491
Share of Total												
Total (all countries)	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
China (inc. Hong Kong and Macao)	25.27	37.96	12.03	26.13	38.55	12.99	27.04	39.61	13.50	26.02	38.23	13.58
ASEAN	12.84	14.03	11.61	12.92	14.20	11.56	13.02	15.02	10.86	13.13	15.53	10.69
China + ASEAN	38.11	51.99	23.64	39.04	52.75	24.55	40.06	54.63	24.36	39.15	53.76	24.27
APEC	77.11	80.57	73.51	76.46	80.92	71.74	75.68	80.67	70.30	73.25	79.48	66.92
EU (15 pre-expansion members)	10.09	10.75	9.41	9.42	10.20	8.59	9.35	9.92	8.74	8.96	9.99	7.91
NAFTA	14.48	16.40	12.47	14.11	16.06	12.04	13.89	14.63	13.10	12.78	13.66	11.90

Source: Bureau of Foreign Trade, import/export statistics.

2. Taiwan's Overseas Investment

As can be seen from Table 7-3-4, whereas in the past Taiwan's overseas investment was split roughly equally between Asia and the Americas, in the last few years there has been a gradual reorientation towards investment in Asia. Asia has been a major focus of Taiwanese investment for many years, and in the last 10 years or so China has been the single largest recipient of this investment. China's share of total Taiwanese overseas investment has risen steadily from 38.80% in 2001 to 70.53% in 2008. By contrast, over the last three years Singapore (the second largest recipient of Taiwanese overseas investment) has, on average, accounted for only around 6% of Taiwan's total overseas investment. Most Taiwanese investment in North America goes to the U.S., but the share of total Taiwanese overseas investment held by the U.S. has declined steadily from 15.23% in 2001 to 2.64% in 2008. Over this same period, the share held by Central and South America has fallen from 29.53% to 11.32%. The share of total overseas investment held by other regions has generally remained steady at around 1 – 2%. Regional economic integration in Asia has thus had the most pronounced impact on Taiwan's overseas investment; regional economic integration in other parts of the world has had less significance for Taiwan.

Table 7-3-4 Individual Regions' and Countries' Shares of Taiwan's Total Overseas Investment

Region	2001	2002	2003	2004	2005	2006	2007	2008
Asia (total)	50.16	60.71	66.08	79.59	76.15	75.54	75.04	84.04
Japan	2.36	0.33	1.17	1.45	0.50	0.09	0.11	0.34
South Korea	0.17	0.07	0.12	0.06	0.04	0.13	0.07	1.55
China	38.80	53.38	53.66	67.24	71.05	63.91	60.65	70.53
Hong Kong	1.32	2.31	7.49	1.35	1.27	2.27	1.15	2.23
Singapore	5.27	0.36	0.31	7.97	1.16	6.74	7.26	4.60
Indonesia	0.09	0.13	0.15	0.02	0.11	0.07	0.00	0.02
Malaysia	0.63	0.44	0.59	0.34	0.33	0.26	0.40	0.18
Philippines	0.64	1.15	0.03	0.02	0.18	0.11	0.08	0.02
Thailand	0.23	0.08	0.57	0.08	0.24	0.68	4.33	0.06
Vietnam	0.43	0.76	1.84	0.92	1.11	1.03	0.66	4.22
India	0.04	0.03	0.01	0.01	0.02	0.04	0.05	0.11
North America	18.70	8.05	5.46	5.42	3.76	4.08	8.19	2.65
USA	15.23	7.99	5.45	5.40	3.72	4.05	8.19	2.64
Europe	0.65	2.14	0.90	0.60	3.54	3.88	2.54	0.91
Central and South America	29.53	26.19	26.44	12.80	15.38	15.46	11.05	11.32
Oceania	0.88	2.66	0.74	1.38	1.01	0.62	2.69	1.01
Africa	0.08	0.24	0.39	0.20	0.16	0.42	0.49	0.09

Source: Investment Commission, Executive Yuan, *Monthly Statistical Bulletin* (2009).

3. Taiwan's Role within the Regional Economy

Taiwan's economic development strategy has always relied heavily on export trade. An examination of Taiwan's trading relations with the world's three main economic regions shows that there has been relatively little change in the extent of Taiwan's trade dependency on the EU and the NAFTA region (Table 7-3-5). By contrast, Taiwan's trade dependency on

the ASEAN + China (including Hong Kong and Macao) grouping has risen steadily. Whereas in the past Taiwan's foreign trade was reasonably well balanced between the key regions of the world, today it is more heavily focused towards Asia. In terms of economic development, the relationship between Taiwan and the rest of Asia has grown significantly closer.

Table 7-3-5 Taiwan's Trade Dependency with Respect to Individual Regions

Unit: %

Region	Trade Dependency							
	2001	2002	2003	2004	2005	2006	2007	2008
EU (15 pre-enlargement members)	10.75	9.83	10.47	11.48	10.64	10.83	11.15	10.93
NAFTA	17.28	16.58	15.48	16.57	15.29	16.32	16.80	15.68
ASEAN	10.76	11.13	11.68	13.47	13.69	15.06	15.83	16.15
China (including Hong Kong)	14.22	17.91	21.78	26.71	28.04	31.69	33.68	32.77

Source: Bureau of Foreign Trade, Trade Indicators Database.

A second important point is that the rise of ASEAN has had a significant impact on Taiwan's trade flows. An examination of the changes in Taiwan's trade dependency over the years shows that the extent to which Taiwan is dependent on trade with ASEAN has risen by around 60%. The attraction exerted by China has been even more powerful; Taiwan's trade dependency with respect to China has increased from 14.22% in 2001 to 32.77% in 2008, a growth rate of 131%. It therefore seems certain that the establishment of trade agreements between ASEAN and China ("ASEAN + 1") or between ASEAN and other countries in the Asia region will lead to major changes in Taiwan's trade flows and trade volume.

If we then go on to consider the types of products that Taiwan exports to and imports from the major economic and trade groupings, it can be seen that, for both exports and imports, machinery and electromechanical equipment account for the largest share of Taiwan's foreign trade, but that this share has been falling gradually. The types of products that Taiwan exports to and imports from the different regional groupings are broadly similar; while mineral products play a particularly pronounced role in Taiwan's trade with ASEAN, generally speaking the main product items are raw materials, chemical products, vehicles, aircraft, ships and other transportation equipment. A third point is that those product types whose share of total trade has risen tend to be those where import duty has fallen dramatically, or was low to start with (Table 7-3-6). Taiwan has consistently maintained low tariff rates with respect to machinery and electromechanical equipment; the fall in the share of total trade held by this product category must thus be attributed to an intensification of competition; this appears to be especially true in the case of the North American market. With regard to other product types such as raw materials, chemical products, and transportation equipment and parts, given that these products do not generally require

cutting-edge technology, a fall in tariff rates could lead to a significant rise in the volume of trade. If Taiwan intends to continue positioning foreign trade as its key driver of economic growth, then it will need to focus heavily on industrial upgrading or work actively to join regional economic partnerships, so as to ensure sustained, long-term growth.

Table 7-3-6 The Importance of Particular Product Types in Taiwan's Trade with Key Regional Groupings

								Unit: %
Region	Ranking	Imports	Share of Total	Growth Rate	Exports	Share of Total	Growth Rate	Effective Import Duty (%)
EU (15 pre-enlargement members)	1	Machinery and electromechanical equipment	33.05	8.19	Machinery and electromechanical equipment	55.02	2.98	1.53
	2	Chemical and related industrial products	20.64	43.84	Base metals and base metal products	12.74	56.00	1.48
	3	Base metals and base metal products	11.15	66.63	Vehicles, aircraft, ships and related transportation equipment	9.70	57.72	0.78
NAFTA	1	Machinery and electromechanical equipment	37.68	10.22	Machinery and electromechanical equipment	51.59	-0.11	0.72
	2	Chemical and related industrial products	13.34	30.74	Base metals and base metal products	15.61	29.33	1.54
	3	Base metals and base metal products	10.12	126.24	Vehicles, aircraft, ships and related transportation equipment	7.81	33.52	0.39
ASEAN	1	Mineral products	34.99	65.98	Machinery and electromechanical equipment	39.12	38.51	0.47
	2	Machinery and electromechanical equipment	30.62	-11.46	Mineral products	20.20	397.92	0.61
	3	Chemical and related industrial products	8.08	59.86	Base metals and base metal products	12.34	93.32	0.92

Source: Bureau of Foreign Trade, Trade Indicators Database.

Table 7-3-7 The Division of Labor between Taiwan and Key Regional Groupings

Region	Division of Labor Indicator (TSC)							
	2001	2002	2003	2004	2005	2006	2007	2008
EU (15 pre-enlargement members)	0.18	0.17	0.18	0.14	0.09	0.12	0.11	0.16
NAFTA	0.22	0.21	0.22	0.15	0.16	0.18	0.10	0.11
ASEAN	-0.02	-0.01	0.02	0.09	0.13	0.15	0.22	0.23
China (including Hong Kong)	0.62	0.63	0.61	0.57	0.56	0.54	0.54	0.52

Notes: 1. "TSC" = Trade Specialization Coefficient.

2. The closer the TSC value is to -1 or to 1, the more the division of labor between the two countries or regions takes the form of a vertical division of labor, with a high level of specialization and intensive collaboration between upstream and downstream segments of the same industry. The closer the TSC value is to 0, the more the division of labor takes the form of a horizontal division of labor, with a high level of intra-industry trade in homogeneous products. As a rule, an absolute value of <0.5 is taken to indicate a horizontal division of labor, and any other value is taken to indicate a vertical division of labor.

Source: Bureau of Foreign Trade, Trade Indicators Database.

An examination of the inter-country division of labor in terms of the Trade Specialization Coefficient (TSC) shows that the division of labor in trade between Taiwan and China (including Hong Kong) is quite pronounced, and takes the form of a vertical division of labor. In Taiwan's trade with the EU, NAFTA and ASEAN, there is a horizontal division of labor. This difference may explain the closeness of the economic relationship between Taiwan and China (Table 7-3-7).

Currently, it is difficult to obtain accurate, comprehensive statistics on bilateral trade in services (including the transportation industry, the tourism industry and other service industries such as financial and telecommunications services); the best that can be done is to examine the figures for total trade in services. As can be seen from Table 7-3-8, at present the regional grouping with the highest intra-regional trade in services is the EU (the 15 pre-enlargement members), where intra-regional trade in services totals US\$2.7 trillion. NAFTA is in second place, with US\$980 billion, followed by ASEAN, with US\$330 billion. The EU also has the highest growth rate in this area, with a 14.9% services export growth rate and a 13.1% growth rate of services imports. One point worth noting is that the rate of growth in the intra-regional trade of services in ASEAN has already surpassed that of NAFTA. Although the absolute value of China's trade in services is lower than that of ASEAN, its growth rate exceeds 20% for both imports and exports; this is far higher than the corresponding growth rates for Taiwan, which are below 10%.

Table 7-3-8 Trade in Services – Annual Totals and Growth Rates

Units: US\$ billions; %

Year	2001	2002	2003	2004	2005	2006	2007	Growth Rate
Exports								
World	1,482	1,594	1,829	2,210	2,473	2,778	3,292	14.2
WTO (153 members)	1,451	1,556	1,782	2,154	2,409	2,703	3,200	14.1
EU-15	625	691	827	994	1,087	1,207	1,435	14.9
NAFTA	317	325	340	390	432	472	536	9.1
ASEAN	67	74	79	104	116	130	153	14.7
China	33	39	46	62	74	91	121	24.4
Taiwan	20	22	23	26	26	29	31	7.8
Imports								
World	1,470	1,557	1,777	2,117	2,351	2,620	3,086	13.2
WTO (153 members)	1,427	1,504	1,713	2,038	2,258	2,514	2,953	12.9
EU-15	606	655	779	908	986	1,077	1,268	13.1
NAFTA	264	271	292	337	368	402	440	8.9
ASEAN	88	93	104	125	138	153	176	12.2
China	39	46	55	72	83	100	129	22.1
Taiwan	23	24	25	30	31	33	35	7.0

Source: *International Trade Statistics, 2008*.

4. Taiwan's Role within APEC

The Asia-Pacific Economic Cooperation (APEC) was established in 1989, with Taiwan joining two years later (under the name "Chinese Taipei"). Since hosting the third APEC SME Ministerial Meeting in 1994, Taiwan has been an active participant in SME-related

APEC affairs. Taiwan's considerable successes in the development of its SME sector ensure that it has plenty of opportunity to make its presence felt at APEC meetings on SME affairs; this area has consistently been the main focus of Taiwan's involvement in APEC meetings. Besides the annual attendance at the APEC SME Ministerial Meeting by Taiwanese government officials of ministerial and vice-ministerial rank, Taiwan is also actively involved in the work of various APEC SME-related working groups.

Taiwan's contributions to APEC in the SME field include the following:

(1) Assisting in the Achievement of the Annual Objectives Set at the APEC SME Ministerial Meeting

In the last few years, Taiwan has put forward a number of collaboration plans and recommendations in line with the main themes of each year's SME Ministerial Meeting. For example, in 2003 and 2004 there was the Plan for Promoting Entrepreneurship, followed in 2005 by the APEC SME Industry Cluster Best Practice Principles plan, and in 2008 by the holding of the APEC High-level Meeting on Driving SMEs' Growth to Promote Local Development, which tied in with the theme of that year's SME Ministerial Meeting: "Sustainable local development to foster SMEs' growth." The organizing of these activities and conferences has led to significant, immediate opportunities for collaboration with the Ministerial Meeting host countries and other APEC members, and has helped to ensure that significant results are achieved with respect to the themes set for each year's Ministerial Meeting.

(2) Taiwan's Experiences in the Area of SME Policy Has Provided a Valuable Reference for Other APEC Member Economies

Other APEC members have always been very interested in learning from Taiwan's experiences in the area of policies to support SME development. In particular, Taiwan is widely regarded as a leading authority on matters related to innovation, information and communications technology (ICT), local development and entrepreneurship, and Taiwan's experiences have on many occasions provided a valuable reference for APEC members when formulating policy in these areas. For example, the 2002 e-APEC strategy and the 2004 APEC Entrepreneurship Action Plan are both examples of concrete collaborative projects that are derived from Taiwan's experiences and suggestions.

(3) Helping with the Leveraging of Other International Organizations' Experiences

While the setting of themes for APEC SME Ministerial Meetings is often undertaken with reference to trends in other international organizations, in the past little attempt has been made to study or draw on the experiences of these organizations. When formulating plans for

APEC activities, Taiwan examines the experiences of other international organizations to see if there are lessons to be learned; Taiwan has also invited experts from the OECD to attend APEC activities held in Taiwan to share their experiences for the benefit of other APEC members.

(4) Helping Other APEC Member Economies with Problems Relating to the Hosting of APEC Events

Taiwan has taken a proactive stance towards helping other APEC member nations that are responsible for hosting APEC events and activities, a stance that has won Taiwan respect from other APEC members. For example, in 2008, Taiwan offered Peru assistance with the formulation of an SME Strategy Plan, and in 2009 it hosted the 28th Meeting of the SME Working Group when Thailand was unable to do so, solving a problem that had been of great concern to Singapore and other APEC members. Taiwan has received widespread praise at APEC SME Ministerial Meetings, and Taiwan's status and perceived importance in this regard has received a significant boost.

IV Strategies for Helping SMEs to Cope with the Changes in Regional Economic Development

Both theoretical and empirical research have shown that regional economic integration does more than just boost intra-regional trade; it also has significant benefits in terms of boosting the overall trading capabilities of the countries concerned. However, for countries that are not members of regional trade groupings, the process of regional economic integration can cause serious harm. With progress in the WTO's Doha Round stalled, and given the immense amounts of time and energy required to complete multilateral trade negotiations, more and more countries have begun to focus on achieving consensus on regional economic integration or on bilateral trade agreements within a small group of countries, with the aim of overcoming barriers to trade and promoting capital and technology investment. Regional trade integration has come to be seen as the fastest and most effective way of achieving these goals. In many cases, the issues covered by regional agreements include not only economic issues but also issues relating to energy, environmental protection, anti-terrorism initiatives, etc.

Due to the constraints imposed by its unique international status, while Taiwan has been able to secure membership of the WTO and APEC, it has not been able to sign bilateral trade agreements with any major economies, or to join any regional economic integration organizations other than APEC. As a result, Taiwanese business enterprises have found themselves at a disadvantage compared to their counterparts in other countries in the region.

In particular, Taiwan has gradually become (relatively) less competitive in the production of machinery and electromechanical equipment, an industry in which Taiwan had long enjoyed significant competitive advantage. Taiwan's success in ODM/OEM production has been challenged by developing nations that enjoy lower production costs. In the future, as ASEAN forms more free trade agreements with other countries in the region, Taiwan will need to find some way of leveraging the vertical division of labor that exists between itself and China to cope with the competitive pressure arising from the horizontal division of labor with respect to ASEAN, the EU, and NAFTA. The following sections consider the strategies that Taiwan's SMEs may need to adopt to cope with the changes in regional economic development, and the areas where the government can provide assistance.

1. The Strategies Available to SMEs

Taiwan's SMEs have always been renowned for their flexibility, agility, drive and efficiency. However, with the growth of regional economic groupings, the competitiveness of Taiwanese SMEs' products has gradually come under threat. The expansion of the EU, and the establishment of free trade agreements between ASEAN and China and between ASEAN and other countries in the East Asia region have enhanced the benefits of intra-regional trade for the countries concerned. The additional intra-grouping trade created by these agreements will in many cases replace trade that previously existed between these countries and Taiwan; the formation of these agreements will also have a major impact on Taiwan's overseas investment activity. Faced with this trend towards regional economic integration, SMEs need to concentrate on strengthening their own competitiveness, making effective use of Taiwan's geographical and other advantages, and strengthening their production and sales networks.

(1) Strengthening Competitiveness to Overcome Barriers to Trade

SMEs need to analyze how individual regional economic groupings can be expected to develop in the future, while at the same time analyzing their own strengths and weaknesses so that they can position themselves appropriately, working to strengthen their abilities in manufacturing, marketing or service provision as necessary, and emphasizing innovation. If possible, Taiwanese enterprises should work towards the creation of a value chain based on a truly global division of labor.

(2) Making Effective Use of Taiwan's Advantages with Respect to Particular Regions

In geographical terms, Taiwan lies at the heart of the Asia-Pacific region, and has the potential to become an important transshipment point linking East Asia with North America. The average flying time between Taipei and the seven major cities of the Western Pacific (Hong Kong, Singapore, Manila, Shanghai, Tokyo, Seoul and Sydney) is just 2 hours and 55

minutes, and the average sailing time between Kaohsiung harbor and the Asia-Pacific region's five most important ports (Hong Kong, Singapore, Manila, Shanghai and Tokyo) is only 53 hours. Taiwan constitutes an excellent springboard for multinational corporations seeking to develop the China market. Taiwan should seek to take full advantage of its outstanding economic and strategic location to develop a role within the regional economy that is commensurate with Taiwan's economic strength. Taiwan's positioning within the Greater China region, East Asia and the Asia-Pacific region as a whole is shown schematically in Figure 7-4-1 below:

Figure 7-4-1 Taiwan's Strategy with Respect to Regional Economic Development



Source: Chung-Hua Institution for Economic Research.

a. The Greater China Region

The regional economy closest to Taiwan is the Greater China region. This region is home to the “factory to the world” (China), and also represents one of the world’s most important markets. In the future, China can be expected to overtake the U.S. to establish itself as the world’s largest economy. The people of Taiwan, Hong Kong and China share a common language and a common ethnic background; at the same time, each of the three has its own particular strengths and advantages. Taiwan has the best-educated, highest quality workforce in the Greater China region, and enjoys a significant competitive advantage in the areas of electronics and other hi-tech industry R&D. If Taiwan’s advantages can be integrated with Hong Kong’s experience in financial sector and real estate development, China’s huge area,

enormous labor force and abundant natural resources, and the potential offered by the global market, then in the future the Greater China region has the potential to be a key zone in which Taiwanese businesses and entrepreneurs are best able to leverage their competitive strengths. The normalization of relations between Taiwan and China can be expected to facilitate the formation of a comprehensive cross-strait supply chain, in which Taiwan serves as a decision-making center and a base for value creation, focusing on R&D and design, high-value-added manufacturing and supporting services. If this can be achieved, then Taiwanese industry should be able to achieve a rapid upgrading, while its strategic positioning will also be significantly improved.

In today's environment of growing regional economic integration and rising protectionist sentiment, the signing of agreements to normalize economic and trading relations with China and ensure that the rights of Taiwanese businesses operating in China are protected can help Taiwan to avoid becoming marginalized, and enable it to play a more active role on the international economic stage.

b. The East Asia Region

In the aftermath of the global financial crisis, the U.S.A.'s economic hegemony has come under threat. There has been a gradual shift in the center of gravity of the world economy towards the Asia-Pacific region, and in particular towards the East Asia region, with its population of nearly 2 billion. With the formation of the "ASEAN + 1" trade grouping, and the prospect of a further expansion of this grouping, the degree of influence that the countries of East Asia are able to exert is growing steadily, and it can be anticipated that the East Asia region will take over from the EU and NAFTA as the leading player in the new economic order in the post-crisis era.

Besides the Greater China economic zone, the East Asia region also includes the Northeast Asia and Southeast Asia economic zones. The Northeast Asia economic zone possesses extensive resources, while in terms of its technology level, it both competes against and complements Taiwan; this zone is generally felt to have significant growth potential. Taiwan enjoys close economic and trading relations not only with the countries of Northeast Asia, but also with Southeast Asia. From the point of view of Taiwan's SMEs, implementing a global or at least regional strategy is far from impossible; the important thing is to maintain concentration of the aim and leverage the firm's core competency. For Taiwan as a whole, integrating its economic strengths with those of other countries in the region and focusing on key products should make it possible to achieve a significant enhancement of Taiwan's economic wellbeing; the establishment of comprehensive supply chains in the Greater China economic zone can provide valuable support for Taiwan's efforts to expand its

role within the wider East Asia region.

c. The Asia-Pacific Region

The Asia Pacific Economic Cooperation (APEC) is the Asia-Pacific region's most important economic organization, with a membership that includes many countries located on both the western and eastern Pacific rims. Since joining APEC in 1991, Taiwan has participated actively in various APEC working groups, and has played a constructive role in ministerial meetings and the APEC Annual Meeting, with the aim of enhancing Taiwan's international visibility. As Taiwan sees it, APEC can make a significant contribution towards enhancing the economic competitiveness and influence not only of Taiwan, but of the Asia-Pacific region as a whole. Collaboration with other APEC member economies helps Taiwan to access resources that can be used to develop Taiwan's domestic economy, promote industrial upgrading, etc., while also helping to create new business opportunities for Taiwanese business enterprises and the chance to form strategic alliances with companies in other countries. Taiwan has been a particularly active participant in APEC activities related to e-commerce and SME development. Taiwan's work in this area has contributed to the enhancement of SMEs' efficiency and competitiveness, while also having a positive impact on the creation of business opportunities and raising living standards for Taiwan's citizens.

In the future, Taiwan should seek to expand the opportunities for participation in APEC activities by the private sector. The 28th APEC SME Working Group Meeting, which was held in Taiwan in June 2009, included opportunities for international exchange and the sharing of experience; however, the extent of private-sector participation was still far from satisfactory. If SMEs could make use of APEC seminars and conferences to build networks of contacts (both information and technology-related) within the Asia-Pacific region and to gain a clearer picture of the industrial linkages that exist between Taiwan and other APEC member economies, then this would help significantly to strengthen the integration of Taiwan and other countries in the Asia-Pacific region, thereby helping Taiwanese SMEs to access business opportunities in other APEC member economies, and strengthening the position that Taiwan occupies within the Asia-Pacific region.

(3) Strengthening Inter-firm Collaborative Networks

In today's environment of intense, globalized competition in which access to overseas markets is becoming increasingly limited, it is no longer possible for individual business enterprises to go it alone; firms need to collaborate with other enterprises, working as a team to cope with these new challenges. The development of collaborative networks has a vital role to play in ensuring the survival and growth of Taiwan's industries. Large numbers of Taiwanese enterprises and businesspeople are already investing in developing nations;

Taiwanese firms both in Taiwan and overseas can leverage strategic alliances, technology collaboration and cross-investment to strengthen their collaborative relationships with local partners and develop new business opportunities in the Asia-Pacific region.

2. Government Assistance Measures

Given the trend towards regional economic integration, the government will need to help SMEs to become more competitive.

(1) Active Participation in Relevant Organizations and the Development of an International Mindset

Taiwan's diplomatic isolation has made it impossible for Taiwan to fully participate in many international economic and trade organizations and agreements. Taiwan should take full advantage of its membership of the WTO and APEC to exert greater influence on the international community. Taiwan's successful experience in SME development has already become a benchmark for other APEC member economies, which has helped to give Taiwan a voice in the international community and won Taiwan respect and new opportunities for international collaboration. Playing an active role in WTO and APEC not only helps Taiwan to keep pace with international developments while laying the foundations for securing membership of other international organizations in the future, but it also constitutes the most direct method whereby the government can help Taiwanese enterprises to develop regional markets.

(2) Formulating Strategies for Leveraging the Intra-regional Division of Labor

Except in Taiwan's economic relationship with China, for the most part the division of labor between Taiwan and other countries is a horizontal one. The aspects of the industry value chain that enterprises need to focus on improving thus vary depending on the exact form taken by the division of labor; the government needs to bear this in mind when formulating its industrial development strategy. With respect to those industries in which China enjoys a competitive advantage, Taiwan should focus on developing key technologies, and encourage Taiwanese enterprises to undertake ongoing R&D and innovation or differentiate themselves by focusing on high-value-added products, while at the same time working to build a comprehensive industry supply chain and maintain their leading position. With regard to Taiwan's economic links with regions other than China, the government should be helping Taiwanese firms to build up their own brands and expand their market efforts, or assist with the development of a global division of labor, helping Taiwan's SMEs to position themselves appropriately (and differentiate themselves) in the regional markets in question. Only then will it be possible for Taiwanese firms to maintain their market share and fend off

the competition from new entrants.

(3) Providing Region-specific Information about Relevant Industries and Risk Appraisal Assistance

The government should provide SMEs with information about business risk and with business matching opportunities, helping SMEs to evaluate the level of risk attendant on investment in particular regional economies. If SMEs are properly prepared, then the danger of experiencing operational difficulties (or even failure) because of inadequate information can be avoided. Government support in this regard can prevent the emergence of a situation in which Taiwanese SMEs invest only in those markets that they are familiar with because of asymmetrical access to information, resulting in excessive concentration of investment in a handful of markets and making it impossible to spread risk properly.

As the process of regional economic integration intensifies, the increased attention that Taiwan is starting to pay to the Greater China economic zone, the East Asia economic zone and the wider Asia-Pacific region represents the beginnings of a new global strategy for Taiwan in the 21st century. Given the global trend towards the formation of regional economic groupings, this is an inevitable trend. For Taiwan's SMEs to be able to build new competitive advantage within the region and make full use of their strengths, Taiwan will need to work actively to improve cross-strait relations with China, undertake ongoing monitoring of political and economic developments in the Asia-Pacific region, and strengthen cultural and social exchange between Taiwan and the other Asia-Pacific economies.

Chapter 8

Helping SMEs to Cope with the Challenges Posed by a Low-carbon Economy

On June 5, 2008, the Executive Yuan approved the Sustainable Energy Policy Guidelines, which set the following new targets for energy conservation: (1) Energy intensity: Over the period 2008 – 2015, the efficiency of energy use in Taiwan will be raised by at least 2% per annum, so that, compared to the 2005 level, overall energy intensity will have fallen by at least 20% by 2015, and by at least 50% by 2025. (2) Carbon dioxide emissions: Taiwan's carbon dioxide emissions will be brought down to the 2008 level by 2016 – 2020, and down to the 2000 level by 2025.

The Kyoto Protocol, approved by the signatory nations of the United Nations Framework Convention on Climate Change, came into effect on February 16, 2005. The Kyoto Protocol requires the Annex One countries (i.e., the developed nations) to bring their overall greenhouse gas emissions down to a level at least 5% below that of 1990 by 2008 – 2012.

Greenhouse gas emissions are a global problem; an increase (or decrease) in emissions by any given country will affect the overall level of global emissions. Taiwan's energy intensity (energy consumption divided by real GDP) and carbon dioxide emissions coefficient (carbon dioxide emission volume divided by real GDP) are both lower than the global average; however, they are still high by developed country standards. Taiwan is not a signatory of the UN Framework Convention on Climate Change, but even so it cannot ignore the need to reduce carbon dioxide emissions.

Greenhouse gases derive mainly from the burning of fossil fuels, so energy saving has a key role to play in carbon reduction. Energy is an important production factor for most industries; this means that measures taken to reduce energy consumption will inevitably lead to increased production costs for many industries. At the same time, however, carbon reduction may also offer new business opportunities. Currently, Taiwan has yet to succeed in breaking the link between economic growth and increased carbon dioxide emissions. Any serious attempt to reduce emissions will have a pronounced impact on the international competitiveness of Taiwan's industries. As energy intensity and carbon dioxide emissions

volumes vary from industry to industry, the impact of low-carbon policies will also vary depending on the industry. Furthermore, different carbon reduction measures may impose different costs, and create different business opportunities. In light of the above, this chapter addresses the following key issues:

1. The relationship between energy inputs and SME operating costs.
2. The potential impact of a carbon reduction policy on SMEs' production costs and competitiveness.
3. The question of whether a carbon reduction policy can create new business opportunities for SMEs.
4. The adjustments that SMEs will need to make, and the strategies that they should adopt, when faced with new energy conservation and carbon reduction regulations.

Before going to the main issues, this chapter starts by examining Taiwan's status on energy consumption and carbon dioxide emissions as well as policies with regard to energy conservation and carbon reduction.

I Taiwanese Industry's Energy Consumption and Carbon Dioxide Emissions and Policies to Reduce Them

1. Taiwan's Energy Consumption

Over the period 1994 – 2007, Taiwan's annual energy consumption grew at an average rate of 5.23% per annum (based on calculations using kl oil equivalent as the unit of energy consumption). As of 2007, manufacturing industry's share of Taiwan's total national energy consumption stood at 51.7%, with the service sector accounting for another 10.1%. The manufacturing sector's energy intensity was 17.96 kl oil equivalent per NT\$1,000, far higher

Table 8-1-1 Taiwan's Energy Consumption (by sector)

Energy Consumption Sector	1992		1997		2002		2007	
	Thousand kl Oil Equivalent	%						
Energy sector (own use)	5,074	8.9	7,767	10.5	9,411	9.2	10,486	8.7
Manufacturing sector	27,493	48.3	34,466	46.4	49,538	48.6	62,631	51.7
Transportation sector	9,909	17.4	13,099	17.6	15,171	14.9	15,899	13.1
Agricultural sector	1,376	2.4	1,441	1.9	1,523	1.5	1,082	0.9
Service sector	3,423	6.0	4,649	6.3	10,186	10.0	12,171	10.1
Residential sector	6,938	12.2	9,150	12.3	12,050	11.8	13,569	11.2
Non-energy consumption	2,720	4.8	3,643	4.9	3,993	3.9	5,191	4.3
Total	56,932	100.0	74,216	100.0	101,872	100.0	121,029	100.0

Source: Bureau of Energy, Ministry of Economic Affairs.

than the corresponding figures for the commercial and agricultural sectors. Energy-intensive industries (such as the pulp, paper and paper products industry, the chemical materials industry, the non-metal mineral products industry, and the basic metals industry) accounted for just 3.17% of Taiwan's GDP, but their share of total national energy consumption stood at 35.35%. The energy-intensive industries' share of GDP fell steadily over the period 1992 – 2007, but during this same period their share of national energy consumption continued to rise (Tables 8-1-1, 8-1-2 and 8-1-3).

Table 8-1-2 Energy Consumption and Energy Intensity by Sector in 2006 and 2007

Sector	Item	Unit	2006	2007
Agricultural sector	Energy consumption	Kl oil equivalent	1,279.31	1,071.26
	Contribution to GDP	NT\$ millions	179,002	175,604
	Energy intensity	Kl oil equivalent per NT\$1,000 of GDP	7.15	6.1
Manufacturing sector	Energy consumption	Kl oil equivalent	59,892.02	64,600.53
	Contribution to GDP	NT\$ millions	3,259,644	3,596,817
	Energy intensity	Kl oil equivalent per NT\$1,000 of GDP	18.37	17.96
Commercial sector	Energy consumption	Kl oil equivalent	6,803.84	6,808.21
	Contribution to GDP	NT\$ millions	2,319,836	2,437,503
	Energy intensity	Kl oil equivalent per NT\$1,000 of GDP	2.93	2.79

Note: GDP is calculated in 1996 dollars.

Source: *Monthly Energy Statistics*, December 2006 and December 2007.

Table 8-1-3 Energy-intensive Industries' Share of Energy Consumption and of GDP

Year	Energy-intensive Industries' Energy Consumption		Energy-intensive Industries' Contribution to Real GDP		Energy-intensive Industries' Energy Intensity
	Energy Consumption (kl oil equivalent)	Share of Total Domestic Energy Consumption (%)	Contribution to Real GDP (NT\$ millions) (2001 dollars)	Share of Real GDP (%)	Energy Intensity (kl oil equivalent / NT\$1,000 of GDP)
1992	17,320	30.42	235,885	3.79	73.42
1997	21,487	28.95	320,710	3.72	67.00
2002	32,502	31.91	382,143	3.70	85.05
2007	42,779	35.35	415,266	3.17	103.02

Note: The energy-intensive industries include the pulp, paper and paper products manufacturing industry, the chemical materials manufacturing industry, the non-metal mineral products manufacturing industry, and the basic metals industry.

Source: Bureau of Energy, Ministry of Economic Affairs.

2. Taiwan's Carbon Dioxide Emissions

In 2006, Taiwan's carbon dioxide emissions coefficient was 0.69 kilos / US\$1,000 of GDP (in 2000 dollars), lower than the global average of 0.74 kilos / US\$1,000, but higher than the coefficients for developed nations such as Japan (0.24 kilos / US\$1,000) and the U.S. (0.51 kilos / US\$1,000). The manufacturing sector accounted for the largest share of Taiwan's carbon dioxide emissions; within the manufacturing sector, the chemical industry and basic metals industry were the biggest contributors to carbon dioxide emissions (Table 8-1-4).

Table 8-1-4 Carbon Dioxide Emissions (by sector)

Unit: thousand tons of carbon dioxide

Year	Energy Sector	Manufacturing Sector	Transportation Sector	Commercial Sector	Residential Sector	Agricultural Sector	Other Sectors	Total	Average Emissions per Person (tons / person)	Carbon Dioxide Emission Coefficient (kilos of carbon dioxide / NT\$ of GDP)
1987	7,999	43,522	14,098	2,005	8,458	3,344	5,874	85,301	4.36	0.0259
1992	8,636	66,121	24,034	5,220	14,136	3,476	7,754	129,376	6.26	0.0235
1997	11,985	89,301	30,571	8,913	20,597	3,717	11,255	176,339	8.17	0.0205
2002	15,233	116,906	34,872	13,534	27,699	3,947	15,155	227,345	10.15	0.0223
2006	18,250	139,368	37,976	16,805	32,157	3,287	17,430	265,273	11.66	0.0228

Note: The totals for each sector include that sector's share of carbon dioxide emissions created through electricity generation.
Source: Energy and Environment Research Laboratories, Industrial Technology Research Institute, October 2007.

3. Taiwan's New Energy Conservation and Carbon Reduction Policies

According to the Executive Yuan's *Sustainable Energy Policy Guidelines*, the government's main policies in the area of energy conservation and carbon reduction are as follows:

(1) Energy Pricing

- a. The price of oil and the price of electricity will, in the near future, be made to reflect the full cost of imported fuel.
- b. Over the medium and long term, the government will be seeking to introduce a new "Energy and Environment Tax," which will reflect, in a progressive manner, the impact of energy consumption on carbon dioxide emissions.

(2) Raising Taiwan's Energy-saving and Carbon Reduction Standards

- a. Establishment of more rigorous energy conservation standards for new cars, improving the energy efficiency of home appliances, and promoting new energy-saving building exterior and air conditioning system designs; effective regulation to bring about waste reduction in the construction industry, and increased use of recyclable building materials in public construction projects.
- b. Reducing carbon emission coefficients in industry and the promoting of a reorientation of Taiwan's industrial structure towards high-value-added and low-energy-consumption industries, so that Taiwan's carbon dioxide emission intensity per unit of production value can be cut by at least 30% by 2025; encouraging SMEs to adopt clean production methods.

(3) Strengthening Business Enterprises' Energy Management and Emissions' Management

- a. Strengthening energy use auditing and reporting, and improving the training of enterprises' internal energy saving and carbon reduction management personnel.

- b. Promotion of greenhouse gas emission inventory-taking, verification and recording.
- c. Promotion of waste recycling.
- (4) Provision of Subsidies for the Promotion of Electricity Generating Equipment that Uses Renewable Energy through the Draft Statute for Renewable Energy Development
- (5) Provision of Subsidies for the Purchase of Energy-saving Home Appliances
- (6) Provision of Subsidies for Energy Technology R&D
- (7) Encouraging Business Enterprises to Undertake Voluntary Carbon Dioxide Emission Reduction and Develop Emissions Trading, through the Draft Greenhouse Gas Reduction Law

II The Impact of the Government's New Energy-saving and Carbon Reduction Measures on Taiwan's SMEs

This section uses questionnaire survey results to analyze the impact of the government's energy-saving and carbon reduction measures on Taiwan's SMEs. The survey population was derived from the 2008 *Taiwan and Fukien Regions Corporate Enterprises Survey* (compiled by the Ministry of Economic Affairs) and the 2006 *Taiwan Business Directory* (compiled by China Credit Information Service). The total survey population included just over 1.2 million SMEs, of which 0.87% were in the agricultural sector, 18.75% were in the industrial sector (including both manufacturing and non-manufacturing industries), and 80.38% were in the service sector (Table 8-2-1).

Table 8-2-1 Questionnaire Survey Population

Sector	No. of SMEs in the Population	Share of Total
All Sectors	1,236,586	100.00
Agriculture, forestry, fisheries and animal husbandry	10,784	0.87
Service sector	993,949	80.38
Manufacturing sector	133,312	10.78
Non-manufacturing industry sector	98,541	7.97

Source: *White Paper on Small and Medium Enterprises in Taiwan, 2008 edition*.

The survey used stratified sampling, with two strata. As energy intensity and carbon dioxide emission volume vary from industry to industry, and as the impact of the government's low-carbon policies will also vary between industries, the first stratum divided enterprises into four sectors – agriculture, forestry, fisheries and animal husbandry, manufacturing, non-manufacturing industries, and the service sector – while the second stratum grouped enterprises by the region in which they are located: Northern Taiwan,

Central Taiwan, Southern Taiwan and Eastern Taiwan (the agriculture, forestry, fisheries and animal husbandry sector and the non-manufacturing industries sector were not broken down by region). The survey was implemented over the period April 15–30, 2009. The results included 18 valid SME observations from the agriculture, forestry, fisheries and animal husbandry sector, 145 from the manufacturing sector, 42 from the non-manufacturing industries sector, and 199 from the service sector. The overall sample size was thus 404 SMEs, of which 80% were enterprises with fewer than 30 employees (Table 8-2-2). One point worth noting is that industrial firms' share of the sample, at 46.29%, was significantly higher than their share of the population (18.75%), while service sector firms' share, at 49.25%, was lower than their share of the population (80.38%).

Table 8-2-2 Sample Structure

	Region	No. of Enterprises (by no. of employees)						Share of Total Sample Held by Enterprises of Different Sizes					
		Less than 5	5 – 29	30 – 49	50 – 99	100 – 200	Total	Less than 5	5 – 29	30 – 49	50 – 99	100 – 200	Total
Agriculture, forestry, fisheries and animal husbandry	All regions	10	8	0	0	0	18	55.56	44.44	0.00	0.00	0.00	100
	Northern	16	51	7	2	2	78	0.21	0.65	0.09	0.03	0.03	100
Service sector	Central	16	22	4	1	0	43	0.37	0.51	0.09	0.02	0.00	100
	Southern	9	36	4	4	0	53	0.17	0.68	0.08	0.08	0.00	100
	Eastern	7	15	3	0	0	25	0.28	0.60	0.12	0.00	0.00	100
Manufacturing sector	Northern	6	20	7	9	6	48	0.13	0.42	0.15	0.19	0.13	100
	Central	10	24	4	6	3	47	0.21	0.51	0.09	0.13	0.06	100
	Southern	9	28	6	3	1	47	0.19	0.60	0.13	0.06	0.02	100
Non-manufacturing industries	Eastern	0	1	2	0	0	3	0.00	0.33	0.67	0.00	0.00	100
	All regions	9	27	3	1	2	42	21.43	64.29	7.14	2.38	4.76	100
Total		92	232	40	26	14	404	22.77	57.43	9.90	6.44	3.47	100

Note: For the purposes of this table, Northern Taiwan includes Taipei, Taoyuan, Hsinchu and Miaoli; Central Taiwan includes Taichung, Nantou, Changhua and Yunlin; Southern Taiwan includes Chiayi, Tainan, Kaohsiung and Pingtung; Eastern Taiwan includes Ilan, Hualien and Taitung.

Source: Hui-Lin Wu and Bee Chen (2009), *Helping SMEs to Cope with the Challenges Posed by a Low-carbon Economy*.

The energy conservation and carbon reduction measures that the government plans to adopt can be divided into five broad categories:

1. Energy price adjustment and the Energy and Environment Tax.
2. Energy conservation standards and carbon dioxide emission standards.
3. Regulation of energy management and carbon dioxide emissions.
4. Subsidies for the purchase of renewable energy equipment and for energy technology R&D.
5. Voluntary carbon dioxide emission reduction and emissions trading by business enterprises.

The questionnaire survey asked firms to estimate the impact of these measures on their

operating costs, to say whether they felt the measures might help to create new business opportunities, and to suggest what steps SMEs should take in response to the new measures.

Different policy measures may result in different levels of carbon reduction costs, and create different types of business opportunities. The questionnaire therefore also asked the following questions:

SMEs were asked to say which of the five broad categories of energy conservation and carbon reduction measures listed above would have the most pronounced impact on their operating costs, and which had the most potential to create new business opportunities.

The survey results are examined below:

1. SMEs' Understanding of the Government's Energy Conservation and Carbon Reduction Policy

During the period in which the questionnaire survey was implemented, the draft *Statute for Renewable Energy* and the draft *Greenhouse Gas Reduction Law* had already entered the legislative process, and planning was already underway for the establishment of the new Energy Tax.

The questionnaire asked SMEs whether they were aware of these developments. The survey results showed that over 60% of respondent firms were not aware that the government was working on a *Statute for Renewable Energy*, and nearly 70% were unaware of the existence of the draft *Greenhouse Gas Reduction Law*. Furthermore, almost 80% of respondent firms did not know that the government was planning to establish a new Energy Tax. These data show that the majority of SMEs do not have a clear understanding of the government's new policies regarding energy conservation and carbon reduction.

2. The Impact of Energy Pricing and Energy Taxes

(1) Energy Costs

The share of total operating costs that energy accounts for can affect an enterprise's price flexibility with respect to energy demand. In an era of high oil prices, it can also affect a firm's earnings and competitiveness.

52.97% of the firms included in the survey reported that, in the previous year, their energy costs (including electricity costs) had accounted for less than 5% of total operating costs; for 25%, the figure was 5 – 10% of total operating costs, and for 13.61% it was 10 – 15%. Only 8.42% of firms reported that energy costs accounted for over 15% of total operating costs (Table 8-2-3).

Table 8-2-3 Energy Costs' Share of Total Operating Costs in 2008

Units: enterprises; %

Energy Costs' Share of Total Operating Costs	All Sectors	Agriculture, Forestry, Fisheries and Animal Husbandry	Manufacturing	Non-manufacturing Industries	Service Sector
Total sample size	404	18	145	42	199
15% or higher	8.42	0.00	10.34	16.67	6.03
10% - 15%	13.61	11.11	13.10	14.29	14.07
5% - 10%	25.00	33.33	23.45	21.43	26.13
Under 5%	52.97	55.56	53.10	47.62	53.77

Source: See Table 8-2-2.

These data reflect the fact that, due to the small size of SMEs (under 30 employees in most cases), electricity costs account for the largest share of energy costs for both manufacturing and service sector firms, and the share of total operating costs held by energy costs is relatively low. Even so, over one-fifth of SMEs reported that their energy costs exceeded 10% of total operating costs.

(2) The Impact of Rising Oil and Electricity Prices

Oil prices began to rise again in June 2008. Most SMEs reported that this increase had not had too serious an effect on their operating costs; 33.42% said that there had been no change, and 37.62% said that their operating costs had increased only slightly. However, 13.6% of SMEs reported that rising oil prices had led to a significant increase in operating costs. The situation in the non-manufacturing industries sector was rather unusual; here, both the percentage of firms reporting a significant increase in operating costs and the percentage reporting a fall in operating costs were high compared to other sectors (Table 8-2-4).

Table 8-2-4 The Impact of the Renewed Rise in Oil Prices in June 2008 on Operating Costs

Units: enterprises; %

Item	All Sectors	Agriculture, Forestry, Fisheries and Animal Husbandry	Manufacturing	Non-manufacturing Industries	Service Sector
Total sample size	404	18	145	42	199
Significant increase in operating costs	13.61	22.22	11.03	26.19	12.06
Slight increase in operating costs	37.62	38.89	44.83	16.67	36.68
No change in operating costs	33.42	27.78	32.41	26.19	36.18
Slight fall in operating costs	12.87	5.56	11.03	19.05	13.57
Significant fall in operating costs	2.48	5.56	0.69	11.90	1.51

Source: See Table 8-2-2.

Electricity prices rose by an average of 12.6% in July 2008, and again in October, for an overall increase of 25.2%. At the same time, Taiwan Power introduced a new discount scheme for users that implemented energy-saving measures. 50.25% of SMEs reported that their operating costs had increased slightly because of these electricity price hikes, and 14.11% reported a substantial rise; 26.49% said that there had been no change. The percentage of SMEs reporting an increase in operating costs was highest in the

manufacturing sector, and lowest in the non-manufacturing industries sector (Table 8-2-5).

Table 8-2-5 The Impact of the Electricity Price Rises in July and October 2008 on Operating Costs

Units: enterprises; %

Item	All Sectors	Agriculture, Forestry, Fisheries and Animal Husbandry	Manufacturing	Non-manufacturing Industries	Service Sector
Total sample size	404	18	145	42	199
Significant increase in operating costs	14.11	11.11	20.00	9.52	11.06
Slight increase in operating costs	50.25	50.00	53.10	45.24	49.25
No change in operating costs	26.49	27.78	19.31	33.33	30.15
Slight fall in operating costs	6.68	11.11	4.83	4.76	8.04
Significant fall in operating costs	2.48	0.00	2.76	7.14	1.51

Source: See Table 8-2-2.

(3) The Potential Impact of the Energy and Environment Tax

Assuming that, in the future, the government introduces a new energy tax, but also reduces the rate of business income tax, will this be beneficial or harmful to SMEs? The survey results showed that 42.32% of firms anticipated that the change would benefit them, while 31.44% expected it to have a negative impact; 26.24% anticipated that it would not affect them. The manufacturing sector and the agricultural sector had a higher share of firms that expected the change to impact them negatively; the non-manufacturing industries sector and service sector had a higher share of firms expecting that the change would benefit them (Table 8-2-6).

Table 8-2-6 The Anticipated Impact on SMEs of the Introduction of a New Energy Tax Combined with a Reduction in the Business Income Tax Rate

Units: enterprises; %

Anticipated Impact	All Sectors	Agriculture, Forestry, Fisheries and Animal Husbandry	Manufacturing	Non-manufacturing Industries	Service Sector
Total sample size	404	18	145	42	199
Significant positive impact	4.70	0.00	4.14	7.14	5.03
Slight positive impact	37.62	27.78	31.72	42.86	41.71
No impact	26.24	33.33	22.76	28.57	27.64
Slight negative impact	25.25	33.33	33.10	11.90	21.61
Significant negative impact	6.19	5.56	8.28	9.52	4.02

Source: See Table 8-2-2.

(4) How Will SMEs Respond to the Changes?

If electricity prices continue to rise, the price of oil continues to fluctuate, and the government introduces a new energy tax, how will SMEs respond to these changes?

As regards cost control measures, SMEs in the manufacturing sector and non-manufacturing industries sector appeared to have a greater preference for modifying production processes or other operational processes; firms in the service sector were more

likely to be thinking in terms of reducing their electricity consumption. The manufacturing sector had the highest share of SMEs that were planning to raise prices in response to the changes (Table 8-2-7).

Overall, it appears that, in responding to the changes outlined above, SMEs will be concentrating on cost control. By and large, SMEs appear not to believe that they have the capabilities necessary to take advantage of the changes to develop new business opportunities.

Table 8-2-7 The Strategies That SMEs Intend to Adopt in Response to Changing Energy Prices

Units: enterprises; %

Response Strategy	All Sectors	Agriculture, Forestry, Fisheries and Animal Husbandry	Manufacturing	Non-manufacturing Industries	Service Sector
Total sample size	404	18	145	42	199
Reduce electricity consumption	24.01	38.89	17.24	14.29	29.65
Reduce consumption of petroleum products	11.88	27.78	11.72	7.14	11.56
Reduce energy inputs in production processes	5.94	5.56	6.90	2.38	6.03
Switch over to energy-saving production equipment	21.53	33.33	24.14	23.81	18.09
Switch over to energy-saving transportation vehicles	11.14	22.22	5.52	21.43	12.06
Modify production processes or other operational processes	16.83	11.11	22.76	21.43	12.06
Adjust product prices	10.64	5.56	15.86	2.38	9.05
Invest in energy-saving technology or renewable energy	2.97	0.00	3.45	4.76	2.51
Develop energy conservation services	4.46	5.56	2.07	11.90	4.52
Take no action	19.06	5.56	18.62	19.05	20.60
Wind up the business	1.49	0.00	2.07	2.38	1.01
Other	1.73	0.00	0.69	4.76	2.01

Source: See Table 8-2-2.

3. The Impact of New Energy Conservation Standards and Emissions Standards

According to the *Sustainable Energy Policy Guidelines*, the main methods used to strengthen Taiwan's energy conservation standards and carbon dioxide emissions standards will be as follows:

- (1) Starting in 2009, the government will be seeking to reduce carbon dioxide emissions density in the manufacturing sector by 2% per annum.
- (2) Attempts will be made to improve the energy use efficiency of the most energy-hungry types of production equipment; this will involve the setting of new energy consumption standards to enhance the energy use efficiency of production equipment.
- (3) It is anticipated that the energy efficiency standards for cars and motorcycles will be raised by 10% in 2009, and by a further 25% in 2015.

- (4) In 2009, the “Green Building” section of the Building Design and Construction chapter of the Construction Technology Standards will be revised. Major development projects will be required to conform to the Green Building standards, and new standards and regulations will be introduced with respect to energy-saving air conditioning systems for new buildings.
- (5) When existing buildings are demolished, the firms undertaking this work will be required to implement on-site waste sorting, so as to reduce the quantity of waste produced and facilitate repurposing and recycling.
- (6) By 2011, the energy efficiency standards for all types of electrical appliance will have been raised by between 10% and 70% compared to the current levels; 2015 will see a further tightening of these standards.
- (7) Traditional lighting equipment will be replaced by more efficient products that provide energy savings of 20 – 90%. This will involve the wholesale replacement of all traditional light-bulbs currently in use in government agencies and schools. The government will help market stallholders to replace their light fittings, and will provide guidance to encourage a voluntary shift to energy-efficiency lighting equipment (including the provision of assistance to hospitals, hotels and department stores to make this change).

What impact will these new regulations have on SMEs’ operating costs? Will they create any new business opportunities for SMEs? How will SMEs respond to the new measures?

(1) The Potential Impact on SMEs’ Operating Costs

54.21% of respondent firms anticipated that more rigorous energy conservation standards would lead to a slight increase in their operating costs, 11.63% expected to see a significant increase, and 28.71% felt that their operating costs would not be affected. The manufacturing sector had the highest share of firms expecting to see an increase in operating costs; the non-manufacturing industries sector had the lowest share (Table 8-2-8).

So which category of energy conservation standard or emissions standard did SMEs feel was most likely to lead to increased operating costs? 49.62% of SMEs believed that it would be production equipment energy conservation standards, and 48.87% felt that it would be transportation vehicle energy conservation standards. SMEs in the manufacturing sector were most concerned about the possible impact of production equipment energy conservation standards, while firms in the service sector were most concerned about transportation vehicle energy conservation standards (Table 8-2-9).

Table 8-2-8 The Potential Impact of More Rigorous Energy Conservation Standards and Emissions Standards on Operating Costs

Units: enterprises; %

Item	All Sectors	Agriculture, Forestry, Fisheries and Animal Husbandry	Manufacturing	Non-manufacturing Industries	Service Sector
Total sample size	404	18	145	42	199
Anticipating a significant increase in operating costs	11.63	16.67	11.72	16.67	10.05
Anticipating a slight increase in operating costs	54.21	50.00	62.07	40.48	51.76
Anticipating no change in operating costs	28.71	27.78	23.45	35.71	31.16
Anticipating a slight fall in operating costs	4.70	5.56	2.07	7.14	6.03
Anticipating a significant fall in operating costs	0.74	0.00	0.69	0.00	1.01

Source: See Table 8-2-2.

Table 8-2-9 The Energy Conservation or Emissions Standards That SMEs Consider Most Likely to Result in Increased Operating Costs

Unit: enterprises; %

Standard Type	All Sectors	Agriculture, Forestry, Fisheries and Animal Husbandry	Manufacturing	Non-manufacturing Industries	Service Sector
Total sample size	266	12	107	24	123
Production equipment energy conservation standards	49.62	50.00	75.70	50.00	26.83
Office equipment energy conservation standards	22.18	25.00	19.63	20.83	24.39
Transportation vehicle energy conservation standards	48.87	75.00	34.58	66.67	55.28
Lighting equipment energy conservation standards	31.95	50.00	25.23	33.33	35.77
Home appliance energy conservation standards	16.92	8.33	6.54	33.33	23.58
New building energy conservation standards	9.02	16.67	8.41	20.83	6.50
Carbon dioxide emissions intensity standards	14.29	8.33	17.76	29.17	8.94

Note: More than one answer can be chosen.

Source: See Table 8-2-2.

(2) Potential Business Opportunities

Only 8.41% of SMEs believed that the introduction of new energy conservation standards would lead to an increase in their annual revenue; around 50% anticipated that the introduction of the new standards would have no effect on their sales revenue (Table 8-2-10).

38.61% of SMEs anticipated that the introduction of new energy conservation standards would lead to a decrease in business opportunities; in the manufacturing sector, the percentage was even higher, at 47.59%. This may be related to the fact that suppliers of components for high-energy-consumption products will experience a shift or fall in demand; in addition, some SMEs may feel that they will be unable to conform to the new energy-saving standards, and so will experience a fall in sales.

Table 8-2-10 The Anticipated Impact of New Energy Conservation Standards and Emissions Standards on Business Opportunities

Source: units; %

Item	All Sectors	Agriculture, Forestry, Fisheries and Animal Husbandry	Manufacturing	Non-manufacturing Industries	Service Sector
Total sample size	404	18	145	42	199
Significant increase in business opportunities	1.98	0.00	1.38	2.38	2.51
Slight increase in business opportunities	7.43	5.56	6.90	2.38	9.05
No change	51.98	61.11	44.14	57.14	55.78
Slight fall in business opportunities	32.92	27.78	42.07	26.19	28.14
Significant fall in business opportunities	5.69	5.56	5.52	11.90	4.52

Source: See Table 8-2-2.

(3) The Strategies That SMEs Plan to Adopt in Response

How do SMEs plan to respond to the introduction of new energy conservation and emissions standards?

The largest group of SMEs (21.29% of the total) included those that planned to take no action. Some SMEs planned to collaborate with the introduction of the new standards, for example by enhancing the level of energy-saving technology used in their products, or by improving the energy-saving performance of their production equipment. On the cost control side, some SMEs planned to improve their production procedures and other operational procedures, delay the replacement of old equipment, or make adjustments to product functions. Other firms planned to raise prices, so as to transfer the cost of compliance to others (this was a particularly common strategy choice in the manufacturing sector). Finally,

Table 8-2-11 The Strategies That SMEs Intend to Adopt in Response to the Introduction of New Energy Conservation and Emissions Standards

Units: enterprises; %

Item	All Sectors	Agriculture, Forestry, Fisheries and Animal Husbandry	Manufacturing	Non-manufacturing Industry	Service Sector
Total sample size	404	18	145	42	199
Enhance the energy-saving technology level of the firm's products	17.57	11.11	19.31	11.90	18.09
Modify product functions	5.20	0.00	2.07	7.14	7.54
Improve the energy efficiency of the firm's production equipment	13.86	5.56	12.41	26.19	13.07
Delay replacement of old equipment	15.59	16.67	18.62	11.90	14.07
Modify production processes or other operational processes	17.82	33.33	25.52	9.52	12.56
Adjust product prices	16.34	22.22	21.38	11.90	13.07
Invest in energy-saving technology R&D or renewable energy	3.47	5.56	2.76	4.76	3.52
Develop energy conservation services	10.64	11.11	4.83	9.52	15.08
Take no action	21.29	16.67	14.48	21.43	26.63

Note: More than one answer can be chosen.

Source: See Table 8-2-2.

some SMEs were hoping to be able to develop new business areas, for example by developing energy conservation services, or by investing in energy-saving technology R&D or renewable energy sources (Table 8-2-11).

4. The Impact of New Energy Management and Emissions Management Regulations

According to the *Sustainable Energy Policy Guidelines*, the government's main policies with respect to strengthening energy management and emissions management are as follows:

- (1) Promotion of greenhouse gas emission inventory-taking, verification and recording; following up the changes in the emissions density of key manufacturers; requiring firms whose emissions intensity rises to submit annual improvement plans.
- (2) Promoting disclosure of product carbon levels at each stage of the supply chain.
- (3) Providing SMEs with energy conservation and carbon reduction production process technology guidance (covering production criteria, energy-efficient operating methods, etc.), and organizing lectures and manager training with regard to energy conservation and carbon reduction measures.
- (4) The government will be commissioning "business technology service teams" to provide energy-saving technology diagnostics service to individual firms, with a view to encouraging 600,000 businesses (including convenience stores, fast-food restaurants, discount and chain stores, traditional markets, and food courts) to use air conditioning responsibly and to implement careful planning of lighting fixtures (including neon signage).

What impact will the new energy management and emissions management regulations have on SMEs' operating costs? Will they create any new business opportunities for SMEs? How will SMEs respond to the new regulations?

(1) The Potential Impact of the New Regulations on Operating Costs

54.46% of respondent firms anticipated that the new energy management and emissions management regulations would lead to a slight rise in their operating costs, while 7.92% expected to see a significant rise in operating costs; 30.69% of SMEs believed that the new regulations would not affect their operating costs. Firms in the non-manufacturing industries sector were most likely to anticipate a significant rise in operating costs (Table 8-2-12).

As to which energy management or emissions management regulations SMEs felt were most likely to result in increased operating costs, 55.56% of SMEs believed that regulations relating to the employment and training of energy conservation and carbon reduction

management personnel were most likely to lead to an increase in operating costs, followed by regulations relating to energy use auditing and reporting (34.52% of firms) (Table 8-2-13).

Table 8-2-12 The Anticipated Impact of the New Energy Management and Emissions Management Regulations on SMEs' Operating Costs

Unit: enterprises; %

Item	All Sectors	Agriculture, Forestry, Fisheries and Animal Husbandry	Manufacturing	Non-manufacturing Industries	Service Sector
Total sample size	404	18	145	42	199
Anticipating a significant rise in operating costs	7.92	5.56	6.90	23.81	5.53
Anticipating a slight rise in operating costs	54.46	55.56	62.07	38.10	52.26
Anticipating no change in operating costs	30.69	33.33	24.14	33.33	34.67
Anticipating a slight fall in operating costs	5.94	5.56	6.90	0.00	6.53
Anticipating a significant fall in operating costs	0.99	0.00	0.00	4.76	1.01

Source: See Table 8-2-2.

Table 8-2-13 The Energy Management or Emissions Management Measures That SMEs Believe Are Most Likely to Result in Increased Operating Costs

Units: enterprises; %

Item	All Sectors	Agriculture, Forestry, Fisheries and Animal Husbandry	Manufacturing	Non-manufacturing Industries	Service Sector
Total sample size	252	11	100	26	115
Energy use auditing and reporting	34.52	36.36	33.00	46.15	33.04
Greenhouse gas inventories and recording	27.38	27.27	25.00	30.77	28.70
Carbon content disclosure for each stage in production	24.21	0.00	30.00	26.92	20.87
Submission and implementation of annual improvement plans by firms whose emissions intensity rises	25.00	9.09	30.00	42.31	18.26
Recruitment and training of energy conservation and carbon reduction management personnel	55.56	63.64	60.00	61.54	49.57

Note: More than one answer can be chosen.

Source: See Table 8-2-2.

In reality, as things stand at present the *Energy Management Law* requirements that firms employ energy management personnel and implement energy use auditing and reporting will apply only to large enterprises; the vast majority of SMEs will not be affected by these requirements. The survey results also revealed that, currently, only 5.69% of firms have dedicated energy management personnel.

The survey results indicated that, although SMEs are not required to appoint dedicated energy management personnel, the aspect of the new regulations that SMEs are most

concerned about is possible government interference in their personnel hiring.

As regards greenhouse gas inventories, carbon content disclosure and carbon dioxide emissions regulations, most SMEs appear to have only a limited understanding of these issues, and as a result only a minority of SMEs expressed concern about their possible impact on operating costs (Table 8-2-13). However, if the “carbon footprint” concept and related systems become more widely adopted in the global economy as a whole, the impact on the operating costs of export-oriented SMEs could be considerable.

(2) Potential Business Opportunities

13.61% of SMEs anticipated that the introduction of new energy management and emissions management regulations would lead to an increase in sales revenue; around 50% believed that their sales revenue would not be affected (Table 8-2-14).

Table 8-2-14 The Anticipated Impact of New Energy Management and Emissions Management Regulations on SMEs’ Sales Revenue

Units: enterprises; %

Item	All Sectors	Agriculture, Forestry, Fisheries and Animal Husbandry	Manufacturing	Non-manufacturing Industries	Service Sector
Total sample size	404	18	145	42	199
Anticipating a significant increase	0.99	0.00	0.00	0.00	2.01
Anticipating a slight increase	12.62	22.22	13.79	7.14	12.06
Anticipating no change	52.48	44.44	44.83	45.24	60.30
Anticipating a slight fall	29.21	33.33	37.93	26.19	23.12
Anticipating a significant fall	4.70	0.00	3.45	21.43	2.51

Source: See Table 8-2-2.

33.91% of SMEs believed that the introduction of new energy management and emissions management regulations would cause their sales revenue to fall; this view is particularly prevalent in the manufacturing sector (41.38% of firms). Some SMEs may feel that they will find it hard to comply with the requirements of the new regulations, and that their operational performance will suffer as a result. Other, export-oriented SMEs may be concerned that the spread of the “carbon footprint” concept in the global economy as a whole may have a negative impact on sales.

As for the minority of SMEs that anticipated that the introduction of the new energy management and emissions management regulations would lead to increased sales revenue, the specific types of regulations that they were most likely to attribute this to were energy use auditing and reporting regulations and regulations governing the employment and training of energy management personnel.

(3) The Strategies that SMEs Plan to Adopt in Response

What steps will SMEs be taking in response to the introduction of new energy management and emissions management regulations?

The most common response was “do what is necessary to meet regulatory requirements” (31.68% of firms). Some SMEs were willing to collaborate more proactively, for example by performing thorough energy use recording and reporting, performing thorough emissions inventories and recording, spending the money needed to hire energy management experts, or spending the money needed to improve production processes and other operational procedures, or to switch over to energy-saving equipment. Other SMEs planned to adjust their product pricing so as to transfer the cost of compliance on to others. Finally, some SMEs planned to take the opportunity to develop energy management services consulting business, or to invest in energy-saving technology R&D or renewable energy (Table 8-2-15).

Table 8-2-15 The Strategies That SMEs Intend to Adopt in Response to the Introduction of New Energy Management and Emissions Management Regulations

Units: enterprises; %

Item	All Sectors	Agriculture, Forestry, Fisheries and Animal Husbandry	Manufacturing	Non-manufacturing Industries	Service Sector
Total sample size	404	18	145	42	199
Perform thorough energy use recording and reporting	16.09	5.56	10.34	23.81	19.60
Perform thorough emissions inventories and recording	11.39	0.00	11.03	14.29	12.06
Spend the money to recruit energy management specialists	8.66	11.11	12.41	14.29	4.52
Spend the money to improve production processes or other operational processes, or to switch over to energy-saving equipment	17.08	11.11	17.24	14.29	18.09
Adjust product pricing	12.13	16.67	12.41	14.29	11.06
Do what is necessary to meet regulatory requirements	31.68	55.56	30.34	16.67	33.67
Develop energy conservation management services consulting business	7.67	11.11	5.52	9.52	8.54
Invest in energy-saving technology R&D or in renewable energy	5.45	0.00	8.97	2.38	4.02
Wind up the business	1.49	0.00	4.14	0.00	0.00
Make no changes	2.48	0.00	1.38	2.38	3.52
Collaborate with energy conservation if the government offers subsidies	0.25	0.00	0.00	0.00	0.50

Note: More than one answer can be chosen.

Source: See Table 8-2-2.

5. The Impact of Renewable Energy Equipment Subsidies and Energy Technology R&D Subsidies

According to the *Sustainable Energy Policy Guidelines*, the government’s measures for

subsidizing the purchase of renewable energy equipment, energy-saving equipment and energy technology R&D include the following:

- (1) Provision of subsidies to SMEs under the Innovative Energy Conservation and Carbon Reduction Technology R&D Plan: provision of incentives to encourage the development of renewable energy and energy-saving technology (including photovoltaics, fuel-cell technology, LED lighting, wind power, etc.)
- (2) Provision of loan guarantees and low-interest loans to companies that purchase energy-saving equipment.
- (3) Promoting the development of energy services companies (ESCOs): Energy services companies that purchase energy-saving equipment before 2011 are eligible to have the interest on loans waived for three years and reduced by two percentage points for a further two years.
- (4) The *Statute for Renewable Energy* is expected to come into law in 2009; this will make provision for government subsidies for the demonstration, promotion and sale of renewable energy equipment, and for electricity generation that uses renewable energy.
- (5) Starting in 2009, the government will be providing subsidies for the purchase of electric cars and scooters; the target is to have 160,000 electric vehicles on the streets by 2012.
- (6) The government will be promoting the use of electric hybrid cars; the fuel tax payable on these cars will be reduced by 50%, and those with an engine capacity of less than 2,000 cc will be exempted from commodity tax.
- (7) A special plan will be initiated to promote the use of LPG hybrid vehicles, with a view to increasing the number of LPG hybrid vehicles (including both taxis and private cars) to 150,000 by 2012.

Will these new subsidies for the purchase of renewable energy equipment, the use of energy-saving equipment and the development of renewable energy technology create new business opportunities for SMEs, or will they have a negative impact? What effect will they have on SMEs' operating costs?

(1) The Potential Impact on SMEs' Business Opportunities

Around 20% of respondent firms anticipated that the new subsidies for the purchase of renewable energy equipment and energy-saving equipment would help to boost their annual sales revenue; 60% believed that their annual revenue would not be affected.

The government's new subsidies – which effectively subsidize the sale of renewable energy equipment – represent a kind of price subsidy. This type of subsidy can help to boost

the competitiveness of a firm receiving the subsidy; it may even enable the firm's products to replace rival products in the market. The survey results showed that 18.31% of SMEs expected the introduction of the new subsidies for the purchase of renewable energy equipment and energy-saving equipment to lead to a fall in their annual sales revenue; this view was particularly prevalent in the manufacturing sector (Table 8-2-16). One reason may be that these enterprises are concerned that their products will be supplanted by other firms' government-subsidized products.

Table 8-2-16 The Anticipated Impact of the New Subsidies for the Purchase of Renewable Energy Equipment and Energy-saving Equipment on SMEs' Sales Revenue

Units: enterprises; %

Item	All Sectors	Agriculture, Forestry, Fisheries and Animal Husbandry	Manufacturing	Non-manufacturing Industries	Service Sector
Total sample size	404	18	145	42	199
Anticipating a significant rise in revenue	1.98	0.00	0.69	0.00	3.52
Anticipating a slight rise in revenue	19.55	16.67	23.45	28.57	15.08
Anticipating no change in revenue	60.15	66.67	54.48	61.90	63.32
Anticipating a slight fall in revenue	15.59	16.67	20.00	4.76	14.57
Anticipating a significant fall in revenue	2.72	0.00	1.38	4.76	3.52

Source: See Table 8-2-2.

As regards the subsidies for energy technology R&D, 20% of respondent firms anticipated that their annual sales revenue would rise as a result of the introduction of these subsidies, 60% anticipated no change, and 18.31% expected to see their revenue fall (Table 8-2-17).

Table 8-2-17 The Anticipated Impact of the New Subsidy for Energy Technology R&D on SMEs' Sales Revenue

Units: enterprises; %

Item	All Sectors	Agriculture, Forestry, Fisheries and Animal Husbandry	Manufacturing	Non-manufacturing Industries	Service Sector
Total sample size	404	18	145	42	199
Enterprises anticipating a significant rise in revenue	1.24	0.00	0.00	2.38	2.01
Enterprises anticipating a slight rise in revenue	18.81	16.67	20.00	19.05	18.09
Enterprises anticipating no change in revenue	63.61	66.67	62.07	71.43	62.81
Enterprises anticipating a slight fall in revenue	14.85	16.67	16.55	7.14	15.08
Enterprises anticipating a significant fall in revenue	1.49	0.00	1.38	0.00	2.01

Source: See Table 8-2-2.

The subsidy for energy technology R&D will be a fixed-value subsidy, not a production- or consumption-based subsidy, so the total amount of the subsidy will not be

directly linked to sales. It is thus fundamentally different in character from the price subsidies discussed above, and would not normally be expected to lead directly to an increase in annual sales revenue. However, the survey results showed that respondent firms expected the impact of the energy technology R&D subsidy on sales revenue to be similar to that of the subsidies for the purchase of renewable energy equipment and energy-saving equipment. Some SMEs will be anticipating that the new energy technology R&D subsidy will help them to develop new products, thereby boosting sales revenue; other firms are worried that the subsidy will help rival firms to develop new products that will displace their products, leading to a fall in sales revenue.

(2) The Potential Impact on SMEs' Operating Costs

31.44% of SMEs believed that the new energy equipment price subsidies would help to reduce their operating costs, while 33.66% anticipated no change.

It is significant that 34.9% of firms expected the new subsidies to lead to a rise in their operating costs (Table 8-2-18). Why should this be the case? Why should government price subsidies for the purchase of energy equipment cause some firms' production costs to rise? One possible explanation is that SMEs are worried that, if Taiwan Power is required to purchase electricity from subsidy-receiving renewable energy companies, it may raise the retail price that it charges for electricity, transferring the cost to electricity consumers. Another possibility is that some SMEs view the energy price subsidies as a kind of energy conservation standard, and believe that their operating costs will rise as a result.

Table 8-2-18 The Anticipated Impact of the Subsidies for the Purchase of Renewable Energy Equipment and Energy-saving Equipment on SMEs' Operating Costs

Units: enterprises; %

Item	All Sectors	Agriculture, Forestry, Fisheries and Animal Husbandry	Manufacturing	Non-manufacturing Industries	Service Sector
Total sample size	404	18	145	42	199
Anticipating a significant rise in operating costs	5.20	5.56	6.21	2.38	5.03
Anticipating a slight rise in operating costs	29.70	33.33	28.97	23.81	31.16
Anticipating no change in operating costs	33.66	33.33	31.03	33.33	35.68
Anticipating a slight fall in operating costs	30.20	27.78	32.41	38.10	27.14
Anticipating a significant fall in operating costs	1.24	0.00	1.38	2.38	1.01

Source: See Table 8-2-2.

14.11% of respondent firms anticipated that their operating costs would fall as a result of the introduction of the new government subsidy for energy technology R&D, and 55.45% expected no change. Surprisingly, 30.45% of firms anticipated that their operating costs

would rise because of the introduction of this subsidy (Table 8-2-19).

Table 8-2-19 The Anticipated Impact of the New Subsidy for Energy Technology R&D on SMEs' Operating Costs

Units: enterprises; %

Item	All Sectors	Agriculture, Forestry, Fisheries and Animal Husbandry	Manufacturing	Non-manufacturing Industries	Service Sector
Total sample size	404	18	145	42	199
Anticipating a significant rise in operating costs	4.46	5.56	2.76	2.38	6.03
Anticipating a slight rise in operating costs	25.99	22.22	31.03	19.05	24.12
Anticipating no change in operating costs	55.45	55.56	53.79	66.67	54.27
Anticipating a slight fall in operating costs	12.87	16.67	11.03	9.52	14.57
Anticipating a significant fall in operating costs	1.24	0.00	1.38	2.38	1.01

Source: See Table 8-2-2.

6. Voluntary Emissions Reduction and Carbon Trading

The government's energy conservation and carbon reduction planning also covers the provision of guidance to encourage business enterprises to implement voluntary greenhouse gas emissions reduction. This will be accompanied by the enactment of the *Greenhouse Gas Reduction Law*, and the establishment of an emissions trading system.

However, the government's efforts to bring about emissions reduction will initially target mainly large enterprises, and there is still considerable uncertainty regarding both the content of, and the timetable for the enactment of, the *Greenhouse Gas Reduction Law*. In the short term at least, SMEs may not need to worry about having to pay emissions charges. For this reason, SMEs were not asked about the impact of this issue, or their anticipated response to it, in the questionnaire survey.

III A Comparison of the Different Energy Conservation and Carbon Reduction Measures

Of the five types of energy conservation and carbon reduction measures considered above (the liberalization of energy prices combined with the introduction of a new energy tax, new energy conservation standards, new energy management regulations, the introduction of new subsidies for energy equipment sales, and emissions reduction measures), which measures will have the biggest negative impact on SMEs' operating costs? And which are most likely to create new business opportunities for Taiwan's SMEs?

1. The Impact on Operating Costs

It can be seen from the survey results presented in the previous section that: (1) Following

the recent electricity price hikes, 64.36% of SMEs have experienced an increase in operating costs, with 14.11% reporting a significant increase. (2) Since oil prices began to rise again, 51.22% of firms have seen a rise in operating costs, with 13.61% experiencing a significant rise. (3) 65.84% of firms felt that tighter energy conservation standards would lead to increased operating costs; 11.63% anticipated that there would be a substantial rise. (4) 62.38% of respondents were concerned that the introduction of new energy management and emissions management regulations would result in increased operating costs, with 7.92% expecting to see a significant rise in operating costs. Overall, around 60% of SMEs expected the new energy-saving and carbon reduction measures to lead to increased operating costs, and around 10% anticipated that the increase would be significant.

Table 8-3-1 The Energy-saving and Carbon Reduction Measures That SMEs Expect to Have the Greatest Negative Impact on Operating Costs

Units: enterprises; %

Item	All Sectors	Agriculture, Forestry, Fisheries and Animal Husbandry	Manufacturing	Non-manufacturing Industries	Service Sector
Total sample size	404	18	145	42	199
Rise in electricity prices	83.17	83.33	86.21	76.19	82.41
Fluctuating oil prices	64.11	88.89	55.86	69.05	66.83
Introduction of new Energy Tax	56.44	55.56	51.72	64.29	58.29
Formulation of new energy consumption standards and/or tightening of existing standards	26.98	27.78	23.45	47.62	25.13
Introduction of new emission reduction regulations and emissions trading systems	19.06	22.22	19.31	23.81	17.59
Tightening up of energy management regulations	23.02	27.78	20.00	38.10	21.61
No measures expected to have significant negative impact on operating costs	1.49	11.11	0.00	0.00	2.01

Source: See Table 8-2-2.

To develop a more precise picture of the effect that the different measures will have, the questionnaire asked SMEs to say which measures they expected to have the greatest negative impact on their operating costs. Most SMEs felt that rising (after-tax) energy prices would have the most serious impact on their operating costs; 83.17% were concerned about a rise in electricity prices, 64.11% were worried about fluctuating energy prices, and 56.44% were concerned about the introduction of a new Energy Tax.

It is clear from the above that Taiwan's SMEs are most sensitive to changes in the price of production factors. There is much concern about the impact of rising electricity prices, followed by oil prices; as it is not yet clear which categories of enterprise the new Energy Tax will apply to or how high it will be, this issue has attracted less attention. Energy conservation standards apply only to certain specific industries, as do energy management

regulations (which in any case are of more concern to large enterprises). There are still many question marks hanging over the prospect of a future emissions trading system, but such a system would probably be of concern only to larger enterprises; its impact on SMEs would most likely be limited.

2. The Impact on Sales Revenue

The survey results presented in the previous section showed that only 9.41% of SMEs expect the tightening of energy conservation standards to lead to increased sales revenue; 13.61% of SMEs anticipated that the introduction of new energy management and emission management regulations would lead to increased sales revenue; 21.53% of respondent firms believed that the introduction of new price subsidies for energy equipment would boost their sales revenue; and 20.05% of firms expected the introduction of the subsidy for energy technology R&D to lead to increased revenue. Overall, around 10 – 20% of SMEs expected that the new energy conservation and carbon reduction measures would lead to increased sales revenue, but less than 2% expected the revenue increase to be significant.

Table 8-3-2 The Energy-saving and Carbon Reduction Measures That SMEs Expect to Have the Greatest Positive Impact on Annual Sales Revenue

Units: enterprises; %

Item	All Sectors	Agriculture, Forestry, Fisheries and Animal Husbandry	Manufacturing	Non-manufacturing Industries	Service Sector
Total sample size	404	18	145	42	199
Subsidies for the adoption of renewable energy equipment and renewable energy electricity generation	19.06	22.22	16.55	33.33	17.59
Subsidies for energy technology R&D	10.15	22.22	10.34	9.52	9.05
Subsidies and financing assistance for the adoption of energy-saving equipment and appliances	39.36	50.00	34.48	47.62	40.20
Fluctuating oil prices	32.92	50.00	31.03	35.71	32.16
Encouragement of voluntary emissions reduction and emissions trading	9.65	38.89	8.97	2.38	9.05
No measures expected to lead to increased revenue or new business opportunities	28.96	33.33	30.34	28.57	27.64

Source: See Table 8-2-2.

To acquire a clearer picture of the effects that SMEs expect the different measures to have, the questionnaire survey asked SMEs to say which of the various measures they believed would lead to the greatest increase in annual revenue. The measures that the largest share of SMEs expected to lead to increased revenue were price subsidies and financing assistance for the adoption of energy-saving equipment and appliances (39.36% of SMEs)

and fluctuating oil prices (32.92%), followed by subsidies for renewable energy equipment and renewable energy electricity generation (19.96%). Only 10.15% of firms expected the introduction of subsidies for energy technology R&D to lead to increased revenue, and the figure for the encouragement of voluntary emissions reduction and emissions trading was only 9.65%. It is worth noting that 28.96% of SMEs did not believe that any of the various measures would lead to an increase in sales revenue or to the creation of new business opportunities (Table 8-3-2).

These results show that the measure that SMEs believe is most likely to lead to increased sales revenue is price subsidies, presumably because this is the measure that will have the most obvious and dependable benefits.

IV The Strategies Available to SMEs in Response

1. SMEs' Own Strategies

Faced with the impact of rising energy prices, more stringent energy conservation standards, tighter energy management regulations and the provision of subsidies for new energy equipment sales, and so on, what strategies will SMEs need to adopt in response? How can they cope with these changes?

The survey results indicate that SMEs are planning to adopt the following five main strategies in response to this changing environment:

- (1) Proactive collaboration with the government's energy conservation and carbon reduction measures: Faced with the introduction of new, more stringent energy conservation standards, many SMEs have decided to focus on upgrading their energy-saving technology, and on improving the energy-saving characteristics of their production equipment. In response to the strengthening of energy management regulations, a significant percentage of SMEs are prepared to undertake a thorough recording and reporting of energy usage, implement thorough inventories and recording of carbon dioxide emissions, spend the money needed to improve production processes and other operational processes or upgrade energy-saving equipment, and spend the money required to hire and train specialist energy management personnel.
- (2) Cost control: Many SMEs are planning to respond to rising energy costs by reducing their consumption of petroleum products, switching over to energy-saving electrical equipment and energy-saving transportation vehicles, or making changes to their production processes or other operational processes. Faced with the prospect of new, more rigorous energy conservation standards, a large number of firms are planning to

modify their production processes or other operational processes, delay the replacement of old equipment, or make changes to their products.

- (3) Raising prices to pass on the increased costs to others: Faced with rising energy prices, new energy conservation standards and a strengthening of energy management regulation, some SMEs are planning to raise their prices, so as to pass on the increased costs to their customers.
- (4) Taking advantage of the situation to develop new energy conservation and carbon reduction-related business areas: In response to the prospect of rising energy prices, new energy conservation standards, more rigorous energy management regulations, etc., some SMEs intend to try to develop energy conservation services or to invest in energy-saving technology R&D. However, these firms are very much in the minority.
- (5) Firms that feel unable to respond in any way: Many enterprises feel that there is nothing they can do in response to rising energy prices and the introduction of new energy conservation standards; these firms represent a very large percentage of Taiwan's SMEs. Faced with the prospect of tighter energy management regulation, a large number of SMEs intend only to "do what is necessary to comply with the regulations."

Overall, it appears that a very large number of SMEs are either unwilling or unable to make any adjustments. Some are willing to collaborate proactively with the new measures, while others plan to focus on cost-control, or to transfer the increased costs to their customers; relatively few SMEs are planning to take advantage of the situation by developing new business areas.

2. Strategy Recommendations

Economic globalization and the rise of the big emerging economies have intensified the global division of labor. As a relatively small economy, Taiwan has to participate in the international division of labor and undertake specialized, large-scale production in order to maintain continued economic growth. Such a strategy will present challenges, in terms of the need to transform Taiwan's industrial structure and foreign trade structure; Taiwan's business enterprises will no longer be able to rely on low-cost production as a means of making money. At the same time, given the impact of global warming and rising oil prices, enterprises cannot expect the government to keep energy prices artificially low.

Over the next few years, global energy prices are bound to rise; the decision to introduce an energy tax is one that many countries have made. SMEs will no longer be able to count on benefiting from low energy costs. They will need to focus on upgrading and transforming themselves, developing strong brands, and integrating themselves closely with

large enterprises' supply chains; there will also be a need for closer integration between the manufacturing sector and the service sector.

On the energy front, SMEs will need to make their products less energy-intensive, or improve the energy-saving characteristics of their production equipment. They may also want to take advantage of the changed environment by developing new energy conservation- and carbon reduction-related business areas.

What will the government's role be in this process of transformation? Firstly, it needs to be recognized that technological advances are the key factor in achieving continued economic growth. New technologies can help to create new markets and stimulate new investment, thereby creating immense business opportunities not only for SMEs, but also for large enterprises. New energy-related technologies can reduce the quantities of electricity and petroleum products required by production equipment and transportation vehicles, thereby making companies' production processes and other operational processes more energy-efficient. Promoting technology development should thus be a key element in the government's long-term economic policy.

In seeking to achieve its energy conservation and carbon reduction goals, the government should make the encouragement of energy technology R&D one of its main tools. The historical data show that high energy prices are associated not only with reduced energy consumption, but also with the development of important new energy technologies. The government must therefore ensure that energy prices in Taiwan fully reflect both internal costs and externalities, so as to provide sufficient incentives for energy technology R&D; the government needs to make more enterprises believe that developing energy conservation services or investing in energy R&D can be profitable.

In addition, given that the results of technology R&D have the characteristics of public goods, it would make sense for the government to provide more subsidies for energy technology R&D.

In the short term, high energy prices will cause SMEs' operating costs to rise. The government can provide assistance by offering guidance regarding energy-saving measures, helping SMEs to save more energy within the constraints imposed by existing technology. This may enable those SMEs that are unwilling to make changes, or do not know how to make changes, to reduce their energy costs.

Chapter 9

International Trends in Government Policies for Encouraging the Adoption of New Technology Applications and New Business Models by SMEs

I International Trends in the Development of New Technologies

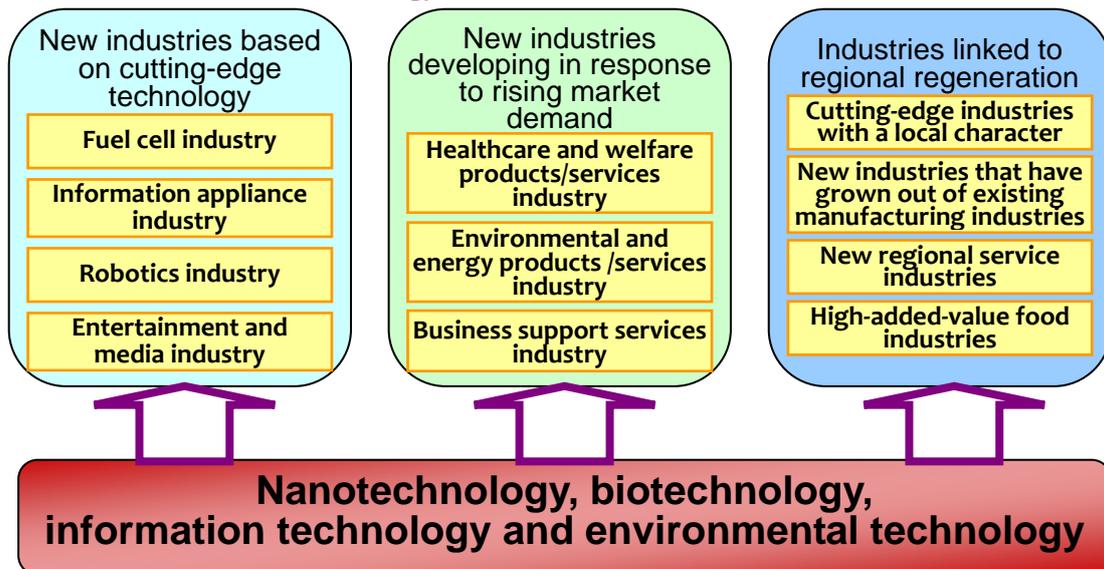
A leading academic has suggested that the course of national development is determined by the interaction of six key factors: the social environment, technological progress, the structure of the economy, the natural environment, government policy planning, and the values that citizens hold. In the future, the interplay of these six factors may create a wide range of different challenges and opportunities. New trends that experts expect to see emerging over the next ten years or so include changes in the population structure, ongoing economic globalization, a continuing increase in Internet usage, enhanced integration of different technologies, growing emphasis on environmentally friendly, flexible manufacturing, and more efficient use of resources.

As regards the relationship between technology and industrial development, it is clear that no one branch of technology is capable of meeting the needs of sustainable development. The emphasis in the future will be on innovation that fuses a range of different technologies; at the same time, the linkage between developments in various branches of technology and social and cultural development will grow closer. Any given nation will inevitably be constrained by its resource endowments; countries will need to utilize their resources efficiently to develop technologies that meet the needs of national development. It is for this reason that the advanced nations undertake research to determine where the country is headed, and plan out future technology development on the basis of these reports.

Taking Japan as an example, since 1995 – when the Science and Technology Basic Law came into effect – Japan has formulated a Basic Plan for Science and Technology every five years. During the implementation of the Second Basic Plan for Science and Technology

(2001 – 2005), Japan decided that, in the future, it would concentrate its resources on the development of key areas that included nanotechnology, biotechnology, information technology and environmental technology. The Third Basic Plan for Science and Technology continued to allocate resources to these areas, while adding new key areas – energy, production technology, social infrastructure, and cutting-edge technology (space and ocean technology) – to meet Japan’s changing needs. The Japanese government anticipated that careful planning and the integration of different disciplines would make it possible to develop important new industries. Since the Japanese government began to channel resources towards the four key sectors of nanotechnology, biotechnology, information technology and environmental technology in line with the Basic Plan for Science and Technology, the process of exchange and interaction has given rise to new industries that fall into three broad categories: new industries based on cutting-edge technology, new industries that have developed in response to rising market demand, and new industries related to regional regeneration. Each of these categories embraces a variety of different emerging industries (Figure 9-1-1).

Figure 9-1-1 Emerging Industries and Sectors in Japan Derived from New Technology

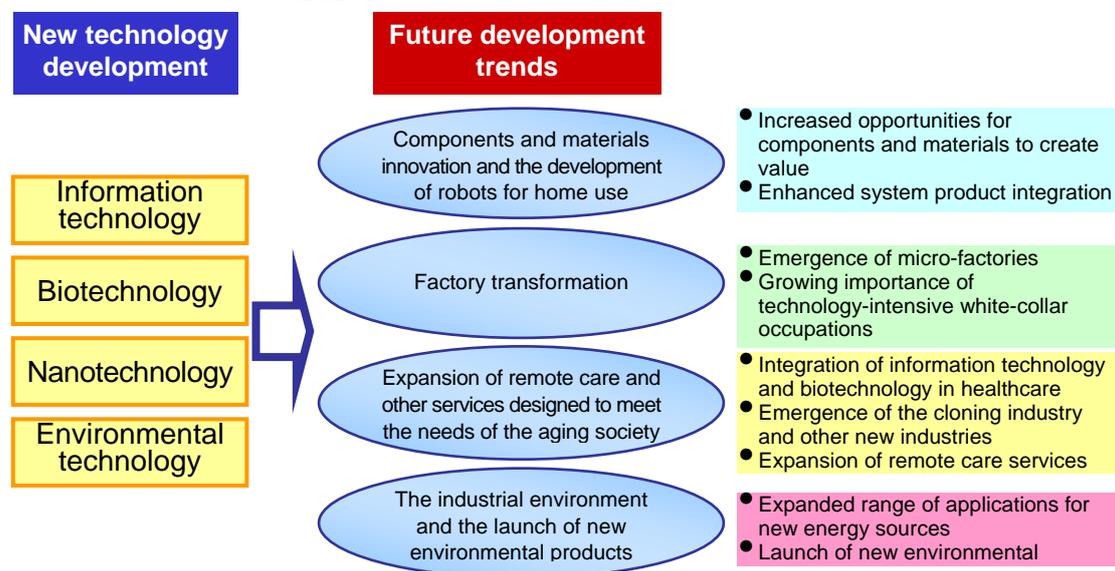


Source: *New Industry Promotion Strategy* (Japan), 2006.

Neighboring South Korea has also been very active in this regard. The “Vision and Strategy of Industrial Development 2015” announced by the South Korean government in 2006 noted that, like Japan, South Korea would be focusing on the development of four key areas: information technology, biotechnology, nanotechnology and environmental technology. By integrating these four key fields, South Korea believed that it could direct the

path taken by new technology development in the future (Figure 9-1-2). The main emerging industries that South Korea expects to develop by 2015 are shown in Table 9-1-1 below:

Figure 9-1-2 New Technologies and Future Development Trends in South Korea



Source: *Vision and Strategy of Industrial Development 2015* (South Korea).

Table 9-1-1 Important New Emerging Technology Fields in South Korea by 2015

Item	Information Technology	Biotechnology	Nanotechnology	Environmental Technology	Technology Integration
Components and materials innovation	Next-generation displays, smart materials and next-generation semiconductors	Medical devices	Materials for new applications	N/A	Integration of biotechnology and nanotechnology
Micro-factories and greater involvement of white-collar staff in production	N/A	N/A	Micro-factories	Energy and pollution prevention equipment	Integration of information technology and nanotechnology
Aging population and expansion of telemedicine	Cutting-edge medical devices	Biomedicine and bio-treatments	N/A	N/A	Integration of information technology and biotechnology
Environmental change and emergence of new environmental products	N/A	Bio-environment	N/A	Renewable energy	Integration of biotechnology and environmental technology

Source: *Vision and Strategy of Industrial Development 2015* (South Korea).

It is significant that, although both Japan and Korea are channeling resources towards the same four key areas of information technology, biotechnology, nanotechnology and environmental technology, there is significant variation in the range of emerging industries

whose development they are seeking to promote. Each new technology and every emerging industry will inevitably affect SMEs to one degree or another, while also offering different opportunities for development.

II SMEs and Technology Development – Opportunities and Threats

The development of new technology can drive the growth of new industries such as biotechnology and robotics. Depending on the social environment of the country in question, new technology development may also stimulate the emergence of telemedicine, cultural and creative industries, etc. From the point of view of SMEs, which already have to cope with intense competition, the emergence of new technologies can bring major changes.

In the vast majority of countries, SMEs account for over 90% of all business enterprises; SMEs thus constitute the foundations for economic development. The SMEs' drive and flexibility helps to inject new innovation and vitality into economies; if the development of new technologies and new industries is undertaken only by large enterprises and by the government, with no participation by SMEs, then this will have a severe negative impact on both the results achieved and the speed of development.

SMEs' flexibility and energy are counterbalanced by their small size and limited resources. SMEs are particularly short on the capital, human talent and technology that are needed to develop new technologies and new industries. If a country hopes to leverage new technologies to develop new industries, then besides developing detailed development strategies and plans to this end, it should also provide adequate support to the country's SMEs, encouraging them to adopt new technologies; only then will that country's efforts to promote the growth of emerging industries be successful.

1. The Legislative and Regulatory Framework

To help SMEs cope with the challenges that new technologies will bring, many countries have introduced laws that require government agencies to provide SMEs with specified resources. To take just one example, taking into consideration the fact that most SMEs in Italy are in "traditional" industries, in 1991 the Italian legislature enacted Law 317/91, which required the establishment of zones dedicated to supporting SME development. In these zones, local government authorities can establish infrastructure for the shared use of SMEs, and can provide financing support at preferential interest rates; it was anticipated that these measures would encourage more SMEs to establish themselves in these zones. Paragraph 1, Article 36 of Law 317/91 stipulates that "SME industrial zones" must be zones with a high

concentration of SMEs, where those SMEs account for a significant share of business enterprises and of local employment, and where the SMEs in question are engaged in specialized production. When an application for the formal establishment of an SME industrial zone has been approved by Italy's Ministry for Industry, the local government authorities in that area can then lawfully provide more infrastructure and services to help SMEs in the zone, and can provide education, training and guidance support for SME personnel.

2. Long-term Planning

Besides legislative measures, some countries incorporate SME technology development into their long-term national development planning, using government resources to give carefully targeted support, and providing various types of incentive measures to encourage more SMEs to adopt new technologies. For example, the Eleventh Five-Year Plan that China announced in 2006 included an SME Growth Engineering plan, based on two fundamental principles. The first of these is "moving onto a new growth track" with SMEs being encouraged to move into the field of technology development to achieve "harmonious development." The second principle involves the realization of "four transformations": (1) from a focus on quantitative expansion towards an emphasis on raising quality; (2) from "scattergun" growth towards more focused, sustainable development; (3) giving more emphasis to collaboration between different firms, rather than seeking to achieve transformation at the level of the individual enterprise; and (4) moving away from the single-minded pursuit of economic benefits towards achieving a balance between economic benefits and social responsibility.

The work items that are being implemented under the SME Growth Engineering plan include: (1) building up the legal and regulatory framework; (2) putting in place the service systems needed to integrate SMEs more closely into society; (3) ongoing strengthening of SMEs' ability to undertake autonomous innovation; (4) promoting a restructuring and optimization of the SME sector; (5) taking corporate reform to a deeper level; (6) helping SMEs to solve their financing problems; (7) educating and training to improve the quality of managers and staff; (8) encouraging SMEs to adopt a more open attitude; and (9) enhancing SMEs' ability to monitor, control and analyze their own production and operations.

To implement the SME Growth Engineering plan, central and local government agencies will be putting in place the ancillary measures related to business start-up investment: (1) leveraging fiscal and financial policies to encourage venture capital funding providers to increase their investment in SMEs, and to build a comprehensive SME

financing system; (2) using policy investment funding to guide venture capital investment towards SMEs that are still at the start-up stage; and (3) encouraging SMEs that meet the necessary criteria to seek a stock market listing in China or overseas.

3. Establishment of Specialist Foundations

Besides formulating policies and development plans, some countries have also made use of the establishment of specialist institutions to provide various types of assistance to SMEs that are interested in making use of new technology. For instance, Sweden's VINNOVA was established with precisely this aim in mind. In Sweden, government agencies decide on which areas of technology development the country should focus on in the future, but implementation of these plans is entrusted to VINNOVA (the Swedish Agency for Innovation Systems). Currently, VINNOVA is giving priority to six key areas: ICT, service industries, biotechnology, manufacturing, materials, and transportation. It is anticipated that, by focusing on these areas, VINNOVA will be able to contribute to the emergence of important new industries and branches of technology, including communications systems, microelectronics, software production, online services, home care, biotechnology, innovative food products, environmentally friendly materials, and advanced transportation equipment, etc.

4. Channeling Resources

SMEs tend to suffer from limitations imposed by their small size and lack of resources. Governments may want to consider channeling resources towards those SMEs that are interested in making effective use of new technologies, giving more help (and more comprehensive help) to those SMEs whose activities are in line with the government's plans for national development. Besides helping to increase the percentage of SMEs that achieve success, such a strategy would also tend to encourage more SMEs to move into fields relating to new technology.

One example of this type of strategy is South Korea's Inno-Biz plan for cultivating innovation-oriented SMEs. In 1999, South Korea's Ministry of Science and Technology (MOST) announced the launch of the Vision 2025 long-term development plan, which set the goal of making South Korea one of the world's top seven technology superpowers, and the top spender on R&D, by 2025. The Small and Medium Business Administration (SMBA) launched the Inno-Biz program in 2001. Based on the principles of careful selection and focus, Inno-Biz sought to use carefully coordinated supporting measures to enhance the innovation capabilities of South Korea's SMEs, thereby helping to boost the competitiveness of Korean industry and of the country as a whole.

New technologies can have a significant impact on SME development, so that national governments can employ a variety of different methods – including legal and regulatory changes, strategic planning, financial and consulting support, and careful channeling of resources – to help SMEs face up to today's challenges and make effective use of new technology in their future development.

III International Examples of Government Policies Designed to Encourage the Adoption of New Technologies by SMEs

1. Japan – the Biotechnology Sector

In 1995, the Japanese government promulgated the Science and Technology Basic Law, with the aim of revitalizing science and technology development in Japan. 1996 saw the announcement of the first five-year Basic Plan for Science and Technology. The aim of the first Basic Plan (implemented during the period 1996 – 2000) was to create an environment conducive to science and technology development. The goal of the second Basic Plan (2001 – 2005) was to leverage the infrastructure and systems created by the first Basic Plan to identify the areas on which Japan should focus in science and technology development, while the third Basic Plan (2006 – 2010) is intended to continue the development of the key areas identified in the second Basic Plan and also to add new areas, while emphasizing the need for science and technology development to make a positive contribution to society.

Besides basic research, the second Basic Plan identified four key areas on which Japan should focus its science and technology development efforts and investment: biotechnology, ICT, environmental science, and nanotechnology. The biotechnology industry was thus one of the key development areas specified by the second Basic Plan. Subsequently, government agencies promulgated a number of relevant measures, including: the New Industry Promotion Strategy 2005; the Technology Strategy Map; the second Basic Plan for Science and Technology; the Plan for Strengthening Regional Financial Functions; and the National Biology Strategy.

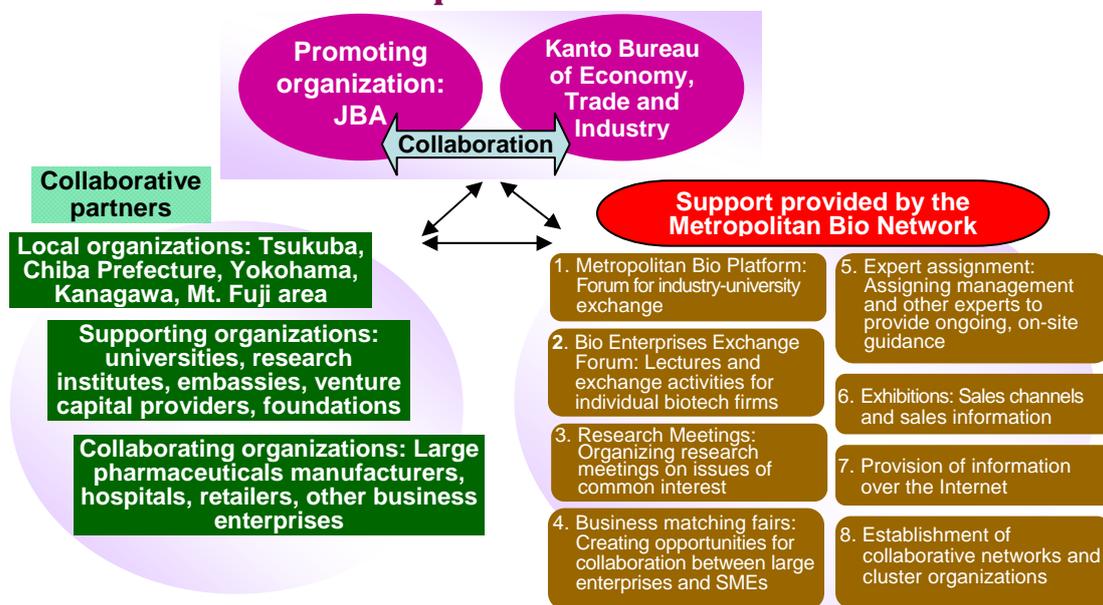
Japan has made significant use of industry clusters in its efforts to achieve effective promotion of biotech industry development. The Japanese government defines an industry cluster as being a group of business enterprises, universities, research institutes, industry guidance organizations, Internet services organizations, technology transfer organizations, industry-university collaboration organizations and groups of experts that are in geographical proximity to one another and that are engaged in the development of an industry in which the

region in question enjoys a competitive advantage. The tight linkages inside the cluster facilitate the rapid transmission of technology, specialist know-how, ideas, knowledge and other information. At the same time, the fusion and innovation that takes place within the cluster, mediated by competition and coordination mechanisms, helps to drive technology innovation for the industry as a whole, helping the industry to adapt rapidly and proactively to changes in the wider business environment.

With these aims in mind, in 2001 Japan’s Ministry of Economy, Trade and Industry launched an Industry Cluster Project, to be implemented over the period 2001 – 2005. Working in collaboration with local government agencies responsible for economic and industrial affairs, and with private-sector organizations, a total of 19 individual plans were initiated throughout Japan. In the second phase of the Project, implemented in 2006 – 2010, the original 19 plans were reduced to 17.

The individual industry cluster plans cover a wide range of activities: (1) the formation of regional networks integrating industry with government and the university sector; (2) leveraging regional specialization in technology development; (3) establishment of entrepreneur cultivation facilities and enhancement of manpower cultivation; (4) promoting collaboration with trading companies so as to help SMEs develop new distribution channels; (5) collaboration with financial institutions to facilitate access to funding; and (6) cultivation of high-level specialist human talent.

Figure 9-3-1 Schematic Representation of the Metropolitan Bio Network in Japan



Source: Japan Bioindustry Association, 2008.

Taking Japan's Kanto region as an example, to support the development of the biotechnology industry the Japan Bioindustry Association (JBA) has joined forces with the Kanto Bureau of Economy, Trade and Industry and collaborative networks in the Tsukuba, Yokohama, Mt. Fuji and Chiba districts to establish a new cooperative organization: the Metropolitan Bio Network. In accordance with the initial planning, business enterprises are being encouraged to join the Network, where they can access support provided by various Japanese government agencies; this assistance is tailored to the needs of the individual firms. See Figure 9-3-1 for the basic conceptual framework for the Metropolitan Bio Network.

The results of a survey conducted for Japan's Industry Cluster Project in 2007 indicate that the Project has not only helped to stimulate R&D activity in the biotech sector, but has also brought many other benefits for business enterprises (Table 9-3-1).

Table 9-3-1 Results Obtained in the Survey Regarding Implementation of the First Stage of the Industry Cluster Project in Japan

Unit: %

Item	Economic Benefits	Economic Benefits		
		Industry Cluster Project	Related Enterprises	All Enterprises
Promotional benefits	More efficient enhancement of enterprise visibility	35.5	42.9	37.1
	Improvement in the image of the region's SMEs	18.2	22.2	20.0
Market development benefits	Collaboration with a larger number of enterprises and with more frequent interaction	7.3	7.6	5.7
Resource utilization capabilities	Improved access to specialist human resources	12.3	11.5	8.5
	Improved access to funding	10.9	12.5	13.5

Source: Ministry of Economy, Trade and Industry (Japan), Industry Cluster Project (2007).

As can be seen based on Japan's experience of promoting the development of the biotechnology industry, following the establishment of the necessary legal and regulatory framework (in Japan's case, the Science and Technology Basic Law) and the formulation of development plans (the Basic Plan for Science and Technology), governments can then go on to allocate various resource inputs in accordance with development plan requirements. As regards the actual process of implementation, specialist agencies (in Japan's case, the Japan Bioindustry Association) can be commissioned to coordinate the resources of government, industry and universities and oversee the creation of collaborative networks (the Metropolitan Bio Network) to achieve the effective promotion of particular industries.

2. South Korea – the Robotics Industry

Just as the Japanese government has been working hard to stimulate the development of the biotech sector, in South Korea, when engaging in planning for the Vision and Strategy of Industrial Development 2015, the government realized that intelligent robots were another

key area of new technology on which South Korea would need to focus in the future. The South Korean government has therefore introduced a series of measures and regulations designed to support the development of robotics technology and the robotics industry.

The South Korean government defines intelligent robots as being more than just devices that can perform tasks previously performed by humans in a relatively simple, uncomplicated environment; they must be able to take action based on awareness of their own surroundings. Robots should also be able to interact with people, and understand human commands and human emotions. Leveraging information and communications technology (ICT), robots can provide human beings with a wide range of services. The definition adopted by the government is that smart robots must possess perception, cognition, mobility and manipulation capabilities. The importance that South Korea attaches to the development of the intelligent robot industry is evidenced by reports that have been issued on this subject in the past few years, and by the policies that the government has formulated.

On February 26, 2008, the South Korean legislature passed the *Law on the Development and Distribution of Intelligent Robots*, which was followed in September 2008 by the *Robotics Special Law*. These laws stipulate that, to enhance the efficiency of robot development, the South Korean government must formulate a national plan for robotics development every five years. To this end, the Ministry of Finance and Economy convened a discussion meeting in March 2008, and began work on the establishment of an intelligent robot industry promotion system in May 2008, setting up a special Task Force Team (TFT) composed of more than 80 robotics experts from government, industry, universities and research institutes. 15 of these experts were chosen to form the Korean Robotics Basic Plan Committee.

The Korean Robotics Basic Plan Committee held 6 meetings over the period from May 2008 to March 2009, along with 5 working group meetings and workshops, 30 meetings of the team responsible for the actual drafting of the Basic Plan, 3 presentations and seminars, and numerous consultations with other ministries and local government authorities. Great care was taken to ensure that the formulation of the Basic Plan was undertaken in a transparent, fair, and professional manner. More than 200 Korean experts on robotics from government, industry, universities and research institutes were invited to participate in the formulation of the Basic Plan. The First Basic Plan for Intelligent Robots was promulgated on March 11, 2009.

Under this Plan, the South Korean government will allocate 1 trillion Won in funding between 2009 and 2013 to support development of robotics technology and of the intelligent robot industry. It is intended that the Plan goals will be achieved through a two-stage

implementation process. The first-stage goal is to raise the annual production value of the Korean intelligent robot industry from 900 billion Won at present to 4 trillion Won by 2013, boost the industry's annual exports from US\$180 million to US\$1 billion, and raise the industry's global market share from 8.9% to 13.3%. Over the same period, the number of jobs that the industry provides will rise from 6,200 to 20,000, and the number of enterprises engaged in activities related to intelligent robot development will increase from 187 to 250, making South Korea the world's third largest robot producer nation. In the second stage of the Plan's implementation, from 2013 to 2018, the targets that have been set are an annual production value of 20 trillion Won, annual exports of US\$7 billion, a global market share of 20%, 80,000 jobs, 500 robot-related enterprises, and the establishment of South Korea as the world's leading player in robot development.

To ensure the smooth implementation of the First Basic Plan for Intelligent Robots, the Korean Robotics Basic Plan Committee has also formulated a 5-year R&D and investment strategy, covering four key areas: R&D related to key technologies, boosting demand, putting in place the infrastructure needed for the industry's growth, and collaboration systems. The 15 key work items include the adoption of a differentiated R&D strategy based on three core technology groups that will help to enhance Korea's technological competitiveness in this field, thus supporting the development of "model firms" that can lead the way towards early commercialization of new robot technology, etc. (Table 9-3-2).

Table 9-3-2 Key Items of South Korea's First Basic Plan for Intelligent Robots

Segment	Core Promotion Items
1. R&D targeting key technologies	(1) Formulation of a 5-year R&D investment strategy (2) Diversified R&D strategy based around three core technology groups, to enhance South Korea's technological competitiveness in this field
2. Boosting demand for robots	(3) Implementation of the "Star Project" (4) Promoting the growth of "model enterprises" that can lead the way to early commercialization (5) Building large-scale demand for robots (6) Cultivating the development of the world's most prestigious robotics competition (7) Support for marketing activities to help robotics firms develop both the domestic and overseas markets
3. Putting in place the infrastructure needed for steady growth	(8) Cultivation of a wide range of specialist talent to meet the industry's needs (9) Establishment of standards and certification systems to strengthen trust in the industry's robot products (10) Improving the legal and regulatory framework and the establishment of a robot ethics charter (11) Making effective use of private-sector capital to fund the robotics industry (12) Strengthening support systems to invigorate the robotics industry (13) Building up a collaboration system to strengthen robotics industry clusters
4. Building trans-national collaboration	(14) Creating mechanisms to concentrate the robotics industry's R&D efforts on key areas and energize the industry as a whole (15) Strengthen mutual support and integration between robot industry support centers in different regions of the world

Source: Ministry of Finance and Economy (South Korea), March 12, 2009.

In the past, other countries doubted that South Korea would be able to develop the robotics industry successfully. However, thanks to the guidance provided by the Ministry of Commerce, Industry and Energy (MOCIE), supported by the Ministry of Information and Communication (MIC), around 120 Korean firms are now engaged in the development of robot products and components. By 2007, South Korea was catching up with Europe, the U.S. and Japan in terms of the number of intelligent robot patents applied for. As regards actual applications, during the period October – December 2005 a pilot project was implemented in which 3 types of robot were tested in 64 homes; this was followed by a further pilot project using 5 types of robot in 1,000 homes, implemented over the period between October 2006 and March 2007. It can thus be seen that, thanks to the government's ongoing efforts, South Korea has already achieved significant results in its development of the intelligent robot industry. South Korea's experience in this area offers valuable lessons for Taiwan in its efforts to develop the robotics industry.

3. Ireland – Digital Technology

Digital technology is an area of new technology that many countries have chosen to focus on. Integrating national culture with digital technology can help to stimulate the development of the cultural and creative industries; integration of digital technology with healthcare can be used to develop the remote care industry, etc. Taiwan has made digital technology one its priority areas for new technology development.

Ireland's economic growth over the past ten years or so has been dramatic; the government has played a major role in bringing about this growth, and its far-sighted economic planning has won widespread praise. To support the growth of its digital industries, in 2003 Ireland established the Digital Hub to undertake digital and multimedia research; the aim was to create a knowledge-intensive innovation center that would focus on digital content and technology research. The Digital Hub was built on the site of the old Guinness factory in Dublin. The multiple goals set for the Digital Hub included the integration of corporate and university capabilities, community development, urban renewal, and industry cluster formation, etc. Although the Digital Hub is a relatively new creation, its establishment forms part of a carefully tailored three-stage plan formulated by Ireland's Industrial Development Agency to bring about the development of a world-class digital and media industry in Ireland.

The Digital Hub project has now entered Stage Two. As regards the results achieved in Stage One, a total of 60 companies are already operating in the Digital Hub, with a combined total of over 500 employees. A staff member said that what they were most proud of was the fact that leading U.S. corporation Amazon had decided to locate its European systems and

network logistics center in the Digital Hub; this center will provide data services for the entire European market. One of the main factors behind the Digital Hub's rapid growth is its proximity to the city center; the Hub is only ten minutes' walk from the center of Dublin, and is close to Trinity College Dublin, the Dublin Institute of Technology and two design colleges, enabling it to benefit from these institutions' resources. Other important factors include the establishment of testing platforms for innovative digital products and services, effective cost control, and flexible office space layout for the companies that locate themselves in the Hub. The main focus in the development of the Digital Hub to date has been on e-learning, digital content software, digital gaming, wireless communications, and e-government.

Figure 9-3-2 Ireland's Digital Industries Development Roadmap

Planning Stage (2001)	Preparatory Stage (2002 – 2003)	Stage One (2004 – 2005)	Stage Two (2006 – 2011)	Stage Three (2012)
<ul style="list-style-type: none"> • Urban planning • Dublin city council agrees to a modification of the Dublin Development Plan to support development of the Digital Hub • Evaluation of opportunities and risks 	<ul style="list-style-type: none"> • Deployment of communications infrastructure • Provision of space for business enterprises and training activities • Digital industry cluster starts to take shape 	<ul style="list-style-type: none"> • Cluster of around 50 enterprises formed • Integration of domestic and foreign firms in the digital and media industry value chain • Private sector development contracts • Establishment of community development training courses 	<ul style="list-style-type: none"> • Industry cluster growth • Establishment of private sector development zone facilities • Direct interaction through training programs 	<ul style="list-style-type: none"> • Creation of a vigorous digital and media industry cluster • Urban renewal • Establishment of first-class community development and learning capabilities

Source: Digital Hub Development Agency, Ireland (2006).

The methods used by the Irish government to support the growth of the digital industries vary depending on the business development model of the individual enterprises. The Digital Hub does not provide any subsidies for business enterprises; what it provides is office space at low rents, the benefits of clustering, and access to technology, etc. For new start-ups, the Digital Hub provides office space and as much other assistance as it can provide; for companies at the growth stage, the presence of leading corporations in the Hub helps to attract investment and strengthens the availability of high-quality manpower. The Digital Hub helps to build linkages between business enterprises and new markets, while also working to strengthen intra-cluster collaboration. For multinational corporations, the Digital Hub offers a low-cost, low-risk overseas location; they can also benefit from Ireland's low corporate income tax (12.5%) and its young population (40% of the population are under 25). To help cultivate the human talent needed for Ireland's digital industries, the

Digital Hub has been working with eight Dublin neighborhoods in the vicinity of the Hub, providing training courses, setting up a learning radio station, and allowing ordinary members of the public to use the e-learning facilities at the Hub, so as to help children develop creativity, imagination and artistic skills.

Development of the digital industries in Ireland began at a relatively late date compared to the U.S. or Canada. Even so, the Irish government has been extremely far-sighted in its planning. The emphasis at present is on the area in the immediate vicinity of the Digital Hub, but the government intends to replicate the Hub's achievements in other parts of Ireland. One significant difference from Taiwan is Ireland's emphasis on cultivating creativity and innovation in children. While the results of these efforts will not be felt in the short term, the long-term benefits in terms of planting the seeds of future innovative research and cultivating entrepreneurship could be significant.

IV How Can Taiwan's SMEs Leverage New Technologies to Build Competitive Advantage?

Currently, Taiwan's industrial development is under pressure that arises from both internal and external sources. Externally, China's cheap labor and cheap land, coupled with the market opening that has followed its accession to the WTO, have exercised a magnetic attraction with respect to foreign investment. The shifting of production to China by Taiwanese enterprises is no longer confined to labor-intensive and low-value-added industries; its impact on Taiwanese industry as a whole is growing steadily. The emphasis on labor quality and discipline that supported the growth of Taiwan's traditional industries in the past is no longer sufficient to enable Taiwan to maintain its economic vitality; what Taiwan needs now is enterprises that are capable of responding to changes in the market and that are able to make effective use of new technology.

To encourage SMEs to strengthen their innovation and R&D capabilities, and to help reduce both the cost of undertaking R&D and the level of risk associated with it, the government has for many years now been providing innovation and R&D guidance and funding support through programs such as Small Business Innovation Research (SBIR), the Industrial Technology Development Program (ITDP), the Innovative Technology Applications Program (ITAP), the Conventional Industry Technology Development (CITD) plan, and the Assist Service Sector Technology Development Plan, aiming to encourage SMEs to allocate more resources to R&D and to leverage innovation to transform and upgrade themselves.

To ensure the effective application of resources to achieve long-term benefits, over the

last few years the government has been actively engaged in planning Taiwan's response to the six major global trends of globalization, the growth of the Internet, changing population structures, inter-disciplinary technology integration, raising the efficiency of resource utilization, and environmentally-friendly, flexible manufacturing. Taking into consideration the fact that 97.77% of Taiwan's business enterprises are SMEs, the government has identified 14 key technology groups – agricultural biotech, nano-materials and applications, advanced electronic materials and components, next-generation solar energy, high-integration semiconductors, next-generation semiconductor process technology, online multimedia, broadband communications, the digital home, wireless technology, advanced display systems, sustainable construction, environmental and resource management, and precision machinery and equipment – on which it believes Taiwan should focus in the future. This planning by the government can help SMEs to formulate their own plans for the future, based on the effective utilization of these key technologies and trends.

While the government has a responsibility to point SMEs in the right direction, ultimately the key factor is the SMEs' own entrepreneurial spirit. Taking Sweden as an example, although it is one of the world's advanced nations, it still has to cope with the competition from (and attractiveness as investment destinations of) other European countries. The Swedish government has realized that the role the government plays in promoting economic growth must change with the times. Sweden believes that the general trend today is towards striking a balance between government intervention and the free operation of the market mechanism. The government has therefore been focusing on building an economic environment conducive to personal, enterprise and regional development, aiming to ensure the efficient allocation of natural and human resources, creating opportunities for Sweden's citizens to realize their ambitions, eliminating obstacles, and promoting the entrepreneurial spirit among both business owners and employees.

Sweden's SME strategy is built around the goal of helping Swedish enterprises to maintain their entrepreneurial drive. The Swedish government believes that the entrepreneurial spirit is vital to the continued emergence of new SMEs and to the growth of existing SMEs; the government feels that it has a duty to put in place the systems and environment needed to support SME development, making it easier for Sweden's SMEs to innovate and grow.

It can thus be seen that, faced with the impact of new technologies, while the government can go some way towards easing the burden of SMEs, the key factor is the SMEs themselves. If SMEs have a strong entrepreneurial spirit, then, by working in concert with other SMEs, they can achieve world-beating results. In this regard, the "A-Team"

constitutes an example of which Taiwan can be proud.

The A-Team is an alliance within Taiwan's bicycle industry. Its strategy has been to undertake innovation activity that is closely integrated with consumers' needs. In the past, the way that bicycle retailing was structured made it difficult for manufacturers to find out why consumers were not buying particular models. Today, thanks to close upstream-downstream integration, the first stage in new product development is to identify consumer needs. The different firms that make up the bicycle supply chain communicate with one another intensively during the product design process, and work together to improve product quality in the development process. The establishment of the A-Team brought together Taiwan's two largest bicycle manufacturers – Giant and Merida – and 11 bicycle component manufacturers. The alliance's goal was to provide consumers with innovative, high-quality products that conformed to consumers' needs, and to create a brand-new, high-value-added market segment, thereby helping Taiwan's bicycle industry to upgrade itself. When planning new product development, the A-Team adopted a new philosophy of focusing on differentiation and making products stand out, rather than focusing mainly on pricing; price-setting was undertaken *after* each new product was developed, as opposed to the old-fashioned way of doing things in which the component suppliers created prototypes, and the bicycle vendor then chose from among these and beat the price down.

Since the A-Team was first established, its members have held regular brain-storming sessions to set new targets and formulate new plans. Product development results are reviewed once every three months, after which new achievements are publicized. The impact of the close coordination between individual manufacturers has been profound. In the past, even when component makers knew each other, they would not have visited each other's factories. After joining the A-Team, each company has welcomed other manufacturers to visit its premises; seeing what other firms are doing encourages enterprises to set new goals for themselves, creating a "virtuous circle" the benefits of which could never have been achieved by individual companies going it alone.

The results achieved by the A-Team show the way forward in terms of how Taiwanese industry can overcome the obstacles that have hindered its transformation and upgrading; the A-Team represents a new model of how firms can respond to the challenges of globalization, liberalization and the dawning of the era of the knowledge economy. The A-Team's success has shown the individual companies that make up the alliance that Taiwan still offers them plenty of development potential; some companies that had previously moved production offshore have since shifted the center of gravity of their operations back to Taiwan. Given

the current state of competition between Taiwan and its competitor nations, if Taiwanese companies remain stuck in business models that emphasize technology above all else, then not only will Taiwan be unable to catch up with the advanced nations, but it will also be unable to compete effectively against the emerging economies, which benefit from much lower costs. What the A-Team has shown Taiwan's SMEs regarding the best way to respond to the impact of new technologies is that, if the capabilities of every enterprise in the supply chain can be properly coordinated, using optimized production processes and strengthening both technology and product development capabilities, while also monitoring changes in consumer demand and building up the ability to develop products based on innovative new concepts, so that the three key areas of manufacturing, R&D and marketing are closely integrated, then enterprises can work together successfully to create value.

To summarize, based on the above examination of the policies adopted by other countries to help their SMEs cope with the impact of new technologies, and the experience of Taiwan's A-Team, the following points can be made:

Firstly, innovation has a vitally important role to play in the development of Taiwan's business enterprises, but simply allocating large amounts of resources to innovation will not necessarily produce results. Taiwan has for many years now had legislation in place to support SME development, but this legislation may need adjusting from time to time in line with changing circumstances. The experience of other countries shows that forward-looking planning with respect to the adoption of new technologies is very important. If the government can give SMEs a clear picture of which direction industry is headed in, then this will help to ensure that both SMEs and the government are working towards the same goals, and will minimize unnecessary wastage of resources.

Secondly, focusing on long-term results is important in collaboration between business enterprises. In the past, Taiwanese enterprises tended to focus excessively on their own interests, and to ignore the importance of the end-user or final consumer. The tendency to ignore consumer demand and focus single-mindedly on increasing the volume of orders secured led to a steady reduction in value-added and to falling profit margins. If Taiwan's SMEs are to maintain significant market share in the future, they will need to think in the long term, making the welfare of every company in the supply chain their chief objective; only then will they be able to work together effectively to achieve meaningful innovation. Similarly, when seeking to support the development of new technology, the government must focus on long-term development. Even if a neighboring country is developing a particular branch of technology, the government must consider whether that technology is really suited to Taiwan's long-term development needs, and must undertake careful planning

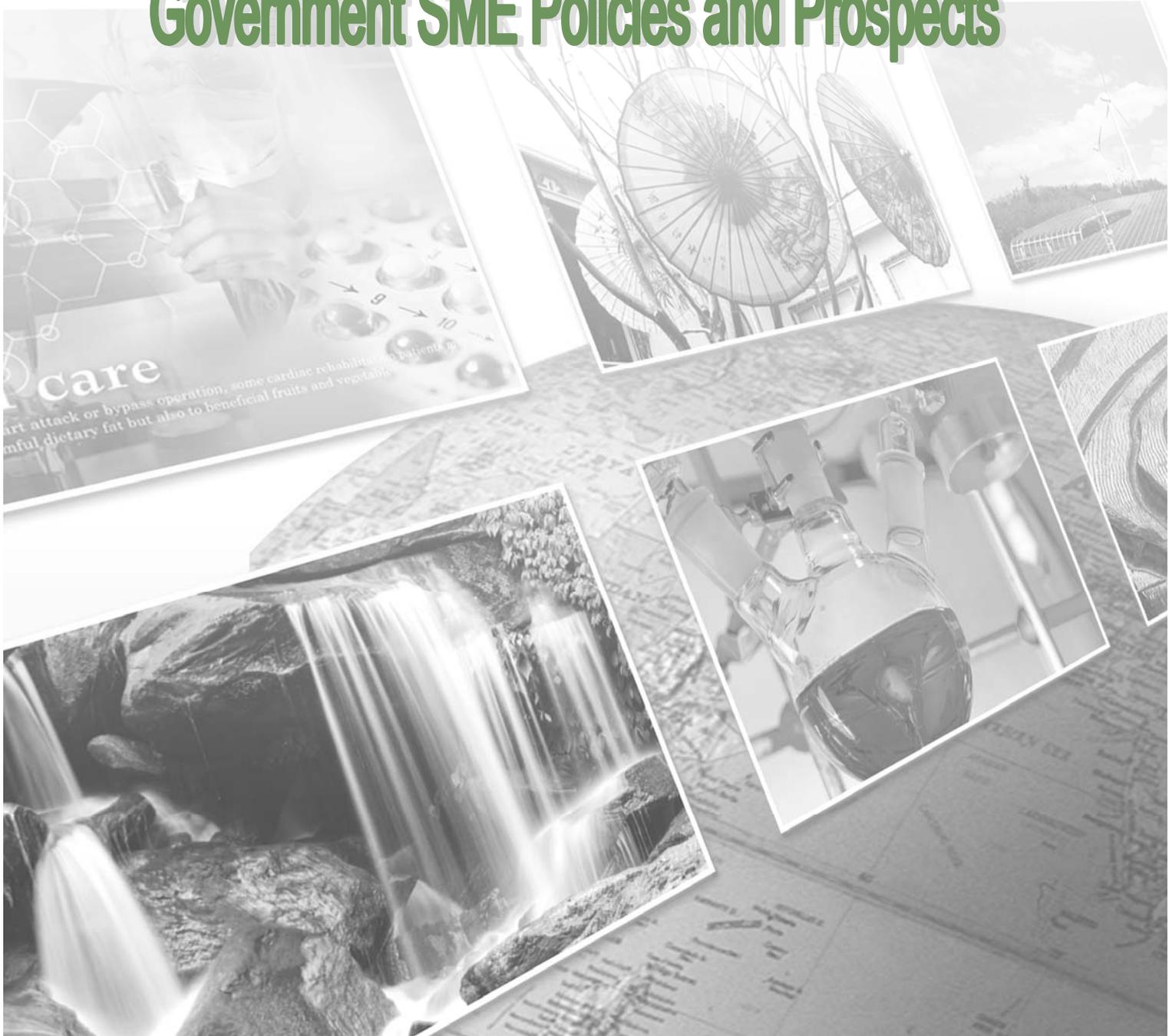
and resource allocation, so as to reduce the negative impact on Taiwan's SMEs.

A third point is the transformation in the government's role. In the past, the government was the leader, providing SMEs with various types of resources, and adopting a very active stance in its efforts to protect the SME sector. Today, in the era of the knowledge economy, SMEs can leverage innovation to build competitive advantage. In the advanced countries, the government no longer seeks to lead the way forward; instead, it focuses on providing SMEs with a fair, supportive business environment. Given this environment, SMEs can then think carefully about their future plans and develop innovation strategies. Governments need only push SMEs gently in the right direction to ensure that the SME sector's efforts are concentrated in what the government believes will be the key areas of the future.

Judging from the experiences of other countries in helping SMEs to cope with the impact of new technologies, and from the results achieved by the A-Team in Taiwan, it seems that the conventional wisdom that SMEs are not good at collaborative innovation must be reassessed. As long as the government can create a fair, secure business environment, by reducing the burden that SMEs need to bear and setting up dedicated agencies to provide SMEs with the assistance they need, then SMEs can build on these foundations to form consensus, integrate peripheral resources, and make effective use of the guidance measures that the government provides to engage in collaborative innovation activities based on long-term vision. At the same time, the cluster effect – integrating government, industry, universities and research institutes – can help to minimize the negative impact of new technologies on SMEs and also ensure that these new technologies are used to help SMEs create value.

Part Three

Government SME Policies and Prospects



Chapter 10

Building an Environment Conducive to SME Development

In order to give small and medium enterprises (SMEs) a clearer understanding of relevant laws and regulations, ensure that their legal rights are protected, and enhance their competitiveness and ability to adapt to changes in the law, the government has been actively working to create a legal and regulatory environment conducive to SME innovation and to the growth of the SME sector as a whole. To this end, the Small and Medium Enterprise Administration has been coordinating the revision of various laws and regulations related to SME activity, while also providing SMEs with legal information and consulting services, and undertaking studies and surveys on SME development policy, with the underlying goal of building a first-class environment for SME operation. The following sections outline the main measures implemented in this regard in 2008, the individual work tasks carried out, and the results achieved.

I Formulation of SME Policy and the Making Available of Relevant Information

Think-tanks have been commissioned to undertake research on issues related to SME development, and to offer recommendations regarding strategies and guidance methods. This information is made available for the reference of SMEs in the form of publications and presentations, or online.

1. The Formulation of an SME Development Strategy and Guidance Policy

To acquire a more in-depth understanding of the problems that Taiwan's SMEs face, in terms of the business environment in which they operate, relevant information is collated and analyzed to formulate preliminary response measures that can serve as a reference for the government when formulating SME guidance policy.

(1) Research on Issues Related to SME Development

In 2008, various think-tanks were commissioned to undertake 17 major research projects related to SME development issues, including: "Strategies for the Development of Emerging

Markets by SMEs,” “SME Brand Management Models,” “Strategies for the Future Development of SME Incubation Centers,” “The Policies Adopted by the OECD Member Nations for Promoting New Business Start-up, and How These Policies can be Expected to Evolve in the Future,” “Planning Guidance Mechanisms for Overhauling SME Finance – the London Approach,” “International SME Innovation Policy,” “Management Consulting Industry Guidance Models in Taiwan,” “Collaboration between SMEs and Large Enterprises on the Development of Overseas Markets,” “How Incubation Centers Can Work with Local Industries to Stimulate the Growth of Innovative Economic Activities,” “The Impact of the US-South Korea Free Trade Agreement on Taiwan’s SMEs, and Possible Response Strategies,” “Helping SMEs to Cope with the Rising Cost of Raw Materials – Alternatives to Credit Guarantees,” and “Business Models for SMEs in Emerging Hi-tech Service Industries.” These studies offer preliminary suggestions on measures that could be adopted, and constitute a useful reference both for government agencies (when formulating SME policy) and for SMEs.

Research projects on SME-related issues that will be undertaken in 2009 include: “Emissions Credits and Changes in the Energy Laws – The Impact on SMEs, and How they Can Respond,” “How Taiwan’s SMEs Can Leverage Information and Communications Technology to Strengthen their International Marketing Capabilities,” “The Normalization of Cross-Strait Economic and Trading Relations – The Impact on SMEs, and How they Can Respond,” “Feasibility Study on the Introduction of Innovation Certification for SMEs,” and “Making Effective Use of the SME Credit Guarantee Mechanism in Responding to the Global Financial Crisis.”

(2) The 2008 National SME Development Conference

The aim of the National SME Development Conference is to help Taiwan’s SMEs to achieve sustainable development, and to leverage the combined wisdom of industry, government, universities and research institutes in the formulation of an SME development strategy for the future. The first National SME Development Conference was held in 2005; it is intended that the Conference will be held once every three years, and that it will play an important role in the formulation of a medium- and long-term development strategy for Taiwan’s SME sector. The second National SME Development Conference was held on November 10–11, 2008. The Conference addressed 8 main themes (Figure 10-1-1) and 23 sub-themes. In all, 87 conclusions were reached over the course of the two-day Conference.

Implementation and monitoring of the proposals made at the National SME Development Conference: The Small and Medium Enterprise Administration has already begun to coordinate the implementation and monitoring of the proposals made at the

National SME Development Conference. The individual work items are as follows:

Figure 10-1-1 Key Themes of the 2008 National SME Development Conference



Source: Small and Medium Enterprise Administration, Ministry of Economic Affairs, 2009.

- a. The Administration has invited the Ministry of Economic Affairs' Industrial Development Bureau, the Bureau of Foreign Trade, Intellectual Property Office, Industrial Technology Department and Commerce Department to participate in the process of deciding which agencies should be given overall responsibility for implementing particular tasks, and which should be given an ancillary role.
- b. In principle, implementation of the conclusions reached at the Conference will be carried out by the individual bureaus, agencies and departments falling under the Ministry of Economic Affairs, with particular agencies being given overall responsibility for individual tasks and others being required to play a supporting role.
- c. Where inter-ministerial collaboration is necessary, this will be coordinated by the main implementing agency and the supporting implementing agencies.
- d. In principle, monitoring of the implementation of the conclusions reached at the National SME Development Conference will be implemented on a six-monthly schedule.
- e. A guidance report has already been submitted to the Ministry of Economic Affairs' SME Guidance System in December 2008.

- f. The conclusions will be incorporated into future policy implementation by the main implementing agencies and supporting implementing agencies, with the Small and Medium Enterprise Administration, Ministry of Economic Affairs undertaking follow-up and monitoring.

2. Provision of Information Relating to SME Development

(1) Publication of the Annual “White Paper on Small and Medium Enterprises in Taiwan”

In accordance with the provisions of Paragraph 3, Article 4 of the SME Development Statute and Items 4, 9 and 11 of the Guidelines for the Publication of the *White Paper on Small and Medium Enterprises in Taiwan* by the Small and Medium Enterprise Administration (SMEA), Ministry of Economic Affairs, the SMEA publishes the *White Paper on Small and Medium Enterprises in Taiwan* on an annual basis. The main objectives behind the publication of the *White Paper* are to provide timely, comprehensive information about SME development, to examine key socioeconomic trends and special issues that may affect SME development and undertake in-depth analysis of their possible impact, to examine and publicize government policies, new laws and regulations and new measures related to SMEs, including the results achieved, and to forecast how SME policy will evolve in the future.

After a two-stage process of review by the editorial committee, the Chinese-language version of the *White Paper on Small and Medium Enterprises in Taiwan, 2008* was published in September 2008. Besides distributing copies free of charge to those recipients specified by government regulations, the SMEA also arranged for the *White Paper* to be sold through those bookstores that are commissioned to distribute government publications. In addition, an English-language version of the *White Paper* was distributed to relevant agencies and organizations. Both the Chinese- and English-language versions can be viewed by the general public on the SMEA website.

(2) Publication of the “Handbook of Ministry of Economic Affairs Resources Available to Assist SMEs”

Every year, government agencies allocate considerable sums to SME guidance activities. To enable SMEs to acquire a thorough understanding of the government’s SME policy and of the measures implemented to assist SMEs, the government publishes the *Handbook of Ministry of Economic Affairs Resources Available to Assist SMEs*, which covers SME-related measures implemented by the various bureaus, offices and departments that fall under the Ministry of Economic Affairs (MOEA) in six main categories – strengthening SME financing, enhancing R&D capabilities, helping SMEs to upgrade and transform themselves, promoting marketing and the development of new business opportunities,

encouraging new business start-up, and revitalizing local economies – as well as four categories of ancillary measures: changes in the legal and regulatory framework, human resources, preferential terms for land acquisition, and service networks. The information on government resources and guidance services is presented in readily understandable form; the aim is for SMEs to be able to identify the types of government assistance that meet their own specific needs, thereby helping Taiwan's SMEs to achieve sustainable growth and development.

II Strengthening the Legal and Regulatory Adjustment Mechanism and Enhancing SMEs' Legal and Regulatory Knowledge

The inherent disadvantages under which SMEs labor make it difficult for them to compete on a level playing field against large enterprises. To help SMEs overcome this problem, in 1991 the government introduced the SME Development Statute (Appendix A), which provided a solid legal basis for the government's SME guidance policies and measures. In 2000, a new article was added to the Statute (Article 12-1) which stipulates that, when formulating or revising laws or regulations that are related to SMEs, government agencies must take into consideration the SMEs' scale of operations and their special features, so as to facilitate compliance by SMEs with these laws and regulations.

1. Promotion of the SME Legal and Regulatory Adjustment Analysis Mechanism

The promotion of the adjustment analysis of the legal and regulatory environment for SMEs began in 2004. By 2006, overall planning had been completed, and the process of training government agency personnel and canvassing the views of the private sector had begun. In 2007, a pilot project was implemented and targeted two specific areas, employing the adjustment analysis procedures that had been developed for the scheme. Planning for relevant ancillary measures was also undertaken in 2007. In 2008, the government began work on the development of case studies, and on research projects to examine how legal and regulatory adjustment has been carried out in other countries, for the reference of government agencies in Taiwan. Surveys were also carried out to identify useful sources of statistical data for the adjustment analysis process, and work began on the establishment of a legal and regulatory adjustment information platform. The key work items implemented in 2008, and the results achieved, are outlined below:

(1) Completion of the operational procedures and documentation for SME legal and

regulatory adjustment analysis: a. Compilation of the draft “Guidelines for SME Legal and Regulatory Adjustment Analysis”; b. Compilation of the “SME Legal and Regulatory Adjustment Analysis Operations Manual”; c. Compilation of five SME legal and regulatory adjustment analysis case studies, which were brought together with the five case studies undertaken in 2007 to produce a case studies report; d. Establishment of a Consulting Center (to review consulting processes and convene meetings of expert consultants); e. Collation of information relating to two SME legal and regulatory adjustment projects in the U.S.; f. Holding of six legal and regulatory adjustment analysis presentations; g. Establishment of an SME information platform.

- (2) Statistics on the revision of SME-related laws and regulations by relevant ministries and agencies: 2008 saw the introduction or revision of 34 SME-related laws and regulations by 10 government agencies – including the Bureau of Foreign Trade, the Commerce Department, the Investment Commission, the Bureau of Standards, Metrology and Inspection, the Industrial Development Bureau, the Ministry of Finance, the Ministry of Transportation and Communications, the Department of Health, the Environmental Protection Administration, and the Council of Labor Affairs – along with the Taoyuan County Government Fire Department at the local government level. These data reflect Taiwan’s commitment to ensuring across-the-board implementation of the SME legal and regulatory adjustment mechanism.

2. Activities to Increase SMEs’ Knowledge of the Legal and Regulatory Environment

To strengthen the SMEs’ knowledge of relevant laws and regulations, besides an active publicization effort, the government has also been providing consulting services, so as to reduce the level of harm caused to SMEs due to inadequate knowledge of the law. The activities held and results achieved in this area in 2008 are outlined below, and focus on the provision of legal information, consulting services, and promotional activities.

(1) Provision of Legal Information and Consulting Services to SMEs

a. Provision of Legal and Regulatory Information to SMEs

- (a) Establishment of an SME legal affairs consulting service website: The SME Legal Affairs Consulting Service Website has been established to provide a 24-hours-a-day legal and regulatory consulting service. In 2008, the website ranked first in keyword searches via Taiwan’s two leading online search sites. The web address of the SME Legal Affairs Consulting Service is: <http://law.moeasmea.gov.tw/>.
- (b) Publication of SME Legal and Regulatory Affairs Handbooks: In 2008, the SMEA

published *SME Labor Disputes – Points to Note Regarding Voluntary and Involuntary Termination*, with the aim of giving business owners a clearer understanding of the obligations that the Labor Standards Law imposes regarding the termination of labor contracts and severance pay, and the need to have employees sign non-competition agreements to ensure that corporate secrets are protected.

b. SME “Honorary Legal Consultant” Legal Consulting Service

As of 2008, the government had recruited 147 attorneys to serve as “Honorary Legal Consultants,” providing legal affairs consulting services by telephone and over the Internet; in 2008, these Honorary Legal Consultants handled a total of 1,384 cases. The largest category of cases were those relating to civil law disputes, followed by those relating to tax law or the commercial code, criminal disputes, issues relating to labor legislation, queries regarding compulsory execution and non-contentious matters, intellectual property rights, cross-strait legal matters, international trade law, fair trade law, and consumer protection law.

(2) Promotional Activities Linked to SME-related Legal and Regulatory Issues

a. Holding of Presentations on SME-related Legal and Regulatory Affairs Issues

Besides publicizing laws and regulations that concern SMEs, the SME Legal and Regulatory Affairs Presentations also provide a venue for answering SMEs’ legal and regulatory queries; SME representatives attending the presentations can obtain practical suggestions and advice on how to go about finding a suitable consultant. In 2008, a total of 12 SME Legal and Regulatory Affairs Presentations were held at various locations throughout Taiwan, with a total of 669 SMEs participating. 9 of the Presentations were concerned with general issues (chosen on the basis of SMEs’ real needs), and 3 were concerned with topical issues (specifically, the impact of the new Labor Insurance Pension system on SMEs, and the strategies that SMEs should adopt in response).

b. Activities Held to Increase Awareness of the Consumer Protection Law

(a) Presentations on How SMEs Should Respond to the Introduction of the Consumer Protection Law: The aim of these Presentations is to help SMEs to integrate consumer protection into their operations in such a way as to create a win-win situation for the consumer and the enterprise, thereby facilitating the achievement of sustainable development. In 2008, a total of 11 Presentations on How SMEs Should Respond to the Introduction of the Consumer Protection Law were held throughout Taiwan. The content included an overview of the content of the Consumer Protection Law and related laws and regulations, as well as the importance of giving due weight to consumer protection

and implementing proper handling of consumer complaints. There were opportunities for SMEs to ask questions and obtain consulting recommendations. In all, these Presentations were attended by nearly 600 people, including representatives of 573 individual SMEs.

- (b) Publish the *SMEs and the Consumer Protection Law* handbook: The *SMEs and the Consumer Protection Law* handbook has been published to accompany the government's consumer protection initiatives, with the aim of helping business owners and managers. The handbook is intended to provide a useful reference for SMEs when handling consumer disputes, and to help SMEs enhance their ability to deal with such disputes. The handbook can be downloaded from: <http://book.moeasmea.gov.tw/book/>.

III The Problems Facing SMEs and the Mechanisms for Helping Them to Overcome These Problems

1. Key Issues Facing Taiwan's SMEs, and SMEs' Needs

As of 2008, 97.70% of the more than 1.24 million business enterprises in Taiwan were SMEs. SMEs had combined annual sales revenue of NT\$10 trillion, and employed a total of 7.97 million people (representing 76.58% of the entire workforce). SMEs thus play a vital role not only in the economy but also in the maintenance of social stability; SMEs' flexibility and entrepreneurial vigor has driven Taiwan's economic development while also underpinning the stability of Taiwanese society. The hard work of Taiwan's SMEs deserves recognition, and when SMEs encounter difficulties, they deserve help in overcoming them. The main problems that Taiwanese SMEs face at present, and their immediate needs, are outlined below:

- (1) SMEs are often not fully aware of the range of government guidance resources available to them, thus necessitating the creation of local service networks: The range of different industries in which SMEs operate is very wide, and the types of support that they need from the government are equally varied. SME guidance resources are provided by a number of different government ministries and agencies, a situation which tends to lead to an excess dispersal of resources, or in some cases to duplication. There is a need for the establishment of "one-stop shopping" service windows and for the elimination of unnecessary paperwork, so as to improve the efficiency of guidance provision. The government should be working to establish local service networks that can meet SMEs' needs at the local level, providing an integrated, unified service window through which SMEs can access a wide range of government support and guidance measures, in line

with the philosophy of “apply locally, receive service locally.”

- (2) Some laws and regulations need to be adjusted to take account of changed circumstances: The appropriateness of laws and regulations can have a major impact on industrial development. Often, when formulating new laws, the government fails to take account of the ways in which these laws may impact SMEs negatively. The lack of transparency in the processes whereby new laws and regulations are formulated is another problem; SMEs have little opportunity to participate in this process or make their opinions heard, a situation which can create difficulties for them. The government should continue with the process of legal and regulatory adjustment, so as create a legal and regulatory environment conducive to SME development and minimize the negative impact of new laws and regulations on SMEs.
- (3) A need for improved business matching mechanisms to help SMEs develop overseas business opportunities: In the past, many Taiwanese SMEs exported their own products. Recently, however, the enhanced competition resulting from economic globalization, coupled with the continued existence of barriers to trade, has made it increasingly difficult for SMEs to achieve success in international markets. Most SMEs have very limited experience of international marketing and international distribution networks, and suffer from limited bargaining skills, a situation which makes developing international business opportunities even more difficult. The government will need to integrate both official and private-sector channels, both in Taiwan and overseas, to arrange business matching and exchange activities for SMEs, helping them to access overseas markets directly, secure the information they need, and achieve greater success in developing international business opportunities.
- (4) Taiwan’s SMEs suffer from inadequate innovation and R&D capabilities: The role that Taiwan’s SMEs play in the supply chain is generally that of the specialist ODM or OEM provider. The changes that have taken place in center-satellite systems in the past few years have put SMEs under increasing pressure to specialize and to develop business models that differentiate them from other firms. However, because of their limited size and limited resources, as well as their long-standing reliance on large-volume ODM/OEM production, Taiwan’s SMEs tend to have only very limited experience of innovation and R&D; this has put them at a disadvantage when faced with growing competition from Chinese and Indian firms in recent years. The government needs to develop channels whereby SMEs can apply for R&D project funding support via simplified, streamlined processes, while also putting the necessary supporting services and systems in place to help SMEs undertake innovation with a lower level of risk.

Adopting this strategy will help Taiwan's SMEs to achieve success in the development of new technologies and new products.

- (5) Given the difficulty of starting up a business in today's environment, the government should provide incubation support: With the dawning of the era of the knowledge economy, a transformation is needed in the role played by Taiwan's SMEs. Taiwan will be relying on SMEs to drive the growth of new industries and to revitalize the economy as a whole. The incubation support system that the government established in 1996 will need to focus on the cultivation of a new generation of entrepreneurs whose activities are in line with the nation's medium- and long-term development vision. The government should be working to identify important emerging industries whose growth it should be stimulating, and should work actively to support the establishment of technology-intensive and knowledge-intensive new business enterprises, while also developing integrated service networks tailored to meet start-ups' real needs.
- (6) SMEs need help to upgrade and transform themselves: In the past, Taiwan possessed many traditional industries that were closely linked to their local communities, such as the ceramics industry in Yingko, Hsinchu glass-making, Sanyi wood-carving, the preserved fruits industry in Ilan County, etc. Today, however, a high percentage of these traditional industries are in difficulty. There is an urgent need for the government to coordinate the integration of private-sector, university and research institute resources to support the revitalization of these traditional industries, while also encouraging cross-industry alliances and the development of new technology applications. With proactive guidance from the government, it should be possible for these industries to upgrade and transform themselves.
- (7) SMEs need easier access to financing: Obtaining access to financing has always been a major obstacle hindering the development of SMEs. Today, while many of Taiwan's SMEs possess unique technology or innovative products, the venture capital industry's fixation on the hi-tech sector forces these firms to rely on loans from friends and relatives or from "unofficial" lenders. The sizes of the loans that they can obtain from these sources are limited, which has a direct, negative impact on these SMEs' growth. The government has an important role to play here by implementing high-profile investment in SMEs through government investment funds and through the provision of credit guarantees. In the short term, the government could focus on identifying those SMEs whose growth would support the achievement of the government's medium-term and long-term economic development goals; in the longer term, more effort will be needed to encourage private-sector investment in the SME sector, while at the same time

encouraging SMEs to adopt more rigorous management systems that can strengthen their financial structure.

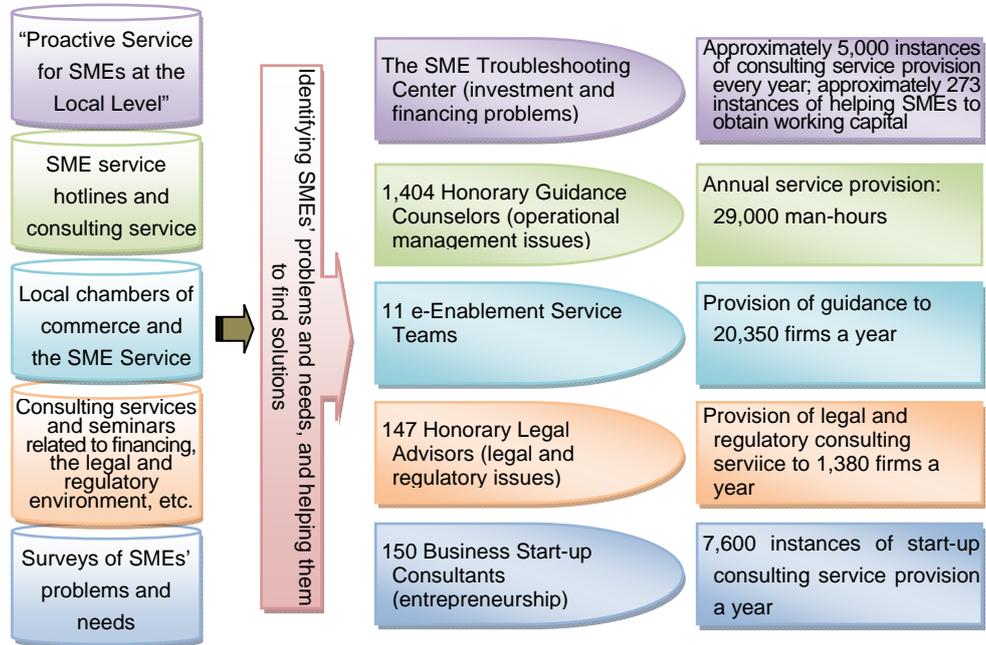
- (8) The need to improve the quality of SMEs' human resources: Taiwan's SMEs have difficulty in attracting, cultivating, retaining and making effective use of high-quality human talent. The government should be working to step up the implementation of manpower cultivation programs and programs to recruit hi-tech talent from overseas, in line with national development goals and industrial development strategy. The alternative national service system should be adjusted, by reducing the quotas allocated to the Ministry of the Interior and the Ministry of National Defense and increasing the quotas allocated to the SME sector, while at the same time relaxing the restrictions and review criteria that apply to national service manpower utilization. There is also a need for closer coordination with the Council of Labor Affairs, Executive Yuan, to ensure that, when a foreign laborer policy is being formulated, the manpower needs of industry are taken into account, thereby helping to relieve the shortage of low-level production workers.

2. The Channels and Mechanisms Through Which SMEs Can Receive Help in Solving Their Problems

Currently, the SMEA provides SME services related to SME management, upgrading and transformation, new business start-up, revitalization of local economies, financing and credit guarantees, and legal and regulatory adjustment, etc., through a wide range of channels and networks that are readily accessible both to business enterprises and to individual would-be entrepreneurs. These channels include: a. "Proactive Service for SMEs at the Local Level" presentations; b. SME service hotlines and consulting service websites; c. Services provided through local chambers of commerce and the SME Service Centers in each county and city; d. Consulting services and seminars relating to financing, the legal and regulatory framework, etc.; e. Surveys of SMEs' problems and needs, etc.

Various mechanisms have been put in place to help SMEs with different types of problem. These include: the SME Troubleshooting Center (investment and financing issues); the appointment of 1,404 Honorary Guidance Counselors (issues related to business operations); the creation of 11 e-Enablement Service Teams (e-enablement issues), the appointment of 147 Honorary Legal Advisors (legal and regulatory issues), and the appointment of 150 Business Start-up Consultants (entrepreneurship), etc. The results achieved in 2008 through these assistance channels and mechanisms – in terms of helping SMEs to solve their problems – are shown in Figure 10-3-1.

Figure 10-3-1 The Channels and Mechanisms Whereby SMEs Can Receive Assistance with Their Problems, and the Results Achieved



Source: Small and Medium Enterprise Administration, Ministry of Economic Affairs, 2009.

Chapter 11

Building Business Start-up and Innovation Platforms

The main task in business start-up guidance is to create an environment conducive to the growth of first-class small and medium enterprises (SMEs). This involves investment in the establishment of new incubator centers, encouraging public bodies and the private sector to set up new incubator centers, providing support for start-up financing, human resources development, and international activities. The overall goal is to provide comprehensive support for SME start-up and innovation.

The following sections outline the key measures and plans adopted during the implementation of this project over the period from January 2008 to June 2009, the work performed and the results achieved.

I Incubation Centers

1. Incubation Guidance

In 1997, the Small and Medium Enterprise Administration (SMEA), Ministry of Economic Affairs began to work with other government agencies, research institutes, universities and private-sector companies to promote the establishment of incubator centers to cultivate start-ups, contribute to the development of new products and new technologies, and help SMEs to upgrade themselves. Incubator centers provide SMEs with space and facilities, as well as technical, manpower, commercial, information and administrative support and funding and managerial consulting services, thereby reducing the level of risk that new businesses are exposed to when they are first starting up or just embarking on new R&D projects. Incubator centers thus help to increase the chances that a new business venture will be successful.

As of June 2009, there were a total of 109 incubator centers in Taiwan, located in 22 different counties and cities. The Ministry of Economic Affairs provided guidance for the establishment of 91 of these, providing a combined total of NT\$2,032 million in funding support. Incubator centers established directly by the Ministry include the Nankang Software Incubator (which provides guidance and support for the information, communications and software industry), the Nankang Biotech Innovation Center, (biotech industry), the Southern

Taiwan Science Park Incubator Center (biotech, electronics, information and precision machinery industries), and the Kaohsiung Software Incubator Center, which is scheduled to begin operations in October 2009, and which will help support the development of the digital content, multimedia and information and communications services industries in Southern Taiwan.

As regards the regional distribution of incubator centers and the categories to which they belong, Northern Taiwan has the largest concentration of incubator centers, with a total of 46, followed by Southern Taiwan with 33. Incubator centers in Taiwan can be divided into four main categories. University incubator centers are the most numerous (90 centers); there are also 9 incubator centers established by foundations, and 10 established by government agencies. The regional distribution and distribution by category are shown in Table 11-1-1.

Table 11-1-1 Incubator Center Categories and Regional Distribution

Incubator Center Category	Total	Northern Taiwan	Central Taiwan	Southern Taiwan	Eastern Taiwan
Total	109	46	25	33	5
University incubator center	90	38	20	28	4
Foundation incubator center	9	3	4	1	1
Government-established incubator center	10	5	1	4	0

Source: Small and Medium Enterprise Administration, Ministry of Economic Affairs, 2009.

Table 11-1-2 The Results Achieved by Taiwan's Incubator Centers, 2007–2009

Performance	Year	Year			Cumulative Performance, 1997 – June 2009
		2007	2008	Jan. – June 2009	
Inputs	Funding support for incubator centers (NT\$ millions)	172	176	175	2,032
	SMEs cultivated by incubator centers	1,356	1,433	1,321	3,590
Outputs	Innovation-oriented SMEs cultivated by incubator centers	525	671	604	1,214
	Number of persons employed by firms located in incubator centers	27,133	35,345	23,188	80,881
	Increase in capitalization of firms located in incubator centers (NT\$ millions)	5,200	6,600	2,800	54,700
	(New venture capital investment) (NT\$ millions)	(1,796)	(2,839)	(2,114)	(16,112)
	Ratio of outputs to inputs (increase in capitalization divided by total funding support)	30.00	37.50	15.96	26.92
	No. of patents secured by firms located in incubator centers	416	402	0	1,944
	No. of instances of technology transfer implemented by firms located in incubator centers	149	181	0	848
No. of firms cultivated by incubator centers that secured stock market or OTC listing	6	5	0	45	

Notes: 1. Ratio of outputs to inputs = increase in capitalization of firms located in incubator centers ÷ total amount of funding support provided to incubator centers.

2. In principle, firms will normally be located in an incubator center for a maximum of three years; the figures for the number of firms cultivated and for the number of employees are based on the number of firms located in incubator centers in the year in question.

3. Increase in capitalization is the sum of additional venture capital investment and capital increments due to business expansion.

Source: Small and Medium Enterprise Administration, Ministry of Economic Affairs, 2009.

Regarding the industries that individual incubator centers seek to support, 27% of Taiwan's incubator centers are oriented towards supporting the IT and electronics industry, followed by the biotech and healthcare field (22%), electromechanical equipment (16%), the chemical industry (6%), environmental industries (4%), other industries (8%), tourism and leisure (2%), culture and the arts (6%), multimedia and broadcasting (4%), and materials production (5%).

Incubator center performance: In 2008, the government provided total funding of NT\$176 million to incubator centers. In the same year, Taiwan's incubator centers successfully cultivated 1,433 new start-ups, including 671 innovation-oriented start-ups. The total number of people working at firms located in incubator centers was 35,345. Firms located in incubator centers secured a total of 402 patents, and implemented 181 instances of technology transfer. 5 firms cultivated in incubator centers secured stock market or OTC listing. The cumulative performance of Taiwan's incubator centers over the period from 1997 to June 2009 is shown in Table 11-1-2.

2. Incubator Centers – Creating Value through Collaboration between Industry and Universities

Faced with the globalization of competition, the rapid pace of change in technology and the emergence of the knowledge economy, the advanced nations have been investing heavily in the development of their universities, with the aim of cultivating creative, innovative students. Taiwan's universities possess the finest research resources in the country. The challenge is to employ systems planning and concentration of resources to leverage Taiwan's existing capabilities in the area of industry-university collaboration in upgrading the technological competitiveness of Taiwan's SMEs. In 2008, the Science and Technology Advisory Group, Executive Yuan began implementation of a new Creating Value through Industry-University Collaboration plan, which integrates the resources of the Ministry of Economic Affairs, the Ministry of Education, and the National Science Council. The plan's three key strategic objectives are to bring about a doubling of universities' income from intellectual property rights development and technology transfer, a doubling of the amount of research funding that universities receive from business enterprises, and a doubling of the number of new start-ups cultivated by universities, by 2011. The role played in this plan by the SMEA is to strengthen the capabilities of universities' incubator centers and help to build a sound environment for the development of new business enterprises.

3. Improving the Incubator Center Development Environment

The key work items here include:

- (1) Planning incubator center development strategy: This involves examining the feasibility of ways in which incubator centers can upgrade and transform themselves, developing mechanisms for post-incubation guidance, the establishment of business models for collaboration between universities and industry, and the development of innovation system support mechanisms.
- (2) Sharing of knowledge and information related to business start-up and incubation: Strengthening the functioning of websites that bring together incubator center knowledge and information, expanding industry-specific expert communities, and using the holding of incubation forums and participation in international incubation activities to enhance the guidance capabilities of Taiwan's incubator centers.
- (3) Publicizing the government's incubation strategy: Organizing joint exhibitions, presentations and collaborative promotional activities, establishing awards for outstanding incubator center performance, establishing mechanisms for the identification of start-ups with especially high potential, the provision of matching services for firms that have "graduated" from incubator centers, and the development of relevant online mechanisms, etc.

4. Establishment of Industry-specific Incubation Networks

To achieve effective coordination of the resources of Taiwan's incubator centers, it has been decided (based on the Executive Yuan's identification of six major emerging industries) to build industry-specific incubation networks for the biotech and healthcare industry, the green energy industry, the cultural and creative industries, and the ICT industry. The aim is to be able to provide companies at different stages of development that are located in incubator centers with more comprehensive, more professional service. The key work items here are as follows:

(1) Planning the Formation of Incubation Networks:

- a. Industry-specific incubation networks will be established that will make effective use of the technological, managerial, marketing and other guidance capabilities of their members. A roadmap for the future development of the industry in question will be formulated, and the resources of the industry-specific network will be effectively coordinated to guide the network members to make full use of their capabilities, thereby ensuring that the network as a whole functions smoothly.
- b. Helping industry-specific networks to develop projects for industry-university collaboration, identifying high-potential industry-specific projects (i.e., firms with the potential for high growth, high value creation and high levels of linkage) and developing appropriate

guidance mechanisms.

(2). Guidance and Services:

- a. Aiming to provide service for all SMEs in Taiwan, and proactively offering relevant consulting and diagnostic services.
- b. Planning and designing feasible service models and processes, and leveraging the implementation of these services models and processes to promote industry-university collaboration in the industry in question, while also promoting the establishment of first-rate start-ups in that field.
- c. Publicizing the development of the incubation networks, organizing manpower cultivation activities, holding business fairs, exhibitions, competitions, presentations and fact-finding trips, etc., so as to support the upgrading of the industry in question.

5. Cultivating Specialist Incubation Talent

Through the cultivation of specialist talent and the building of a digital learning environment, this plan will strengthen Taiwan's incubation services and consulting services capabilities, thereby making it possible to provide more effective specialist assistance in the areas of innovation, R&D and business management, and in so doing increase the success rate for new enterprises and boost the competitiveness of Taiwan's SMEs. The key work items in this area are as follows:

- (1) Promoting the development of a specialist incubation talent cultivation and certification system.
- (2) Organizing manpower cultivation activities for specialist incubation talent.
- (3) Business start-up and innovation knowledge diffusion and exchange.

6. Establishing Platforms for the Integration of Resources between Industry and the University Sector

The main objective behind the establishment of the industry-university collaborative research resources integration platform is as follows: to provide the guidance needed so that SMEs can make effective use of the R&D results achieved by universities and research institutes in the development of new products and new industries, thereby promoting closer collaboration between industry and the university sector, and enhancing Taiwan's overall economic effectiveness. The key work items are as follows:

- (1) Establishment of a platform for the integration of R&D results: This will involve the building of an integration platform for information related to R&D results, to create an

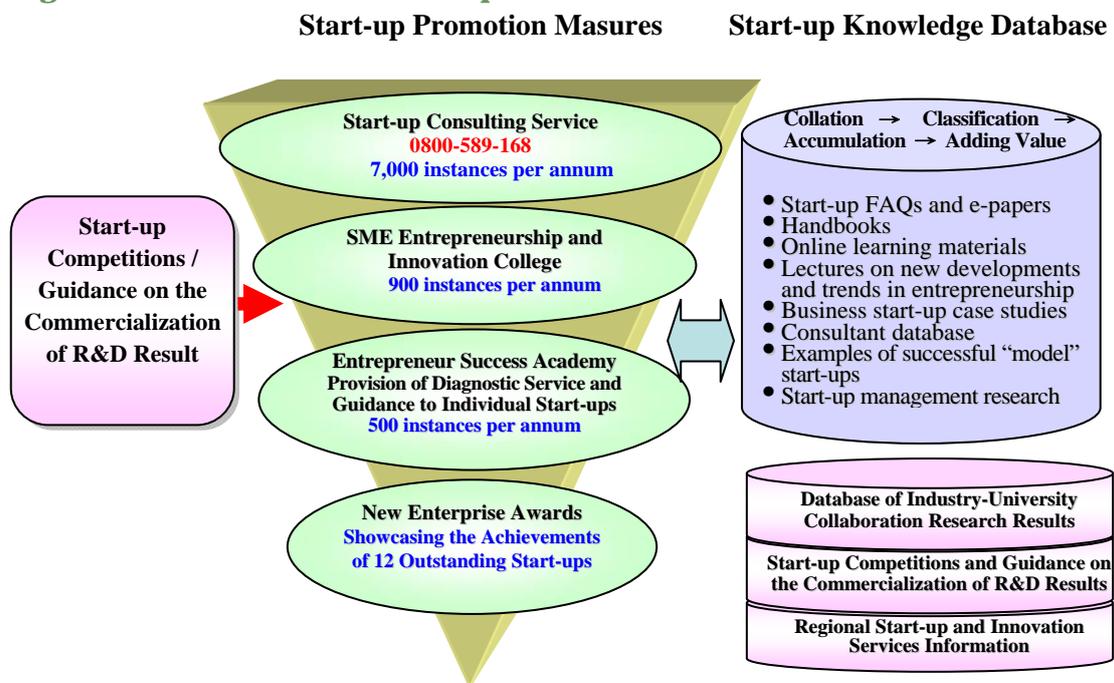
integrated database that covers a wide range of technologies and multiple different research units.

- (2) Sub-industry development planning: An inventory will be taken of the R&D results achieved by universities and research institutes in Taiwan, leading on to the compilation of sub-industry development planning reports for six sub-industries: LED lighting, solar cells, CMOS imaging sensors, remote medicine applications for wireless sensor networks, 3D image displays, and Radio Frequency ID (RFID) technology.

II Providing Assistance for New Business Start-up

In 2004, the SMEA initiated the New Business Actualization Plan, which incorporated a series of guidance measures to enable would-be entrepreneurs to realize their ambitions. The main methods used to assist entrepreneurs are outlined in Figure 11-2-1 below:

Figure 11-2-1 Business Start-up Promotion Methods



Source: Small and Medium Enterprise Administration, Ministry of Economic Affairs.

1. The Business Start-up Consulting Service Plan – Providing Information and Consulting Services to Assist SME Start-up

To help would-be entrepreneurs and the owners of existing small businesses to make their dreams a reality, the government has provided business start-up information and consulting

services. These services help citizens to carry out the preparatory work that is necessary when starting a new business, thereby increasing the likelihood that their entrepreneurial efforts will be successful. The key work items of the Business Start-up Consulting Service Plan are as follows:

- (1) **Start-up Consulting Services:** These cover enterprise management, marketing, finance, legal affairs, intellectual property rights, and human resources, etc. Recommendations and solutions are provided through a toll-free start-up consulting services hotline (0800-589-168) and through free consulting and diagnostics provided by a team of expert consultants.
- (2) **Start-up Knowledge Information Platform:** The Entrepreneur Success Network (<http://sme.moeasmea.gov.tw>) brings together a wide range of information related to the legal framework for new business start-up, loans for new businesses, related news items, and start-up management, etc. The Network's "Electronic Kitchen Window" sub-site uses a virtual marketing platform to help new businesses develop their distribution channels.
- (3) **Business Resource Matching Platform:** This Platform helps would-be entrepreneurs to identify the resources they need; the Platform contributes to reducing the cost incurred when starting up a new business.
- (4) **Business Start-up e-Paper:** The Business Start-up e-Paper, issued on a regular basis, provides the latest news and information of interest to entrepreneurs, as well as information about new government guidance services and measures.
- (5) **Business Start-up Periodicals:** The government publishes various start-up management periodicals and handbooks; the former are positioned as academic journals, while the latter are designed for the use of people trying to start their own business for the first time.
- (6) **Business Start-up Activities and Lectures:** A wide range of business start-up-related activities and lectures are held, including conferences, and seminars for the sharing of experiences, etc. Through these activities, entrepreneurs can keep up-to-date with the latest developments and trends in entrepreneurship and business management.

2. Entrepreneur Cultivation – The SME Entrepreneurship and Innovation College

The SMEA provides would-be entrepreneurs with a wide range of avenues through which they can undergo training. These training programs transmit specialist business knowledge, and include opportunities to share experiences, thereby helping new entrepreneurs to build

up their own capabilities. The SME Entrepreneurship and Innovation College enables would-be entrepreneurs to undertake on-going training and cultivation; it includes both a physical college and an online college.

- (1) Entrepreneur Cultivation Program – Introductory Courses: The Introductory Courses seek to provide a comprehensive overview of basic entrepreneurial knowledge, while taking local variations and market trends into account. Trainees acquire core skills and the keys to future entrepreneurial success; over the course of the program, trainees have the opportunity to formulate their own personal business plan that will help them to create value within their own particular industry or field. The individual courses include: general courses, courses for female entrepreneurs, hi-tech business start-up courses, restaurant industry start-up courses, e-commerce courses, tourism and leisure industry start-up courses, healthcare industry start-up courses, and design services start-up courses.
- (2) Entrepreneur Cultivation Program – Intermediate Courses: The Intermediate Courses involve the use of lectures, hands-on training, experience sharing and case studies to strengthen entrepreneurs' abilities in the areas of business management, innovation and new business start-up. The individual courses include: market analysis, marketing, human resources, finance, new technology, and new business models, etc.
- (3) Entrepreneur Cultivation Program – Advanced Courses: The Advanced Courses seek to encourage the development of innovative business start-ups. The courses are integrated with the provision of government subsidies, so as to reduce the cost of undertaking R&D (and the attendant risk). Focusing on the Small Business Innovation Research (SBIR) and Assist Service Sector Technology Development (ASSTD) Plan, the courses teach entrepreneurs how to write effective SBIR plan and ASSTD plan proposals.
- (4) Online College: The Online College incorporates an e-learning zone, class discussion zone, photo downloading zone, and personal accounts zone, etc. Through the Online College, entrepreneurs and would-be entrepreneurs can undertake learning anytime, and from any location.

3. Business Start-up Guidance – the Entrepreneur Lab

The Entrepreneur Lab was established to provide assistance and guidance for would-be entrepreneurs and for SMEs that have been in existence for less than three years; it provides specialist consulting and guidance services to help entrepreneurs overcome the problems that they may experience when starting up or running a business. The Entrepreneur Lab's key work areas are as follows:

- (1) In-depth guidance for enterprise management: The Entrepreneur Lab provides guidance for brand development planning and for securing professional certification, along with short- and medium-term consulting services. The aim is to help new businesses strengthen their management capabilities and enable them to grow and thrive.
- (2) Technology guidance and matching services: A guidance and recommendation mechanism has been established for start-ups that, having received individual guidance, are also in need of technology matching services. The Entrepreneur Lab can also arrange for the provision of technology matching guidance by incubator centers and industry-university collaboration centers.
- (3) Business matching activities: The Entrepreneur Lab organizes business matching activities to promote exchange among would-be entrepreneurs, start-ups and investors. These activities help to give start-ups more exposure in the media, and create new opportunities for collaboration.
- (4) Start-up corridor: The Entrepreneur Lab leverages government resources and media coverage to showcase the achievements of successful start-ups, providing enhanced media exposure and helping to boost enterprise name recognition.

4. Honoring Successful Start-ups through the Business Start-up Awards

The annual Business Start-up Awards are held to identify new businesses with great potential; the Awards help to encourage the development of new technology, new designs, new products and new services.

- (1) Eligibility: All new businesses that have been established within the past three years are eligible to take part.
- (2) Achievements on which the granting of the Awards is based: Independently developed new products, new technologies, new processes and new services.
- (3) Awards Sections: The Awards are divided into four sections – technology-intensive niche industries, innovative traditional industries, strategically important knowledge-based service industries, and micro-enterprises.
- (4) Number of awards presented: Awards are presented to a total of 12 enterprises (3 in each section).
- (5) Prizes: (a) The prize money totals NT\$2.4 million, with the top three firms in each section receiving NT\$300,000, NT\$200,000 and NT\$100,000, respectively, along with trophies and commemorative plaques. (b) Special activities in which the winners can take

part include an Award-winners Study Camp and product display activities. (c) Follow-up is undertaken through the provision of guidance and diagnostic services by experts. (d) Access to resources – Award-winners enjoy special funding assistance and grants for R&D activity.

III Female Entrepreneurial Activity and Related Enterprise Guidance Resources

In the past few years, there has been a pronounced increase in female entrepreneurial activity throughout the globe. Governments in every part of the world, as well as leading international economic and trade organizations, have been working actively to encourage women to start their own businesses. In Taiwan, the relevant government agencies have also been implementing a number of female entrepreneurship guidance initiatives, encouraging women to become economically independent, and improving female entrepreneurs' chances of success. The key work items included in these guidance measures are outlined below:

1. Organization of Mutual Assistance Networks for Female Entrepreneurs

The government has established the Female Business Owners Consultative Committee and Female Entrepreneurship Volunteer system to help get female-owned businesses in Taiwan working together, and to facilitate the integration of relevant resources and information so that female entrepreneurs can secure more wide-ranging assistance. In this way, the process of new business establishment by female entrepreneurs can be made smoother, assisted by business matching activities that can help women to develop networks of personal contacts and build up experience. The SMEA and the Executive Yuan's Central Taiwan and Southern Taiwan Joint Services Centers have already assisted with the establishment of Northern, Central and Southern branches of the Female Business Owners Consultative Committee, with a combined total of 89 committee members. The Committee helps to build networks for the exchange of ideas and information between female entrepreneurs, and helps female-owned businesses to access a wider range of assistance. In addition, a Female Entrepreneurship Volunteer system has been established, making use of existing guidance service mechanisms. This system involves the recruitment of female "honorary guidance providers," female entrepreneurship consultants and female attorneys (working on a pro bono basis) who can assist with the delivery of government resources, and can provide specialist consulting services related to new business start-up, legal affairs and business management, working together with female-owned businesses as they develop and grow.

2. Business Start-up Information Exchange Platforms

- (1) The Female Entrepreneurs segment of the New Business Actualization Plan: The SMEA has established a Female Entrepreneurs segment within the New Business Actualization Plan (<http://sme.moeasmea.gov.tw>) to provide female-owned businesses with relevant guidance information and resources.
- (2) The “Women Village” network: Managed by the Women Village foundation, the Women Village network has as its objective the establishment and operation of platforms for the exchange of information and resources for female entrepreneurs provided by government agencies, non-profit organizations and private-sector bodies. This covers everything from basic e-commerce to more advanced money flow, logistics and online transaction functions, supplemented by training programs and guidance measures, with the overall goal of boosting the efficiency of female entrepreneurs.
- (3) The “Women Business” portal site: TAITRA has established the “Women Business” portal site (<http://womenbusiness.taiwantrade.com.tw>) as part of its Taiwan Trade site. The main purpose of this site is to help female-owned businesses to leverage online marketing in the development of international markets.

3. Specialist Consulting and Guidance Services for Female-owned Businesses

Starting in 2008, the SMEA’s SME Start-up and Innovation Service Centers provide female-owned businesses with a new channel through which they can access consulting services, thereby helping female entrepreneurs to make effective use of the resources available from the government, and obtain the specialist business start-up, legal affairs and business management consulting services that they need. In this way, the Service Centers contribute to the development and growth of female-owned businesses. So far, the Service Centers have provided assistance to 3,374 female entrepreneurs.

4. Strengthening Women’s Entrepreneurial Capabilities

- (1) Organizing entrepreneurship training programs for women: Working together with the SME Entrepreneurship and Innovation College, a series of training programs have been launched that are specially tailored to meet the needs of female entrepreneurs; for women who are interested in starting their own business, these programs will increase the likelihood of the venture being successful. Subsidies are also being provided to support research on female entrepreneurship, leveraging the resources of the university sector to gain a clearer understanding of the current situation facing female entrepreneurs in Taiwan and develop policy recommendations.

- (2) The “Female Entrepreneurship Concern Train”: The government has launched the “Female Entrepreneurship Concern Train” activity to provide opportunities for female business owners to exchange ideas and experience, and to benefit from management advice and psychological support and encouragement.
- (3) Helping female entrepreneurs to take part in award schemes and obtain government subsidies: The Entrepreneurs Consulting Center is providing assistance in this area by identifying female-owned businesses with significant growth potential, and helping them to participate in award schemes and competitions and apply for government subsidies.
- (4) Encouraging female entrepreneurs to participate in international activities: The government provides recommendations to enable female business owners to take part in international female entrepreneurship activities – such as the APEC Women Leaders Network (WLN), the Global Summit of Women, and the meetings of the International Council for Small Business (ICSB), thereby helping female businesspeople in Taiwan to undertake international exchange and keep up-to-date with global trends.

5. Financing Support for Female Entrepreneurs

Funding is the most vital resource for female entrepreneurs. The following types of low-interest loan are available to women:

- (1) Young Entrepreneur Loans: The National Youth Commission, Executive Yuan provides Young Entrepreneur Loans for entrepreneurs aged between 20 and 45; to be eligible, they must be the owner of, or a shareholder in, a firm that has been in existence for less than three years (<http://www.nyc.gov.tw>). Loan applicants can also use credit guarantees provided by the SME Credit Guarantee Fund to obtain bank loans.
- (2) Phoenix Micro-enterprise Loans: In 2009, the Council of Labor Affairs combined the existing Micro-enterprise Start-up Loan program and Phoenix Small-value Loans for Female Entrepreneurs program to create the Phoenix Micro-enterprise Loans program. These loans are available to women aged 20 – 65, and to men aged 45 – 65; individual loans are capped at NT\$1 million. Loan applicants must submit their application to the Council of Labor Affairs; when an application is approved, the Council will arrange for a financial institution to provide the loan. Applicants can use credit guarantees provided by the SME Credit Guarantee Fund to secure bank loans.
- (3) Preferential interest rates for members of disadvantaged groups: To assist members of disadvantaged groups, the Council of Labor Affairs, Executive Yuan provides a three-year interest payment exemption for recipients of Phoenix Micro-enterprise Loans who have been involuntarily unemployed for over 6 months, are members of a family in

special circumstances, are victims of domestic violence, are victims of crime, or are victims of a natural disaster; from the fourth year onwards, such individuals pay a preferential interest rate of 1.5%, with the Council of Labor Affairs making up the difference (<http://beboss.cla.gov.tw>).

IV Manpower Cultivation

1. The SME Lifelong Learning Passport

To encourage SME employees to undertake lifelong learning and to help build an environment conducive to lifelong learning, since 2000 the SMEA has been working through the SME Training Centers to implement the SME Lifelong Learning Passport scheme, whereby participants can maintain a complete record of the lifelong learning activities that they have undertaken, and can adjust the direction of their lifelong learning in line with their own needs.

To encourage people to participate in the SME Lifelong Learning Passport scheme, an annual SME Lifelong Learning Passport Awards Ceremony is held to honor individuals who have achieved outstanding lifelong learning results, and also SMEs and training providers who have made a major contribution to the promotion of the SME Lifelong Learning Passport system. The awards include the Diligent Learning Award, Organizational Learning Award, and Award for Outstanding Contributions to the Promotion of the SME Lifelong Learning Passport System.

2. Information about Training Opportunities – the Government’s Education and Training Integrated Services Network

To achieve effective integration of the information about education and training programs released by different government agencies through the creation of a single information window available to ordinary members of the public, enterprises, training providers and government agencies, in 2007 the SMEA established the Government Education and Training Integrated Services Network (<http://get.nat.gov.tw>), which collates news and information about education and training programs from 10 government agencies, thereby enabling individuals and firms to obtain more rapid access to this information, and providing access to new learning channels for SME employees.

3. The SME Technology and R&D Talent Cultivation Program

To help Taiwan’s SMEs to reorient themselves towards innovation, R&D, design, and the development of high-value-added products and services, in 2005 the government launched

the SME Technology and R&D Talent Cultivation Program, with the aim of giving SMEs access to the R&D and technology that they need to upgrade and transform themselves.

The successive themes of this program have included “Precision Motor Electromechanical Technology R&D Applications” and “Developing Unique, Innovative Products.” The cultivation program is implemented in three stages: preliminary training in Taiwan, followed by advanced training overseas, after which the trainees return to Taiwan to apply what they have learned. It is anticipated that this program will help to speed up the pace of SME upgrading and transformation, while also enabling Taiwan’s industries to develop enhanced competitiveness based on core technology. By applying key technologies and methods developed overseas, it should be possible to enhance the overall R&D capabilities of Taiwan’s SMEs and further their internationalization. As of 2009, 153 individuals had participated in the SME Technology and R&D Talent Cultivation Program, and many of the participants had subsequently contributed to the development of new products and the securing of new patents.

4. SME Management Leadership Course

To help SMEs’ senior managers respond effectively to the rapidly changing global political and economic environment, since 2002 the SMEA has been implementing the SME Management Leadership Course program, with the aim of cultivating outstanding business leaders with an international outlook.

The Course is held every year in Northern, Central and Southern Taiwan; at the end of the Course, all of the trainees take part in an SME Management Leadership Conference, at which business administration experts and business owners share their experiences regarding the latest international trends and practical business management; trainees from previous years are also invited to participate, with the aims of building a continuing tradition through the handing down of experience and knowledge, and supporting the development of enterprise resource networks and the formation of leadership communities. Since the program was first initiated, a total of 938 SME managers have undergone training. To maximize the benefits that they receive from the training, the trainees have established their own “alumni organization,” which organizes regular advanced training programs and visits, thereby contributing to cross-industry exchange and economic growth.

5. Results Achieved in Manpower Cultivation Program Implementation

The results achieved through the implementation of the SMEA’s manpower cultivation programs are summarized in Table 11-4-1.

Table 11-4-1 Results Achieved in the Implementation of Manpower Cultivation Programs

Work Item	Results Achieved	Work Item	Results Achieved
SME Training Centers	Over 182,500 SME Lifelong Learning Passports issued over the period 2000 – 2009	Financial management / Financial management consulting / Accounting	2,342 individuals trained over the period 2001 – 2009
	406 training providers approved over the period 2000 – 2009	Management Consultant Training Course	759 individuals trained over the period 1992 – 2009
SME Online College	Site visited on 6.03 million occasions over the period from 2003 to June 2009	SME Management Leadership Course	938 individuals trained over the period 2003 – 2009
	874 courses provided over the period from 2003 to June 2009	Technology and R&D Talent Cultivation Program	153 individuals trained over the period 2005 – 2009
	325,000 members registered over the period from 2003 to June 2009	Financial Knowledge Dissemination	3,559 individuals trained over the period 2006 – 2009

Source: Small and Medium Enterprise Administration, Ministry of Economic Affairs.

V Participation in International SME Activities

Taiwan's achievements in SME development have won widespread international recognition; Taiwan is often listed as a country from which other countries can learn in this area. Active participation in international trade organization meetings and activities not only helps to enhance Taiwan's international visibility, but it also provides opportunities for Taiwan to share its experiences in SME development with other countries, while at the same time learning from those countries, and helping to create new opportunities for international exchange and business cooperation. In this way, participation in international SME activities contributes to the sustainable development of Taiwan's SMEs.

The main international SME activities in which Taiwan participated in 2008 are listed below:

1. The Hosting of the 26th Meeting of the APEC Small and Medium Enterprises Working Group

The 26th Meeting of the APEC Small and Medium Enterprises Working Group (SMEWG) and the related meetings were held in Kaohsiung over the period from March 30 to April 4, 2008. In all, five meetings were held, and were attended by more than 500 senior government officials, academics and business leaders from 21 APEC member economies and 6 observer economies. The individual activities, and the dates on which they were held, are outlined below:

(1) The APEC SMEWG Pandemic Influenza Trainer Workshop

The APEC SMEWG Pandemic Influenza Train the Trainer Workshop was held on March 30, 2008. Chaired by the U.S., the Workshop focused on trainer training, providing instruction regarding pandemic influenza prevention methods and case planning. The participants included 4 instructors from the U.S. and Australia, and 24 trainees from 12 APEC member economies (including Peru).

(2) The APEC High Level Meeting on Driving SMEs' Growth to Promote Local Development

Chaired by Taiwan, the APEC High Level Meeting on Driving SMEs' Growth to Promote Local Development was held over two days, on March 31 and April 1, 2008. The topics for the six sessions were: strategies and methods for promoting local development; building a sound local governance environment for SMEs; encouraging local enterprises to innovate, and promoting entrepreneurial activity; providing financial support for SMEs at the local level; local market development strategies for SMEs; and building partnerships for local development. The Meeting had more than 300 participants, from Taiwan and overseas, with 20 speakers from 12 APEC member economies.

(3) The APEC Tax Compliance Seminar

Held on April 2, 2008, the APEC Tax Compliance Seminar was chaired by New Zealand. The Seminar was held in line with the proposals made by the APEC Leaders Summit regarding changes to administrative procedures to promote private-sector development and simplify business operation; participants included business leaders, tax officials, officials specializing in tax-related legal affairs, and tax law researchers from APEC member economies. The discussion focused on tax law in the APEC member economies, and on helping those responsible for formulating tax law, with the aim of reducing the constraints imposed by tax law and ensuring that tax law can be implemented more efficiently so as to help improve competitiveness.

(4) The APEC Conference on SME Strategy Planning

The APEC Conference on SME Strategy Planning was held on April 3, 2008, chaired jointly by Taiwan and Peru. The discussion focused on the evolution of the SMEWG's organization and its key tasks over the next four years; participants were limited to members of the SMEWG. During the conference, Taiwan gave a report on Taiwan's strategy of giving priority to SME development. It was decided that the main focus of the SMEWG's activities over the period 2008 – 2012 would be on helping to create a policy environment conducive to small business development, and on encouraging small businesses to develop international markets. A list of priority work items was formulated.

(5) The 26th Meeting of the APEC SMEWG

Held over three days from April 2 to April 4, 2008, the 26th Meeting of the APEC SMEWG was organized jointly by Taiwan and Peru, and chaired by Mr. Johann Spitzer, Peru's Minister of Production. The four topics addressed during the Meeting were: key issues affecting SMEs, SMEWG strategic planning, micro-enterprise issues, and internationalization issues. Taiwan gave seven reports at the Meeting, covering the establishment of the APEC OVOP (One Village, One Product) IT product display platform, the conclusions reached at the APEC High Level Meeting on Driving SMEs' Growth to Promote Local Development, priority strategies for SMEs, innovation-oriented SME clusters and local development strategy, the measures adopted by Taiwan to help SMEs make effective use of information and communications technology, Taiwan's SME credit guarantee system and micro-enterprise financing policy, and the development of Taiwan's conference industry and its future prospects.

It was agreed by the SMWEG members attending the Meeting that the conclusions reached by the APEC High Level Meeting on Driving SMEs' Growth to Promote Local Development (organized by Taiwan) should be incorporated into the Meeting's minutes, and recorded as important results achieved by the SMWEG in 2008. It was also agreed that local development issues would be emphasized during the APEC SME Ministers' Meeting.

2. Participation in the 53rd International Council for Small Business (ICSB) World Conference

The 53rd International Council for Small Business (ICSB) World Conference was held on June 22–25, 2008 in Halifax, Canada. The theme of the 2008 conference was “Advancing Small Business and Entrepreneurship – From Research to Results.” The conference provided the opportunity for discussion and exchange on a variety of different themes; the wide range of topics addressed included identifying and evaluating opportunities for new business start-up, business start-up environment and policy research, entrepreneurship and interpersonal networks, proactive entrepreneurship, international entrepreneurship, intra-enterprise entrepreneurship, new business value appraisal, entrepreneurial identification, entrepreneurial learning, social entrepreneurship, and female entrepreneurship.

During the conference, the Taiwan delegation presented a paper on SME policy and the development of the entrepreneurial society in Taiwan. This paper included an overview of the current state of SME development in Taiwan, and an explanation of the three key guidance measures adopted by the Small and Medium Enterprise Administration in line with the policy of building entrepreneurial learning mechanisms and creating a knowledge-based entrepreneurial society: strengthening the innovation-oriented incubation function, building

entrepreneurship knowledge and information platforms, and helping start-ups to secure the funding they need. The response to this paper from conference participants was very positive.

3. Participation in the 15th APEC SME Ministerial Meeting and Related Meetings

The 15th APEC SME Ministerial Meeting was held on August 24–29, 2008 in Chiclayo, Peru. The original theme for the 2008 Meeting was “Development Solutions for SMEs,” but Peru was so impressed by the APEC High Level Meeting on Driving SMEs’ Growth to Promote Local Development held in Kaohsiung, Taiwan in April 2008 that they decided to change the theme to “Sustainable Local Development to Foster SMEs’ Growth.” The Meeting had five sub-themes: (1) Sustainable environmental management. (2) Innovation management. (3) Corporate social responsibility. (4) Establishing partnerships between the public and private sectors to support SME development. (5) Regional economic integration.

The Taiwan delegation secured the inclusion of the results of the series of APEC meetings that were held in Taiwan in 2008 in the Joint Ministerial Statement. The Meeting also gave its approval for the new SMEWG Strategic Plan, which will guide the priorities of the work undertaken by the SME Ministerial Meeting over the coming four years. The Meeting also endorsed the six priority areas identified by the SMEWG: business environment, business management capability and promoting entrepreneurship, market access and internationalization, innovation, financing, and raising awareness of sustainable business practices.

In response to the calls for a streamlining of APEC meetings and for greater depth in the work undertaken, it was agreed that, starting from 2010, the SME Ministerial Meeting would be held once every two years.

While attending the Meeting, Vice Minister Shih took the opportunity to hold bilateral talks with Mr. Rafael Rey, Peru’s Minister for Production, Mr. I. Wayan Dipta, Indonesia’s Vice Minister of Small Business and Cooperatives, Mr. Charles Skuba, U.S. Under-secretary of Commerce, and Mr. Lee Yi Shyan, Singapore’s Minister of State for Trade and Industry.

4. Participation in the 35th International Small Business Congress (ISBC)

The 35th International Small Business Congress was held on November 1–8, 2008, in Belfast, Northern Ireland, with the theme of “An Entrepreneurial Odyssey – From Local Heroes to Global Champions.” The main focus of the Congress was on SMEs’ experiences of global operation, guidance policy in this area, and the sharing of practical experience by global

entrepreneurs, with in-depth discussion of the global market opportunities available to SMEs, the challenges they face, and how SMEs can enhance their competitiveness in the face of continuing economic globalization. The Congress provided an opportunity for direct dialog between entrepreneurs and government agencies, related organizations and academics and researchers, and for exploring the practical difficulties and challenges that entrepreneurs face. The underlying goal was to build consensus between industry, government, the university sector and research institutes, and to develop practical solutions.

During the Congress, Director General Lai of the Small and Medium Enterprise Administration presented two papers, one on the formation and development of Taiwan's SME policy, and the other on strengthening of Taiwan's local innovation system; the response to these papers was very positive. Director Lai also led the Taiwan delegation on visits to Taiwanese firms operating in the area and various government organizations, including Invest Northern Ireland, NovaUCD (University College Dublin's Innovation and Technology Transfer Centre), the Taiwan friendship group in the Irish Parliament, Forfas, and Ireland's Department of Enterprise, Trade and Employment), to exchange experience regarding ways to boost SMEs' competitiveness and the development of globalization strategy. In addition, Taiwan's National Association of Small and Medium Enterprises (supported by the Ministry of Economic Affairs) secured the Congress' approval for the 37th ISBC to be held in Taiwan in 2010.

Chapter 12

Enhancing SMEs' Ability to Make Effective Use of Information Technology

The main emphasis in the government's IT application guidance services is on the implementation of a range of e-enablement guidance plans that can help business enterprises to make effective use of computers and information technology to streamline operating procedures and reduce operational, managerial, marketing and sales costs. At the same time, by helping firms to undertake e-enablement, these programs are also helping them to keep pace with their international competitors, and to develop new market opportunities that were previously invisible to them. The following sections outline the key tasks undertaken in this area in 2008, and the results achieved.

I Quality Improvement Guidance

Taiwan's accession to the World Trade Organization (WTO) marked the commencement of a new era of intensified, global competition. While having to compete against the advanced nations on quality, Taiwanese firms have also found themselves forced to compete against the Southeast Asian nations on price. For Taiwan's SMEs, this new business environment has necessitated a change in management philosophy and increased attention to product quality and brand image; this is the only viable strategy for moving away from low-value-added manufacturing towards a greater emphasis on high-value-added activities such as R&D and design and branded marketing that can enable SMEs to rebuild their core competitiveness.

1. Helping SMEs to Raise Quality Standards

In 2003, the government launched the SME Quality Management Enhancement Plan, with the aim of helping SMEs to strengthen their overall operational structure and raise their international competitiveness. Significant results have already been achieved in terms of quality infrastructure (manpower cultivation, adoption of new quality standards, dissemination of quality management knowledge, and publicization of the achievements of model firms, etc.), basic quality management (quality diagnostics, and quality management guidance, etc.), quality verification (provision of individual guidance to selected enterprises,

and quality verification guidance, etc.), keeping pace with international trends, and new value creation.

In 2009, the government will continue its efforts to promote the improvement of SME quality management, providing guidance to help SMEs' raise their quality standards, and leveraging quality improvement to enhance the competitiveness of individual industry clusters. The key work items that will be undertaken in 2009 include:

- (1) Formulation of industry-specific quality performance standards, adoption of world-class quality management technology, and cultivation of specialist quality management talent.
- (2) Leveraging the strengths of individual center-satellite systems and industry clusters to raise quality technology standards. By making effective use of the industry cluster effect, the development of specialized supply chains can be promoted, thereby enhancing industry cluster competitiveness.
- (3) Provision of international "green supply chain" guidance, focusing on international quality regulations and standards, so as to help SMEs to secure international contracts and enhance their overall international competitiveness.
- (4) Providing SMEs with guidance on securing international quality certification such as TS16949, ISO 14001 and QC080000, to help them become qualified suppliers to leading international vendors and keep pace with global trends.
- (5) Providing guidance to stimulate the growth of high-value-added industries through improved quality management capabilities. This will involve helping secondary and tertiary SME suppliers to integrate their operations with first-tier central manufacturers, to provide Taiwanese firms with the foundations needed to establish themselves within global supply chains.

The performance targets for the period 2008 – 2011 are shown in Table 12-1-1 below.

Table 12-1-1 Quality Enhancement Performance Targets for the Period 2008–2011

Performance Target		2008	2009	2010	2011	2008 – 2011
Funds allocated (NT\$ millions)		101	94	90	103	388
Benefits	Industry clusters receiving guidance	30	30	28	30	118
	Firms receiving product quality enhancement guidance	610	620	610	640	2,480
	Quality management specialists cultivated	2,240	3,000	3,000	3,760	12,000
	Increased sales due to quality improvement and related innovation (NT\$ millions)	2,000	1,800	1,800	2,000	7,600
	Reduced costs (NT\$ millions)	150	150	150	150	600

Source: Small and Medium Enterprise Administration, Ministry of Economic Affairs, 2009.

2. SME Cluster Innovation Guidance

Taiwan has achieved impressive results in the development of both hi-tech industry clusters and “traditional industry” clusters, and should seek to expand and build on these achievements so that maximum economies of scale can be obtained. Today, Taiwan’s SMEs (which represent 98% of all business enterprises in the country) are faced with the impact of globalization, and with low-cost competition from China and the other BRIC economies. At the same time, there has been a growing trend for Taiwanese manufacturing industry to move production overseas. Under these circumstances, to achieve sustainable growth SMEs need to reorient their business strategy to focus on the ends of the value chain, by either undertaking innovative R&D and design, or focusing on branding, marketing and distribution. Most SME owners and managers are well aware of the need to upgrade and transform their businesses, but they are put off by the steadily increasing risk attached to R&D and new product commercialization, and by the need for long-term, continuous investment in brand development and marketing (as well as the need to maintain consistent product/service quality standards). For the majority of SMEs, their small scale of operations and limited resources make coping with intense, globalized competition a serious challenge.

To stimulate the upgrading of industrial technology, encourage the achievement of economies of scale through the industry cluster effect, coordinate the provision of the guidance resources needed to support industry cluster development, and drive the growth of high-value-added clusters, in 2008 the government launched the SME Cluster Innovation Guidance Plan. Through the implementation of this Plan, the government aims to help Taiwan’s SMEs develop technology-intensive and knowledge-intensive industry clusters, leveraging technology innovation, innovative business models and new hi-tech applications to help the firms that make up industry clusters to develop innovative new products, services and business models, while promoting collaborative commerce and joint marketing initiatives. The main guidance tasks for 2009 include:

- (1) Completion of a survey of industries with significant industry cluster development potential; 15 of these industries will be selected to receive special guidance in 2010.
- (2) Provision of guidance to 15 industry clusters comprising a total of over 250 individual SMEs; 2 clusters and 10 individual SMEs will receive special guidance so that they can serve as models for others to emulate.
- (3) Implementation of 16 technology development / commercialization service and guidance projects, promoting total investment in R&D of NT\$155 million.
- (4) Implementation of 5 successful resource integration projects, stimulating total investment

of NT\$150 million in strategic collaboration.

- (5) Strengthening the operational capabilities of the knowledge-intensive service industries: Cultivation of at least 800 individuals through training courses, lectures to promote new applications, and conferences, etc.
- (6) Promotion of SME knowledge-intensive services outsourcing and related applications: Cultivation of at least 500 individuals through awareness-building lectures and lectures to promote new applications.

The performance targets for the period 2008 – 2010 are shown in Table 12-1-2 below:

Table 12-1-2 SME Cluster Innovation Guidance Targets for the Period 2008–2011

Performance Target		Year				
		2008	2009	2010	2011	2008 – 2011
Funds invested (NT\$ thousands)		99,972	99,972	99,972	99,972	399,888
Benefits	Innovation-oriented clusters established	13	15	16	16	60
	Technology development and new product commercialization projects	15	15	15	15	60
	SME knowledge-intensive services guidance projects	180	450	600	700	2,000
	R&D investment stimulated (NT\$ millions)	150	150	170	180	650
	Business opportunities created (NT\$ millions)	2,500	2,500	3,000	3,000	11,000

Source: Small and Medium Enterprise Administration, Ministry of Economic Affairs, 2009.

II Value-added Digital Applications

The provision of guidance for SME e-enablement is a multi-stage process. Based on e-enablement processes and SMEs' e-enablement needs, pre-adoption planning is implemented first, followed by the implementation of guidance for the actual process of e-enablement, and then post-adoption performance evaluation and customer follow-up. The range of services provided by the government in this area covers information services portal site establishment, e-enablement guidance, manpower cultivation and knowledge accumulation and dissemination.

1. Information Services Portal Site

The SME Services e-Government Portal Site (<http://sme.nat.gov.tw>) is a portal site specially designed to provide SMEs with information about government projects, guidance services and other useful information. It is anticipated that the provision of a wide range of services through the same portal will encourage more SMEs to make use of the site, thereby giving Taiwan's SMEs access to accurate information that can help them in their operations. The services provided through this site include:

- (1) Information related to business enterprise operations: This encompasses various forms

of timely, useful information that can help SMEs to create value, including “how-to” guides (for example, on setting up a new business, operational management, applying for government subsidies, investment, business law, etc.), government announcements, market information, downloads, Internet radio broadcasts, etc.

- (2) Online inquiry services: To help SMEs understand the range of government resources available to them, and to strengthen the overall operational capabilities of Taiwan's SMEs, besides the provision of inquiry services related to case studies, government initiatives, etc., in 2009 a new “Easy Go” service application function is being added to the SME Services e-Government Portal Site. Initially, this will focus mainly on projects directed by the Small and Medium Enterprise Administration (SMEA), Ministry of Economic Affairs, so that enterprises can rapidly identify guidance resources that match their needs. SMEs will also be able to receive assistance in applying for government subsidies and other special incentive measures, thereby making this process smoother and more convenient.
- (3) A wide range of value-added services: The SME Services e-Government Portal Site also functions as a platform for the provision of other value-added services, including the showcasing of new products, activity announcements, discussion groups, surveys, online newsletters and reports on SME service provision, etc.

2. E-Learning for SMEs – the SME Online University

The SME Online University is an e-learning portal site established as part of the SMEA's SME e-Learning Plan. The aim of this initiative is to create a first-class online learning environment that will encourage SME employees to undertake learning activities and spark a “boom” in SME e-learning. The SME Online University includes five Colleges: the Information Technology College, the Marketing and Channel Management College, the Finance College, the General Knowledge College, and the Human Resources College. These Colleges provide a combined total of over 870 different online courses, available free of charge, giving SME employees a wealth of opportunities to upgrade their skills. It is anticipated that, by the end of 2009, the number of registered students will have risen to over 330,000, that the SME Online University site will have had over 6.5 million visitors, and that more than 600 SMEs will have used the site successfully for internal training.

Besides offering a wide range of training courses, the SME Online University site also provides other services, including training program news, online communities, news about new publications, Internet radio broadcasts, and online lectures, etc. The idea is that a high level of interactivity will help students to get more benefit from the site, and make learning more convenient. The Enterprise e-Learning Experience Zone provides access to e-learning

guidance teams (made up of expert consultants), which can help SMEs to identify what their training needs are, and help them to plan suitable training programs; this Zone enables SMEs to develop learning environments tailor-made to their own specific needs. Besides getting their employees to take the regular courses provided by the SME Online University, business owners can also upload their own specially produced training materials onto the Zone for their employees' use. In this way, the Enterprise e-Learning Experience Zone facilitates the development of online learning communities that can enable the enterprise as a whole to create value through learning (<http://www.smelearning.org.tw>).

3. Digital Applications – Reducing the Digital Divide in Industry

The main emphasis in the “Reducing the Digital Divide in Industry” plan is on promoting the e-enablement of business enterprises located in remote areas, and on stimulating the development of “digital industry clusters.” To participate in the scheme, firms must be legally registered as a company or other business enterprise in one of Taiwan's 25 counties and cities, and must have fewer than 20 employees. The SME e-Enablement Service Teams provide these firms with guidance and considerate service tailored to meet the needs of the local community, helping SMEs in remote areas to undertake e-enablement, and bringing about the development of new digital industry clusters.

The Reducing the Digital Divide in Industry plan targets specific key areas through a set of service mechanisms designed to improve enterprises' basic digital capabilities. The plan helps enterprises with different e-enablement needs to identify the application software and solutions that are best for them; the goal is to provide SMEs with an e-enablement “total solution” service that can enhance their digital capabilities.

The results achieved in the implementation of the Reducing the Digital Divide in Industry plan in 2008 were as follows: 20,000 enterprises were helped to e-enable their operations (including over 7,000 female-owned businesses); e-enablement service was provided to 42 industry clusters; new business opportunities worth NT\$600 million were created for the IT services industry; and the plan also stimulated the creation of NT\$1.6 billion in new online business opportunities for Taiwan's SMEs. The plan implementation results achieved in each year are presented in Table 12-2-1. In 2009, the government will continue to provide e-enablement guidance at the local level and promote the development of digital SME clusters in both rural and urban areas, guiding SMEs towards the development of even greater business opportunities. The key work items undertaken in 2009 will be as follows:

- (1) Integration of local IT service capabilities and provision of IT services tailored to the real operational needs of SMEs.

- (2) Establishment of a mechanism for the selection and utilization of online marketing consultants who can provide guidance to help industry clusters develop online marketing, creating maximum benefits for the firms that make up these clusters at the lowest possible cost.
- (3) Helping traditional local industries to digitalize their operations and promoting more widespread adoption of e-enablement applications, thereby helping local economies to grow and create jobs.

Table 12-2-1 Reducing the Digital Divide in Industry Plan – Annual Implementation Targets

Performance Indicator	Year				
	2008	2009	2010	2011	2008 – 2011
No. of firms helped to undertake e-enablement (thousands)	20 (20)	20	3	10	53
No. of female-owned businesses helped to undertake e-enablement (thousands)	7.00 (7.50)	7.00	1.05	3.50	19.05
No. of industry clusters helped to undertake e-enablement	40 (41)	42	20	40	143
Business opportunities created for the IT services industry (NT\$ millions)	600 (610)	600	90	300	1,600
Online business opportunities created for SMEs (NT\$ millions)	1,600 (1,628)	1,600	240	800	4,268

Note: The figures in parentheses under the year 2008 are the actual results achieved in that year.

Source: Small and Medium Enterprise Administration, Ministry of Economic Affairs, 2009.

4. E-Enablement Operations – the SME e-Enablement Service Teams

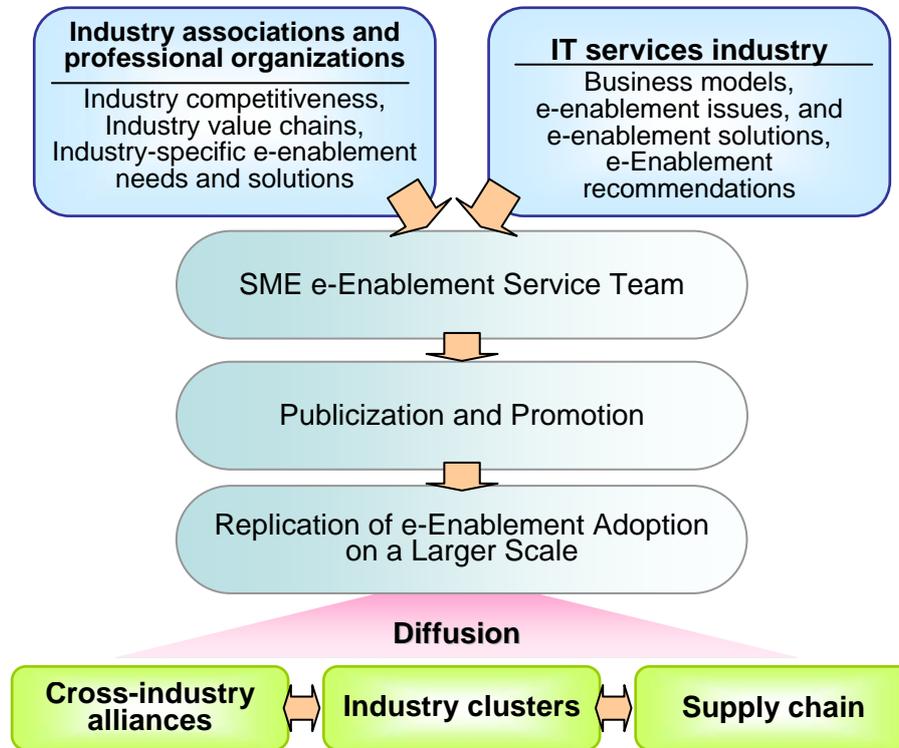
As part of the government's efforts to help SMEs strengthen their overall structure and operational capabilities, e-enablement guidance has been provided to help SMEs improve their marketing abilities and develop new business opportunities. Since 2002, the SMEA has been working closely with experts from government, industry, universities and research institutes, together with industry associations and IT service firms, to create guidance teams that can provide e-enablement guidance to industry clusters, supply chains and cross-industry alliances. This guidance aims to help enterprises to adopt e-enablement systems that are suited to the characteristics and needs of their own particular industry. By stimulating the development of "model" e-enabled SMEs, a diffusion effect is created that spreads the benefits even wider. The SME e-Enablement Service Teams also provide diagnostics and guidance services to help enterprises plan out their e-enablement requirements (Figure 12-2-1).

Over the past 7 years, diagnostic guidance has been provided to over 4,000 SMEs in 56 different industries. The main contents of the services provided are outlined below:

- (1) Establishment of the Industrial e-Enablement Enhancement Service Sub-teams, to provide guidance to SMEs that have already undertaken basic e-enablement, or have formulated a

clear e-enablement adoption model.

Figure 12-2-1 Operational Flow for the SME e-Enablement Service Teams



- (2) Provision of e-enablement guidance to SMEs, along with e-enablement consulting and diagnostics service.
- (3) Working through supply chains, cross-industry alliances, regional integration, intra-industry collaboration, online marketing networks, etc. to help reduce the barriers to SME e-enablement and spread the benefits of e-enablement.

The main guidance work items for 2009 are as follows:

- a. Establishment of 6 Industrial e-Enablement Enhancement Service Sub-teams.
- b. The Industrial e-Enablement Enhancement Service Sub-teams will work through supply chains and cross-industry alliances to support the development of 12 “model” business models or enterprises, and provide e-enablement enhancement guidance to 120 individual SMEs.
- c. Establishment of 6 industry-specific guidance and promotion web pages, to help SMEs apply for government resources and to publicize the results achieved in e-enablement guidance.

The results achieved so far in e-enablement diagnostic guidance are shown in Table 12-2-2.

Table 12-2-2 SME e-Enablement Service Team Performance Targets for 2008–2011

Item		Year				
		2008	2009	2010	2011	2008 - 2011
Appraisal and diagnostics	Industries receiving consulting and diagnostics service	6	6	6	6	24
	Individual firms receiving consulting and diagnostics service	242	240	240	240	962
Enhancement	Industries receiving e-enablement enhancement service	6	6	6	6	24
	Individual firms receiving e-enablement enhancement service	120	120	120	120	480

Source: Small and Medium Enterprise Administration, Ministry of Economic Affairs (<http://sme.nat.gov.tw/Web/sites/e-service/index.jsp>).

5. SME e-Commerce – the Industry-specific e-Commerce Plan

To help Taiwan's SMEs make effective use of e-commerce, the SMEA has been actively promoting the Industry-specific e-Commerce Plan. Through a "grapevine effect," the Plan seeks to enable the member firms of industry associations to integrate their industry's resources and capabilities and undertake rapid development of e-commerce applications. The Plan's key work items can be summarized as follows:

(1) Establishment and Operation of Industry-specific e-Commerce Portal Sites

The main focus here is on the establishment of Industry-specific e-Commerce Portal Sites, along with individual web pages, online product catalogs, etc. for the member companies of the industry associations involved in the project, as a preparatory stage before the full-scale commencement of e-commerce operations. By making effective use of the industry cluster effect, it should be possible to substantially reduce the financial burden that adopting e-commerce imposes on individual firms, thereby speeding up the across-the-board utilization of e-commerce by Taiwan's SMEs. In 2009, guidance will be provided to help 11 industry associations set up their own industry-specific portal sites, and over 1,000 individual SMEs will receive e-commerce guidance. This work will lay the foundations for online marketplace development and the creation of new business opportunities.

(2) More In-depth Adoption of Industry-specific e-Commerce Applications

The emphasis in this work area is on providing guidance to the existing industry-specific e-commerce portal sites that have already been in receipt of government guidance over the past few years, to help them implement new e-commerce marketing strategy applications and

make use of innovative marketing models to boost website visibility, attract more visitors, and improve e-commerce sales performance. In 2009, guidance will be provided to 6 industry-specific portal sites, with 600 individual SMEs receiving assistance in the strengthening of e-commerce money flow functions so as to enhance overall e-commerce performance and promote the development of new business opportunities.

Over the period from 2003 to 2008, a total of 61 e-commerce sites have been set up by individual industry associations, thereby helping a total of 27,491 SMEs to adopt e-commerce. This has created over NT\$750 million in new business opportunities for these firms, while also stimulating the creation of more than NT\$150 million in additional business opportunities for the IT services industry.

6. Knowledge Management – the Knowledge Management Plan for SMEs

To help Taiwan's SMEs adjust to the new era of the knowledge economy and leverage innovation to exploit new opportunities, in 2003 the SMEA launched the Knowledge Management Plan for SMEs. This Plan has combined the strengths of industry and the university sector in the planning of knowledge management diagnostic guidance mechanisms, leveraging the specialist capabilities of management consultants and IT services providers to help SMEs adopt knowledge management applications, and to coordinate the provision of knowledge management resources through the Plan website to build a knowledge management sharing environment. At the same time, special promotional activities and media-based marketing have been employed to spread awareness of the benefits that knowledge management can provide, and encourage even more SMEs to adopt knowledge management. In this way, a new vision is gradually being realized in which Taiwan's SMEs are able to make effective use of knowledge management to enhance their competitiveness.

(1) Key Work Areas

The key Plan implementation tasks for 2009 are as follows:

- a. Provision of knowledge management diagnostic guidance service: The SMEA will be establishing a diagnostic guidance service mechanism, and recruiting expert management consultants and IT services consultants to provide knowledge management diagnostic and appraisal services for SMEs. These teams of consultants will provide SMEs with knowledge management planning analysis and suggestions for knowledge management adoption. The SMEA will also be promoting a group guidance service, whereby teams of management consultants and IT services consultants work together to help groups of

SMEs introduce and make effective use of knowledge management, thereby solving their common problems and creating models of successful knowledge management adoption that will encourage other firms to follow their example.

- b. Promoting the establishment of knowledge communities by business enterprises: Helping firms that have been the recipients of knowledge management adoption guidance to form knowledge communities, breaking down the barriers between industries and sectors and creating an atmosphere in which the sharing of knowledge can thrive, and in which the exchange of innovative ideas is stimulated and new innovation capabilities are built up.
- c. Promoting awareness of knowledge management applications: This will involve the holding of presentations, lectures, and events to showcase the results achieved, etc., as well as the publication of collections of knowledge management adoption case studies, and active promotion in the media, with the aim of boosting SMEs' awareness of knowledge management and the benefits that it can provide.
- d. Building an environment conducive to knowledge sharing: The content available on the Knowledge Management Plan for SMEs website (<http://smekm.moeasmea.gov.tw>) includes case studies, digital materials, a "yellow pages" database of experts in the field, and a knowledge management software "tool box," etc. E-Newsletters are used to keep business enterprises up-to-date with the latest developments in knowledge management planning and applications.

(2) Implementation Results

Over the period 2003 – 2008, guidance was provided to help 67 SMEs adopt and make effective use of knowledge management. The results achieved are outlined below:

- a. Helping SMEs to adopt knowledge management:
 - i. Recruitment of 533 experienced consultants to assist with knowledge management promotion.
 - ii. Holding of 16 training and exchange activities for knowledge management consultants, with a combined total of 825 participants.
 - iii. Holding of 72 knowledge management specialist training sessions, with a total of 140 knowledge management trainers being cultivated.
 - iv. Provision of diagnostics and guidance services to 624 enterprises.
 - v. Creation of approximately NT\$190 million in additional business opportunities for the IT services consulting industry.
 - vi. Boosting sales growth in knowledge management-related industries by around 15 – 25%.
 - vii. Enabling those SMEs that were in receipt of guidance to grow their annual sales revenue by over NT\$200 million, and reduce their costs by around NT\$130 million.
- b. Building an environment conducive to knowledge sharing by SMEs: The results achieved

- by the Knowledge Management Plan for SMEs website include: i. Establishment of 67 case studies in 7 categories – manufacturing industry, service sector, construction industry, IT industry, hi-tech industries, printing industry, and other industries. ii. Compilation of 27 sets of knowledge management digital teaching materials. iii. Creation of 15 knowledge management “software toolboxes.” iv. A monthly average of 12,500 visitors to the Knowledge Management Plan for SMEs Website.
- c. Results achieved in spreading awareness of knowledge management: Publication of collections of knowledge management adoption case studies, and the holding of 198 knowledge management promotion presentations, lectures, and activities to showcase the results of knowledge management adoption, attended by a total of 8,041 people, to broaden awareness of knowledge management and the benefits it offers.

Chapter 13

Strengthening the SME Managerial Guidance Function

The Small and Medium Enterprise Administration (SMEA) coordinates the operation of the small and medium enterprise (SME) guidance system, working to strengthen SMEs' operational management, promote mutual assistance and collaboration between SMEs, foster the growth of local industries, promote regional economic development, organize SME awards, and strengthen the functioning of the SME service network. The overall goal is to provide comprehensive managerial guidance that will help SMEs to improve their operational efficiency and will strengthen their overall capabilities. The following sections outline the key initiatives and plans that are being implemented over the period 2008 – 2009 to achieve this goal, the work that has been carried out so far, and the results achieved.

I Improving the Quality of SME Management

1. Guidance System Integration

- (1) Guidance systems: The *Measures for the Establishment of the SME Guidance System* were formulated in accordance with the provisions of Paragraph 2, Article 12 of the *SME Development Statute*; they provide for the establishment of 11 SME guidance systems covering: finance and financing, operational management, new business start-up and incubation, information management, mutual assistance and collaboration, quality enhancement, pollution prevention, R&D, industrial safety, production technology, and market development and marketing. The work of various agencies falling under the Ministry of Economic Affairs (MOEA) – including the Small and Medium Enterprise Administration (SMEA), the Industrial Development Bureau, the Department of Industrial Technology, the Bureau of Foreign Trade, and the Commerce Department – is coordinated to provide SMEs with guidance resources appropriate to their needs and to implement guidance system resource referrals, thereby ensuring the effective use of resources and the creation of synergy through resource integration. The directing and supporting agencies for each guidance system are shown in Table 13-1-1 below.
- (2) SME guidance concepts: One basic concept underlying the provision of SME guidance is the division of SMEs into three categories – micro-enterprises, growth-stage enterprises,

and “outstanding SMEs.” As of 2008, there were just over 1.24 million SMEs in Taiwan, of which around 60% were sole proprietorships and partnerships falling under the category of micro-enterprises, approximately 30% of which were limited corporations, most of which can be classed as growth-stage enterprises, and around 10% of which were corporations limited by shares, many of which are highly-developed “outstanding SMEs.” Most of the government agencies involved in the provision of guidance to SMEs employ this categorization (Table 13-1-2).

Table 13-1-1 The 11 SME Guidance Systems

SME Guidance System	Directing Agency	Supporting Agencies
Finance and Financing Guidance System	SMEA	Intellectual Property Office
Operational Management Guidance System		Industrial Development Bureau, Commerce Department
Start-up and Incubation Guidance System		Industrial Development Bureau, Department of Industrial Technology, Commerce Department, Industrial Development and Investment Center
Information Management Guidance System		Industrial Development Bureau, Industrial Development and Investment Center
Mutual Assistance and Collaboration Guidance System		Bureau of Foreign Trade, Industrial Development Bureau, Department of Industrial Technology, Commerce Department
Quality Enhancement Guidance System		Industrial Development Bureau
Pollution Prevention Guidance System	Industrial Development Bureau	SMEA
R&D Guidance System		Department of Industrial Technology, SMEA
Industrial Safety Guidance System		SMEA
Production Technology Guidance System		Department of Industrial Technology, SMEA, Intellectual Property Office
Market Development and Marketing Guidance System	Bureau of Foreign Trade, Commerce Department	Export Processing Zone Administration, SMEA

Source: Small and Medium Enterprise Administration, Ministry of Economic Affairs, 2009.

Table 13-1-2 The Basic Concept Underlying SME Guidance

Enterprise Category	Form of Organization	As Share of All SMEs (%)	Main Guidance Measures
Micro-enterprises	Sole proprietorships and partnerships	60	Most of these enterprises are in the service sector or in traditional industries; guidance focuses on the provision of collective guidance to “local cultural industries,” guidance to help SMEs undertake mutual assistance and collaboration, and provision of small-value working capital loans and micro-enterprise loans.
Growth-stage enterprises	Limited corporations	30	Provision of assistance through the 11 SME guidance systems.
Outstanding SMEs	Corporations limited by shares	10	Recognition through award schemes.

Source: Small and Medium Enterprise Administration, Ministry of Economic Affairs, 2009.

- (3) Guidance system integration – objectives and methods: The goal of guidance system integration is to integrate guidance resources and enhance the competitiveness of Taiwan’s SMEs. The methods used to achieve this aim include: a. Establishment of an inter-system coordination and communication mechanism. b. Personnel exchange between guidance systems. c. Establishment of online guidance application and provision

of guidance-related information online. d. Compilation of details of current guidance system implementation status and results achieved. e. Publicization of guidance measures and resources.

- (4) Budgets for SME guidance system operation are provided by the respective directing and supporting agencies (the combined guidance system budget for 2009 is NT\$192 million, of which NT\$157 million has been earmarked for SME guidance). Four times a year, an MOEA Deputy Minister chairs an SME Guidance System Work Report Meeting, to which academics and experts are invited to attend to discuss important government policies; the decisions made at the Meeting are followed up to ensure effective guidance implementation. The SMEA works closely with the other directing and supporting agencies – including the Industrial Development Bureau, the Department of Industrial Technology, the Bureau of Foreign Trade and the Commerce Department – to provide SMEs with guidance resources appropriate to their needs and to implement guidance system resource referrals, thereby ensuring the effective use of resources and the creation of synergy through resource integration. The implementation plans drawn up by the SME guidance system directing and supporting agencies for 2009 can be accessed at <http://www.smeccs.org.tw/>.

2. Operational Management Guidance for SMEs – Individual Guidance

In 2008, the government continued to provide operational management guidance for individual SMEs, with a view to implementing an effective management diagnostics service, helping SMEs to improve their operational positioning, strengthening the overall capabilities of Taiwan's SMEs, improving innovation capabilities, and helping SMEs to reduce their operating costs, develop new sources of competitive advantage and raise their competitiveness.

- (1) Guidance content: SMEs can apply for guidance by focusing on any of the following areas, in line with their own particular needs: business strategy, marketing management, organization and human resources, production management, materials management, quality management, site management, factory planning, franchise / chain store operation, branch management, logistics management, GSP system planning, ISO 9000, ISO 14000, food or pharmaceuticals products GMP, HACCP, ordinary accounting, cost accounting, legal and regulatory affairs, working capital management, budget management, financial reporting, internal control systems, internal auditing systems, preparing for a stock market / OTC listing, management computerization, etc.
- (2) Key measures: Management consulting service, short-term diagnostic guidance, regular

individual guidance, presentations to publicize the results of guidance implementation, support for self-diagnosis, and other assistance measures to help SMEs grow.

- (3) Guidance results achieved in 2008: Provision of guidance to 10 enterprises, enabling them to improve their operational structure and strengthen their competitiveness, with a NT\$170 million increase in sales, an 8% reduction in the production fail rate, an average increase of 12% in operational efficiency, a 12% improvement in terms of simplification of production processes and streamlining of documentation, and an average reduction of 20% in customer complaints per month. The performance targets for the coming three years are shown in Table 13-1-3.

Table 13-1-3 Individual Operational Management Guidance for SMEs – Performance Targets for the Period 2009–2011

Performance Indicator		Year			
		2009	2010	2011	2009 - 2011
Funds allocated (NT\$ thousands)		4,000	4,500	5,000	13,500
Benefits	No. of guidance plan presentations held	4	4	4	12
	No. of firms receiving short-term diagnostic guidance	100	125	150	375
	No. of firms receiving ordinary individual guidance	10	10	10	30
	No. of presentations held to showcase guidance results	2	2	2	6
	Instances of management consulting service provision	100	120	140	360
	Enterprise self-diagnosis publications	1	1	1	3

Source: Small and Medium Enterprise Administration, Ministry of Economic Affairs, 2009.

3. Helping SMEs to Adopt Intellectual Property Rights Management Systems

The government helps those SMEs that have attained a relatively large scale of operation to establish their own internal intellectual property rights management systems, so that these firms can leverage IP protection to maintain their competitive advantage. Guidance recipients also receive follow-up support to help them secure MOEA Taiwan Intellectual Property Management System (TIPS) certification. The goal is to help SMEs reorient themselves towards high-value-added production and strengthen their capabilities by developing business models that emphasize making effective use of patents, brand development, customer relationship management, high-quality service and other intangible assets, thereby contributing to the development of the SME sector as a whole. The specific methods employed include the following:

- (1) Holding IP management community conferences, at which academics and experts in the field are invited to give lectures.
- (2) Providing specialist training courses, and helping SMEs to leverage experts' experience and knowledge to develop preliminary solutions.

- (3) Short-term diagnostics: Provision of free, on-site diagnostics and guidance to identify SMEs' current problems with respect to IP management and offer preliminary solutions.
- (4) Provision of individual guidance to help SMEs establish their own IP management system: This involves the provision of on-site support for a period of approximately six months during which SMEs establish their own IP management system and then apply for MOEA Taiwan Intellectual Property Management System (TIPS) certification. In addition, presentations are held to showcase the results of guidance provision, facilitate the sharing of experience, and encourage the widespread diffusion of relevant knowledge and ideas.

The results achieved over the period 2006 – 2008 are as follows: Provision of short-term diagnostics service to 110 SMEs, including the provision of on-site guidance to help 24 SMEs to establish their own IP management systems. This guidance enabled the enterprises concerned to increase their annual sales revenue by NT\$140 million, and to increase the number of patents and trademarks that they secured by an average of over 5 per firm per year. The anticipated results over the next few years are shown in Table 13-1-4.

Table 13-1-4 Adoption of IP Management Systems by SMEs – Performance Targets for the Period 2009–2011

Performance Indicator		Year						
		2009		2010		2011		2009 - 2011
Funds allocated (NT\$ thousands)		Govt. funding	Matching funds raised by the firms concerned	Govt. funding	Matching funds raised by the firms concerned	Govt. funding	Matching funds raised by the firms concerned	Total funding
		3,900	960	3,900	960	3,900	960	14,580
Benefits	Presentations and conferences, including presentations to showcase guidance results (no. of participants)	1,200		1,200		1,200		3,600
	No. of firms receiving short-term on-site guidance	50		50		50		150
	No. of firms receiving on-site guidance for periods of approximately 6 months	8		8		8		24
	No. of firms applying for MOEA TIPS certification	8		8		8		24
	No. of copies of the Intellectual Property Management Practice Q&A Handbook printed	1,000		1,000		1,000		3,000
	Additional business opportunities created for SMEs (NT\$ millions)	53		53		53		146

Source: Small and Medium Enterprise Administration, Ministry of Economic Affairs, 2009.

4. Government Guidance to Help SMEs Develop Their Own Brands

Taiwanese industry has for many years been oriented mainly towards OEM and ODM manufacturing; in the past, Taiwan has had little success in the development of branded

manufacturing and distribution. In recent years, however, with the growth of the emerging economies, Taiwan's competitive advantage in manufacturing has gradually been eroded. Taiwanese industry has been working to move away from low-value OEM/OEM production through industrial upgrading; the development of branded manufacturing is an important objective in this regard. The main measures being implemented by the government to help SMEs develop their own brands include:

- (1) Compilation of the SME Marketing Resources Handbook.
- (2) The holding of presentations and conferences to show SMEs how they can go about establishing their own brands.
- (3) Making it possible for individual enterprises to apply for brand development consulting and diagnostics service, thereby facilitating the identification of firms with significant growth potential, innovation capability and competitiveness; implementation of group guidance and other services related to brand development strategies.

Guidance results achieved in 2008: Provision of consulting service to 35 individual firms, and provision of diagnostic service to 15 firms; printing and distribution of 3,500 copies of the *SME Branded Marketing Resources Handbook*; introduction of a branded marketing (joint brand) management system in an industry cluster; the firms receiving guidance were able to grow their annual sales revenue by a combined total of NT\$78.62 million. The performance targets for the next three years are shown in Table 13-1-5.

Table 13-1-5 Brand Development Guidance and Information Provision Targets for the Period 2009–2011

Performance Indicator		Year		Year		Year		2008 – 2011
		2009	2010	2011	2008 – 2011			
Funds allocated (NT\$ thousands)		Govt. funding	Matching funds raised by the firms concerned	Govt. funding	Matching funds raised by the firms concerned	Govt. funding	Matching funds raised by the firms concerned	20,460
		6,000	820	6,000	820	6,000	820	
Benefits	Presentations and conferences, including presentations to showcase guidance results (no. of participants)	400	400	500	1,300			
	Number of firms receiving short-term guidance	30	30	30	90			
	No. of firms receiving regular guidance for periods of approximately 5 months	10 (individual firms) + 3 (specific industry)	10 (individual firms) + 3 (specific industry)	10 (individual firms) + 3 (specific industry)	30 (individual firms) + 9 (specific industries)			
	No. of resources referrals (firms)	15	15	20	50			
Additional business opportunities created for SMEs (NT\$ millions)		140	140	140	420			

Source: Small and Medium Enterprise Administration, Ministry of Economic Affairs, 2009.

5. Cultivation of Management Consulting Capabilities

As part of the government's efforts to achieve an across-the-board strengthening of the guidance capabilities and international competitiveness of Taiwan's management consulting services industry, besides continuing to implement SME management consultant cultivation, in 2009 the government began to implement the Management Consulting Services Technology Development Plan, employing a variety of methods – including the implementation of management consulting industry supply and demand surveys, establishment and maintenance of websites for the exchange of management consulting information and for business matching, cultivation of high-end consulting talent (including overseas training programs), promoting the formation of strategic alliances in the management consulting industry, etc. – to upgrade the service provision capabilities of Taiwan's management consultants and enhance the industry's overall competitiveness.

The performance targets for the implementation of this Plan over the next four years are shown in Table 13-1-6.

Table 13-1-6 Management Consulting Capability Cultivation Performance Targets for the Period 2009–2012

Performance Indicator		Year			
		2009	2010	2011	2012
Funds allocated (NT\$ millions)		19.55	18.63	18.67	18.67
Benefits	Management consulting industry supply and demand surveys implemented	1	1	1	1
	Information exchange and business matching platforms established	1	Maintenance	Maintenance	Maintenance
	Domestic management consulting certification mechanism studies published	1	—	—	—
	Planning reports regarding mechanisms for showcasing outstanding performance	1	—	—	—
	Presentations for showcasing outstanding performance (no. of participants given in parentheses)	—	1(100)	1(100)	1(100)
	Management consulting forums and technology conferences (no. of participants given in parentheses)	2(220)	2(350)	2(350)	2(350)
	Reports on new trends in management consulting concepts and methods	1	1	1	1
	Management consulting guidance handbook (no. of copies distributed)	2,000	2,000	2,000	2,000
	No. of management consulting certification preparatory courses held (no. of participants given in parentheses)	2(100)	2(100)	2(100)	2(100)
	High-end management consulting talent training courses held (no. of trainees)	35	35	35	35
	No. of strategic alliances formed (no. of participating firms given in parentheses)	3(30)	3(30)	3(30)	3(30)
	No. of strategic alliance presentations held (no. of participants given in parentheses)	2(150)	2(150)	2(150)	2(150)

Source: Small and Medium Enterprise Administration, Ministry of Economic Affairs, 2009.

6. Organizing SME Awards Activities

Every year, the SMEA organizes a range of awards activities. The 2008 awards have already been successfully held; an overview of the purpose of each award activity and the results achieved are given in Table 13-1-7 below:

Table 13-1-7 SME Awards Activities Held in 2008

Field	Award Type	Award Name	Purpose	Results Achieved
Business Administration	Operational management	National Award for Small and Medium Enterprises	To promote the upgrading and development of Taiwanese industry.	Has been held 17 times; 187 enterprises have received awards.
	Export performance	Little Giant Awards	To encourage SMEs to develop international markets.	Has been held 11 times; 191 enterprises have received awards.
	Innovation	Small and Medium Enterprise Innovation Research Awards	To encourage SMEs to innovate and undertake R&D.	Has been held 15 times; 564 enterprises have received awards.
Knowledge Diffusion	Guidance personnel	Award for Outstanding SME Guidance Personnel	To honor individuals who have made an outstanding contribution to SME guidance or related services.	Has been held 15 times; 198 individuals have received awards.
	Research	SME Studies Masters and Ph.D. Thesis Awards	To encourage Masters and Doctoral candidates to undertake research on SME-related topics.	Has been held 14 times; 172 Masters candidates and 62 Doctoral candidates have received awards.
	Business books	Golden Book Awards	To showcase outstanding business books that can help enterprises to improve their competitiveness.	Has been held 14 times; 183 books have received awards.

Source: Small and Medium Enterprise Administration, Ministry of Economic Affairs, 2009.

II Developing New Market Opportunities and Strengthening Marketing Capabilities

1. Promotion of Business Matching

The key factors that determine whether SMEs are able to transform themselves successfully are access to technology, funds, markets and distribution channels. The SMEA works to coordinate the various activities held by agencies subordinate to the MOEA to showcase new technologies and new products, working actively to assist SMEs in the following areas: (1) Providing intensive exposure for new products within a short time period, so that the general public becomes aware of these new products, while also helping the SMEs concerned to develop collaborative marketing channels. (2) Helping firms that have developed new technologies to access funding rapidly, or helping them to introduce and commercialize new technologies through collaboration with other firms, while ensuring that the new technology conforms to market requirements. (3) Enabling SMEs to use online platforms and resources

for product marketing and the showcasing of new technologies.

In 2008, the SMEA continued to implement the “SME Business Matching Train” activities, organizing activities that fell into three main categories: new product matching, new technology matching, and online display and marketing matching. Using an integrated service platform, the SMEA was able to provide SMEs with expert services to support business and technology matching, thereby enabling the creation of synergy through effective integration of resources, and raising the success rate in business matching and technology matching. The specific measures adopted included:

- (1) Showcasing of new products and related business matching activities: Linking the showcasing of new products with business matching fairs has helped SMEs to spread awareness of their new products, thereby helping them to develop new business opportunities and opportunities for collaboration. In 2008, a total of 7 such events were held.
- (2) Showcasing of new technologies, collaboration and exchange: The holding of new technology display and business matching activities has helped SMEs to upgrade their technology and secure investment from venture capital firms. In 2008, a total of 8 events of this type were held.
- (3) Online marketing matching: The use of virtual online platforms for the showcasing of new products and technologies for related marketing activities has helped SMEs to identify new business opportunities and promote their products and technologies. The virtual online platforms that were employed in 2008 included: the APEC OVOP (One Village, One Product) information and product display platform (<http://www.apecovop.org>), the OTOP (One Town, One Product) local industries network (<http://www.otop.tw>), the SME EC network (<http://sme.nat.gov.tw/Web/sites/ecnet>), the Taiwan Technology Marketplace (<http://www.twtm.com.tw>), and Technomart (<http://www.technomart.org.tw>).

A total of 15 business matching activities were held in 2008, including the New Product Business Opportunities Fair, the New Technology and Investment Fair, Connect Taiwan, and the Business Start-up Fair. A total of 508 enterprises participated in these activities, which attracted 88,011 visitors, and led to 4,060 sets of negotiations, of which 397 led to successful business matching, creating new business to the value of NT\$286.84 million.

2. Marketing Guidance – Turnkey Solution Exportation

Taiwan’s SMEs possess strong manufacturing capabilities, and the turnkey solution industry possesses several sources of competitive advantage. Since 1995, the SMEA has had responsibility for promoting turnkey solution exports. To create an environment conducive

to the development of turnkey solution exports by Taiwan's SMEs, the SMEA has provided guidance to help turnkey solution providers to innovate and upgrade themselves, and to raise their overall international competitiveness. The main measures implemented in 2008 included: (1) Integrated services: Supplier/product inquiries, supply chain integration, investment and factory establishment planning consultation, turnkey solution planning and operation consultation, turnkey purchasing and financing consultation, and turnkey solution technology consultation. (2) Systematic marketing promotion: International exhibitions, global promotion networks (working through industry associations, overseas chambers of commerce, and Taiwan's overseas trade offices), and service network deployment.

The promotion of turnkey solution exportation has created the following business opportunities:

- (1) Integration of 2 supply chains per annum, permitting joint participation in overseas trade shows (in 2008, the two industries were the food products and paper-making industries).
- (2) Arranging visits to Taiwan by approximately 3 overseas trade delegations every year.
- (3) In 2008, the SMEA provided service to 500 Taiwanese turnkey solution providers, and implemented 10 turnkey solution exportation promotion projects. 20 turnkey solutions providers were helped to overcome problems related to international marketing and financing, while another 10 were helped to improve their overall operational capabilities. The organizing of trade delegations helped to create new business worth NT\$50 million.

III Mutual Assistance and Collaboration Guidance

Mutual assistance involves enterprises that are interested in collaborating with other firms forming groups to develop strategies for collaboration, set concrete objectives, and use teamwork and brainstorming to formulate collaboration plans for joint R&D, the introduction of new technology, collaborative manufacturing, collaborative marketing, collaborative logistics, etc., so as to develop new business opportunities or new business areas. Encouraging business enterprises to share each other's resources, which can help them to build economies of scale, strengthens firms' overall capabilities and enhances their competitiveness. The main work items implemented in the area of mutual assistance and collaboration guidance in 2008 were as follows:

1. Mutual Assistance Clubs

Mutual assistance and collaboration guidance method: A group of at least 15 enterprises (of which at least three-quarters must be SMEs) may register as a Mutual Assistance Club to undertake mutual assistance and collaboration activities. Through their contacts with other

firms via the Club, the members develop mutual trust, learn together, and develop their management capabilities. The main focus in the Mutual Assistance Club activities is on the acquisition of industry-specific knowledge, hands-on exchange activities, the exchange of information, seminars, exchange with other Clubs, management discussions, trans-national exchanges, etc.

As of 2008, a total of 37 Mutual Assistance Clubs had been organized, with a combined total of 1,660 enterprises receiving guidance through these Clubs.

2. Promotion of Practical Collaboration Projects

Guidance method: A group of at least 6 enterprises (of which at least three-quarters must be SMEs, but with no restrictions regarding geographical location) undertake practical collaboration based on a detailed collaboration plan to meet shared needs. The range of activities that may be covered by practical collaboration projects is very broad, including inter-enterprise collaboration on PR, the introduction of new technology, collaborative manufacturing, collaborative marketing, collaborative website establishment, collaborative logistics, and collaboration on the establishment of new business ventures, etc.

In 2008, a total of 7 practical collaboration projects were carried out: collaborative production and sale of beauty products; collaboration on the development of innovative new garment materials and related joint R&D; collaboration on innovative marketing for Ilan County's traditional industries; collaboration on new market development for Hualien County's tourism industry; collaboration between handicraft producers in Kaohsiung City, Kaohsiung County and Pingtung County; valve manufacturing supply chain collaboration; collaboration on hospital bed development and related service system establishment.

3. Industry Cluster Guidance

Having identified industries with the potential for high value-added creation, a total of 6 technology-intensive SME clusters were established: "smart" LED ambient lighting, innovative bio-materials applications, digital and multimedia sporting and leisure equipment, high-value-added car light components, precision optical components, and high-power energy flow controllers.

The results achieved in 2008 were: (1) Provision of new technology development and commercialization guidance and related services on 37 cases, and helping firms to obtain NT\$180 million in R&D funding. (2) Guiding SMEs to create brands and sales channels for sales of more than NT\$160 million in 3 cases. (3) Implementation of 6 successful business resource integration projects, worth a total of NT\$270 million. (4) Helping SMEs to develop new business opportunities worth NT\$1.29 billion.

4. Proposed Mutual Assistance and Collaboration Guidance Strategy for the Period 2009–2011

The key mutual assistance and collaboration guidance strategies implemented during the period 2009 – 2011 will be as follows:

- (1) Establishment of the Mutual Assistance and Collaboration Promotion System in 2009: This System will cover collaboration exchange, practical collaboration, access to resources, publicization through a wide range of channels, and showcasing of successful projects, etc.
- (2) Introduction of autonomous Mutual Assistance Club collaboration in 2010: This will involve completing the evaluation and adjustment of the relevant mechanisms, guiding the members of Mutual Assistance Clubs on the path towards practical collaboration, the establishment of collaboration models, and organizing events to showcase outstanding performance.
- (3) Dissemination and learning promotion starting in 2011: This will involve the dissemination and transfer of collaboration models, encouraging firms to learn from model projects, establishing a wide range of channels for collaboration, and organizing events to showcase outstanding performance.

The performance targets for mutual assistance and collaboration guidance over the period 2009 – 2011 are shown in Table 13-3-1.

Table 13-3-1 Mutual Assistance and Collaboration Guidance Performance Targets for the Period 2009–2011

Performance Indicator		Year			
		2009	2010	2011	2009 – 2011
Funds allocated (NT\$ millions)		8.29	9.70	12.00	29.99
Benefits	No. of firms participating in Mutual Assistance Clubs	300	300	300	900
	No. of collaboration projects implemented	20	30	40	90
	Number of practical collaboration projects in receipt of guidance	3 projects	6 projects	9 projects	18 projects
	No. of firms participating	At least 20 firms	At least 40 firms	At least 60 firms	At least 120 firms
No. of jobs created		200	300	400	900

Source: Small and Medium Enterprise Administration, Ministry of Economic Affairs, 2009.

IV Revitalizing Local Economies – Helping Local Cultural Industries to Grow and Create Value

The Four-year Plan to Develop Local Industries, which was initiated in 2008, has as its goal the achievement of “One Town, One Product” (OTOP). Using a shared Taiwan OTOP logo,

the project will work to promote the high-quality products of Taiwan's local cultural industries, helping the firms concerned to develop both the domestic market and overseas markets, while also promoting tourism industry development in the regions where these firms are located. The project will focus in particular on those local cultural industries with significant potential for developing international markets. By strengthening the value chain in these industries, it will also contribute to publicizing those aspects of local communities of which Taiwan can be particularly proud, thereby enhancing Taiwan's overall international image.

1. The Four-year Plan to Develop Local Industries – Timetable and Funding

The Four-year Plan to Develop Local Industries is being implemented in two stages over the period from January 1, 2008 to December 31, 2011. The first stage, from 2008 to 2009, is the integration and value-adding stage; the second stage, from 2010 to 2011, is the network development stage. Total funding of NT\$400 million has been allocated for the Plan, of which NT\$62,447,000 will be available in 2008.

2. The Goals of the Four-year Plan to Develop Local Industries

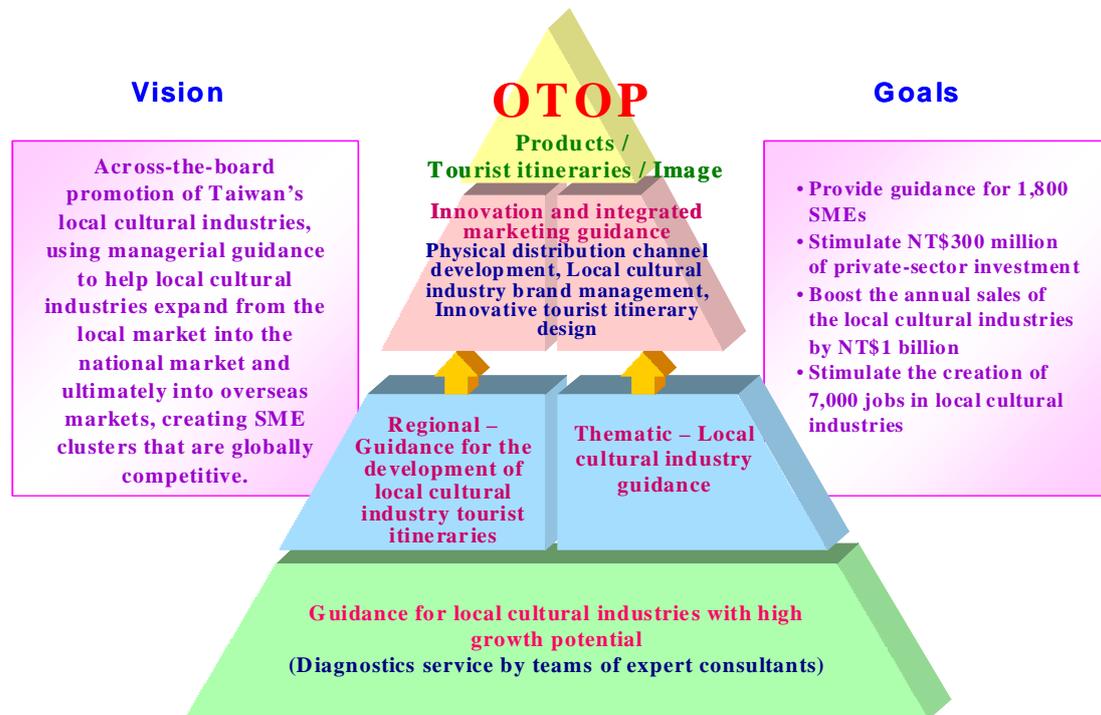
- (1) Provision of guidance to 1,800 enterprises, helping them to increase their production capacity and enhance their product development capabilities.
- (2) Strengthening the marketing capabilities of local cultural industries, helping them to develop distribution channels (both in the domestic market and in overseas markets), and promoting tourist itineraries that leverage local cultural industries and their products, with the aim of boosting the annual sales revenue of local cultural industries by NT\$1 billion.
- (3) Strengthening local cultural industry manpower cultivation, and promoting the emergence of talented second-generation business owners to take over the reins of existing firms.
- (4) Integrating local industries with culture and technology with aesthetics in the development of innovative new value-added products and services, thereby strengthening the identity of Taiwan's local cultural industries and enriching the content of their operations.
- (5) Stimulating NT\$300 million of private-sector investment, thereby helping to create 7,000 jobs in local cultural industries, and revitalizing local economies.
- (6) Making use of information technology to establish local cultural industry information platforms, with a target of 1 million website visitors.

3. Plan Implementation Framework

The main emphasis in the guidance provided under the Four-year Plan to Develop Local Industries is on using managerial guidance to help the enterprises that make up Taiwan's local cultural industries to expand from the local market into the national market and ultimately overseas markets, creating clusters of SMEs that are globally competitive and that possess real vision.

Three types of guidance model are employed: thematic, potential-based (targeting firms that have significant development potential but which have not previously received guidance) and regional (focusing on the integration of regional resources by firms that have previously received guidance). The overall framework is shown in Figure 13-4-1.

Figure 13-4-1 The Four-year Plan to Develop Local Industries – Guidance Framework



Source: Small and Medium Enterprise Administration, Ministry of Economic Affairs, 2009.

4. Work Items Carried Out in 2008 and Results Achieved

2008 was the second year of implementation of the Four-year Plan to Develop Local Industries. Four integrated guidance projects were carried out – The Integrated Promotion Plan for Local Cultural Industry Product Innovation, the Internationalization Guidance Plan for Local Cultural Industries, the Local Cultural Industry OTOP Marketing and Promotion

Plan, and the Plan for Coordinating the Activities of Local Cultural Industries and Community Enterprises – along with 19 industry-specific guidance plans (each of which involved the provision of guidance to around 10 firms, with the guidance being provided by 8 guidance teams). The key work items undertaken and the results achieved were as follows:

- (1) Provision of guidance to local cultural industries with significant growth potential: The guidance teams are responsible for identifying targets for guidance provision by themselves. Project proposals are made at the level of the individual township, rural township or city; if a project is approved, guidance is provided over a period of three years to build up the basic capabilities of the local cultural industry in question. A total of 19 guidance projects were implemented in 2008, including projects that targeted the Keelung seaweed products industry, the lacquered gourd industry in Fengyuan, Taichung County, the bean products processing industry in Tahsi, Taoyuan County, a vineyard development project in Ehrlin, Changhua County, a project in Taimali, Taitung County, the herb jelly industry in Kuanhsi, Hsinchu County, the aboriginal products industry in Nanchuang, Miaoli County, the soy sauce industry in Hsiluo, Yunlin County, and the handicrafts industry in Santimen, Pingtung County. (This constitutes the Plan for Coordinating the Activities of Local Cultural Industries and Community Enterprises.)
- (2) Thematic local cultural industry guidance projects: These projects target local cultural industries with significant export growth potential. In 2008, guidance was provided for the tea industry; the SMEA provided assistance to help tea producers attend trade shows, develop new distribution channels, and undertake brand development. (This constitutes the Internationalization Guidance Plan for Local Cultural Industries.)
- (3) Establishment of the OTOP Local Cultural Industries Network website (<http://www.otop.tw>). This website provides industry news and information about related activities, and issues e-newsletters; in 2008 it also organized 5 online marketing and advertising activities. A variety of other information application services are provided, including 3G mobile telephony, Internet telephony, GPS, mobile bar-code and RSS services; in addition, information about the products of Taiwan's local cultural industries has been uploaded onto Wikipedia (This constitutes the Local Cultural Industry OTOP Marketing and Promotion Plan).
- (4) To help the enterprises that make up Taiwan's local cultural industries to develop their marketing and distribution channels, a Taiwan Local Cultural Industries Product Display Hall has been established in the Dream Mall in Kaohsiung City; in addition, using funding provided by the Council for Economic Planning and Development, an additional Taiwan Local Cultural Industries Product Display Hall has been opened in the Taipei 101

Building in Taipei City, as part of the Taiwan OTOP Distribution Channel Development Plan (This constitutes the Integrated Promotion Plan for Local Cultural Industry Product Innovation).

The results achieved in the provision of guidance for local cultural industries over the past few years are shown in Table 13-4-1.

Table 13-4-1 Results Achieved in the Provision of Guidance to Local Cultural Industries in Recent Years

Item	Year				
	2004	2005	2006	2007	2008
Instances of manpower cultivation	1,964	2,046	2,142	2,273	2,408
New jobs created	1,413	1,461	1,491	1,644	1,825
No. of enterprises receiving guidance	365	360	388	430	431
Increase in sales revenue (NT\$ thousands)	114,942	115,086	116,010	178,730	200,037

Source: Small and Medium Enterprise Administration, Ministry of Economic Affairs, 2009.

V The SME Service Network – Providing Service at the Local Level

1. The SME Service Network

(1) Service Network Structure

To support the development of Taiwan's more than 1.24 million SMEs, the Ministry of Economic Affairs (MOEA) has established a Central Region Office in Taichung and a Southern Region Office in Kaohsiung to coordinate the guidance and service resources of the various agencies that fall under the MOEA. Besides providing service to SMEs in Central and Southern Taiwan through these Offices, the MOEA also leverages the capabilities of private-sector organizations, including the SME Service Centers that are attached to each county and city government in Taiwan, the SME service centers established by industry associations, the Taiwan SME Association and the Honorary SME Instructor Association. Together, these organizations form a dense, comprehensive SME service network (Figure 13-5-1).

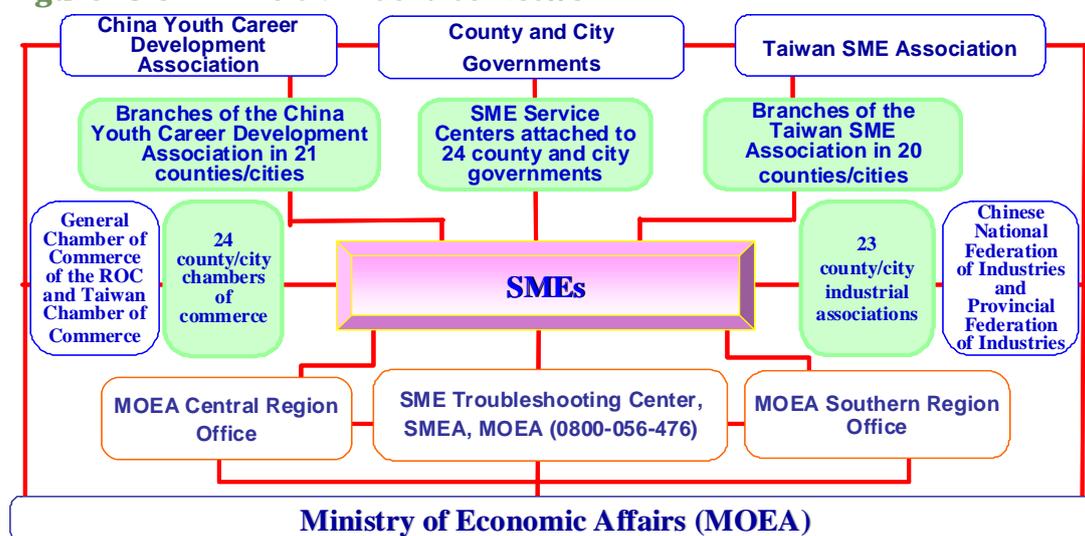
(2) Service Network Functions

The function performed by the SME service network is a bi-directional one. The SME service network helps to spread awareness of the services that the government provides for SMEs, so that SMEs can fully understand the resources available to them. At the same time, the SME service network acts as a conduit for reporting SMEs' needs to the relevant government agencies, and thus plays an important role in providing reference material for the government's SME policy formulation. The work items undertaken by the SME service

network include: publicizing government directives and guidance measures, and providing other relevant information; organizing lectures, hands-on learning opportunities and SME seminars; receiving SMEs' applications for guidance service, and referring them to the relevant guidance provider; recruiting experts to man the SME service centers, and providing guidance and consulting services; maintaining close contact with SMEs to monitor trends in SME operations; and identifying the types of service that SMEs require.

When SMEs experience any operational difficulties, they have the choice of contacting the relevant government agencies directly, or accessing the services and resources they need through the service network that the MOEA has established, in line with the government's goal of providing proactive care and service for SMEs.

Figure 13-5-1 The SME Service Network



Note: SMEs located in special zones such as Industrial Districts, Export-processing Zones or Science Parks can receive services provided by the zone administration.

Source: Small and Medium Enterprise Administration, Ministry of Economic Affairs, 2009.

(3) The Service Network's Work Items

- a. Publicizing government directives and guidance measures, and providing other relevant information.
- b. Organizing lectures, hands-on learning opportunities and SME seminars.
- c. Receiving SMEs' applications for guidance service, and referring them to the relevant guidance provider.
- d. Recruiting experts to man the SME service centers and provide guidance and consulting services.

- e. Maintaining close contact with SMEs to monitor trends in SME operations and identify the types of service that SMEs require.

2. The SME Honorary Instructor (Corporate Service Volunteer) System

The aim of the Plan to Strengthen the Functioning of SME Honorary Instructors (Corporate Service Volunteers) at the County and City Level is to help local enterprises make effective use of government resources, by combining these resources with local resources to strengthen their enterprise management, while also promoting cross-industry exchange and the sharing of knowledge and experience.

(1) Implementation Strategy

- a. Integrating the operations of local service center service networks to enhance policy implementation and ensure that business enterprises' views are heard.
- b. Assisting local SMEs by promoting business opportunity exchange and encouraging collaboration between industry and universities.

(2) Selection Mechanism

- a. Definition: The position of SME Honorary Instructor is an honorary, unpaid position, the holders of which serve as a bridge linking government and business enterprises together.
- b. Qualifications: To be eligible to serve as an SME Honorary Instructor, a person must have no record of dishonored bills and no criminal convictions, and must have obtained a Volunteer Basic Training Certificate. Candidates must also meet one of the following two criteria: (1) Possess at least five years' experience in running a reputable business enterprise, along with professional expertise; (2) Have received an award from a government agency, or be the responsible person of an enterprise that has received such an award.
- c. Term of office: SME Honorary Instructors serve for a period of three years. Those who provide service totaling at least 48 hours during this period are eligible for re-appointment.
- d. Appointment: (1) Candidates may be recommended by a government agency, a foundation or civic organization, or by an existing SME Honorary Instructor (Corporate Service Volunteer). (2) Candidates must pass a review of their written application and final review. (3) Candidates may not be appointed as SME Honorary Instructors until they have completed initial training. (4) There are currently a total of 1,350 SME Honorary Instructors.

Chapter 14

Integrating Taiwan's SME Financing Mechanisms

The government's Financing Guidance System provides small and medium enterprises (SMEs) with finance-related consulting, diagnostic and guidance services, as well as coordinating the provision of financing to SMEs by financial institutions, helping SMEs to establish sound financial and accounting systems, and cultivating SME financial manager talent to enhance SMEs' financial management capabilities. In addition, through the establishment of SME financing service windows at financial institutions, and working in collaboration with the SME Credit Guarantee Fund and private-sector venture capital firms, the Financing Guidance System helps SMEs to access the credit guarantees and venture capital funding that they need. By giving SMEs easier access to financing, the System helps them to achieve sustainable development in today's fiercely competitive business environment.

I Promoting Investment

To help SMEs overcome their difficulties in securing equity investment, a number of projects have been implemented over the years. The results achieved in the implementation of these projects are outlined below:

1. Establishment of SME Development Corporations

In accordance with the *SME Development Statute*, the government set up the SME Development Fund, which in turn has established a number of SME Development Corporations. Besides helping SMEs to obtain funding through direct and indirect investment, these corporations also provide assistance with domestic and international technology collaboration, market and product development and management consulting services, as well as helping SMEs to formulate medium- and long-term funding plans.

Development corporations that have received funding from the SME Development Fund include: (1) Taiwan SME Development Corporation Ltd. (SME Development Fund investment totaling NT\$87 million); (2) Sunstar Ltd. (NT\$69,934,000); (3) Trinity Investment Corporation (NT\$55 million).

The distribution of the SME Development Corporations' investment by industry is as

follows: optoelectronics industry, 18%; biotechnology, 9%; electronic components manufacturing, 27%; software and IC design, 16%; other (including nanotechnology), 30%.

As of the end of June 2009, the SME Development Corporations had invested a cumulative total of NT\$4,154.8 million in 263 enterprises. The SME Development Fund had achieved the following return on its investment: stock dividends NT\$68.4 million; cash dividends NT\$52.42 million.

2. Investment by the SME Start-up Investment Trust Account in SMEs with Significant Growth Potential

On May 29, 2003, the SMEA received approval from the Executive Yuan to transfer NT\$2 billion from the SME Development Fund to establish the SME Start-up Investment Trust Account, with the funds in question to be entrusted to the custody of designated banks. Investment from the SME Start-up Investment Trust Account began in October 2003.

Using the investment trust investment model, five asset management companies were appointed to evaluate the advisability of investing in selected SMEs that were either innovation-oriented or had undertaken upgrading or transformation within the past five years.

The distribution of this investment by industry has been as follows: optoelectronics industry, 24%; biotechnology, 7%; electronic components manufacturing, 26%; software and IC design, 21%; other (including nanotechnology), 22%.

As of the end of June 2009, the SME Start-up Investment Trust Account had invested in 75 SMEs (of which 12 subsequently secured either a stock market or OTC listing). The total investment by the SME Development Fund came to NT\$1,364,326,100, with the asset management companies providing a further NT\$1,540,255,100. The return on investment was: cash dividends NT\$54.95 million; profits from disposal of assets – just over NT\$137.73 million; loss NT\$257.31 million.

3. The National Development Fund's Plan for Promoting Investment in SMEs

To stimulate investment in the SME sector by venture capital firms and other private-sector companies, on April 17, 2007 the National Development Fund, Executive Yuan approved the Plan for Promoting Investment in SMEs; the National Development Fund allocated NT\$10 billion for investment in SMEs. This Plan is being implemented over a period of 10 years. The formal launch of the Plan for Promoting Investment in SMEs took place on August 30, 2007.

The SMEA has established an Investment Services Office to be responsible for providing investment-related services. Using an investment trust account system, a group of seven asset management companies have been appointed to evaluate the advisability of investing in particular Taiwanese SMEs, and in overseas investment plans by Taiwanese citizens (and Overseas Chinese). If the investment targets are approved, matching funding is provided from the money allocated by the National Development Fund. The total amount of government funding provided may not exceed 49% of the capitalization of the firm that receives the investment.

The distribution of this investment by industry is as follows: optoelectronics industry, 40%; biotechnology, 25%; electronic components manufacturing, 10%; software and IC design industry, 5%; other (including nanotechnology), 20%.

As of the end of June 2009, a total of 24 firms had been invested in. The cumulative amount of investment was NT\$736,204,000, with the asset management companies providing an additional NT\$741,479,000 of investment, for a combined total of NT\$1,477,683,000.

4. The Investment Services Office – Coordinating Investment Projects, Adding Value to Individual Projects and Undertaking Post-investment Monitoring and Follow-up

The Investment Services Office that the SMEA established in September 2007 was tasked to undertake investment-related activities to implement the Plan for Promoting Investment in SMEs and the SME Start-up Investment Trust Account project, by serving as a brains trust and also providing administrative services support. For SMEs and the companies commissioned to provide guidance to incubator centers, the Office provides services that integrate guidance with domestic and international business matching, while also serving as a bridge for communication between the asset management companies and the SMEs that are being invested in.

II Financing Diagnostics and Guidance

Working through the SME Financing Guidance System and the SME Troubleshooting Center, the SMEA provides a wide range of guidance-related information, coordinates the provision of financing assistance by financial institutions to business enterprises that are experiencing difficulties, and helps enterprises to adopt sound financial and accounting systems and to upgrade their financial management capabilities.

1. The SME Financing Services Platform

At the 42nd Meeting of the SME Development Fund Managing Committee, held in April 2008, the Committee approved the disbursement of NT\$5 million from the SME Development Fund (along with an additional NT\$5 million each from five banks – Taiwan Cooperative Bank, First Commercial Bank, Taiwan Business Bank, E.Sun Bank and China Trust Commercial Bank – for a total investment of NT\$30 million) to establish an SME Financing Services Platform to make it easier for SMEs to secure bank loans by providing clear, transparent details about SME operations that banks can use as a basis for decision-making when deciding whether to grant loans to SMEs. If banks have a clearer picture of the business models that SMEs are using and of what their funding needs are, they are more likely to expand the provision of loans to SMEs, creating a win-win-win situation for SMEs, banks, and the government, which is seeking to provide active support to help SMEs achieve steady growth.

2. Integrating the Various Financing Services Organizations through the Establishment of a Financing Services Team

The Financing Services Team has been established to serve as a platform for communication between SMEs and banks, and to coordinate the operations of the various financing services organizations. By integrating the work of the government's guidance teams with the guidance services that banks provide, the aim is to provide SMEs throughout Taiwan with timely consulting services related to financing problems, financial management, accounting systems, etc. Teams of experts undertake evaluation to help SMEs establish appropriate accounting systems, improve their management structure and make themselves more credit-worthy, thereby increasing the likelihood that banks will be willing to lend to them. By helping SMEs to obtain the working capital they need, the Financing Services Team contributes to raising the competitiveness of Taiwan's SMEs.

3. Helping SMEs to Make Effective Use of Intellectual Property Rights to Obtain Financing

Today, in both traditional industries and emerging industries, intellectual property has become an important asset that is closely linked to a firm's core competitiveness. Due to the special characteristics of intellectual property – including the fact that its value is difficult to measure, relatively unstable, and difficult to express in monetary terms – financial institutions have generally been reluctant to accept intellectual property as security for loans. To help those SMEs that possess significant intellectual property to overcome their financing difficulties, the SMEA has launched the Plan for Promoting the Use of Intellectual Property by SMEs to Obtain Financing. By providing guidance in the areas of intellectual property rights and financial management, the Plan aims to help SMEs to strengthen their business

models, while also assisting banks with the technical review of loan applications, thereby helping to bring borrowers and lenders closer together in terms of their understanding of the uses of intellectual property in financing. At the same time, the provision of credit guarantees helps to reduce the level of risk that banks need to take on, providing further encouragement for the use of intellectual property in SME financing.

4. Strengthening the Financial Structure of Taiwan's SMEs – SME Financial Specialist Certification

SMEs tend to suffer from limited resources and limited manpower. In addition, their owners and managers are generally more oriented towards the technical and sales aspects of company operations; financial and accounting skills are often lacking. Strengthening the cultivation and certification of SME financial and accounting personnel can thus make a significant contribution towards enhancing SME competitiveness. With this goal in mind, in 2008 the SMEA joined forces with the Taiwan Academy of Banking and Finance (TABF) to plan an SME financial specialist certification system that will help to improve the performance of SMEs' financial personnel and enhance the quality of SMEs' financial managers and financial consultants, thereby helping Taiwan's SMEs to strengthen their financial status and enhance their managerial efficiency.

The SME Financial Specialist Certification will be awarded in three grades, linked to years of service and position held. The three grades are: SME Financial Staff Certification (low-level certification), SME Financial Manager Certification (mid-level certification), and SME Financial Consultant Certification (high-level). The first wave of certification was held in 2008; a total of 5,547 individuals registered to seek certification, reflecting the value that is attached to this certification.

To encourage SMEs' financial specialists to continue to upgrade their skills on an ongoing basis, all SME financial staff, financial managers and financial consultants who have been awarded SME Financial Specialist Certification are required to receive at least 18 hours of relevant training within three years of obtaining their certification or having it renewed, to be eligible to have the certification renewed at the end of that time.

III Financing Guarantees

As a rule, SMEs find it more difficult than large enterprises to secure working capital loans from financial institutions. The government has worked actively to encourage SMEs to apply for various categories of special loans, thereby helping to expand the range of financing channels available to SMEs, and has worked closely with the SME Credit Guarantee Fund to

provide SMEs with financing diagnostics and credit guarantees, in an effort to help resolve SMEs' funding difficulties.

1. Credit Guarantees

The government established the SME Credit Guarantee Fund in 1974 with the aim of strengthening the provision of credit guarantees to SMEs. In 2003, the Ministry of Economic Affairs (MOEA) replaced the Ministry of Finance as the government agency with oversight over the SME Credit Guarantee Fund, with a view to ensuring that the credit guarantee system and industry guidance mechanisms would be able to meet the real needs of industry, and to achieve greater consistency in the formulation and implementation of industrial policy. In line with the government's industrial development policy, the SME Credit Guarantee Fund has continued to expand the scale of credit guarantee provision; there has been a significant, steady increase in both the volume of credit guarantees granted to SMEs and the size of the loans that SMEs have been able to secure using these credit guarantees (Table 14-3-1).

Table 14-3-1 Provision of Credit Guarantees to SMEs by the SME Credit Guarantee Fund

Units: NT\$ billions; credit guarantees

Period	Amount of Funds Allocated by the Government	Amount of Funds Donated by the Contracted Bank	No. of Credit Guarantee Applications Accepted	Combined Value of Credit Guarantees	Total Amount of Financing Secured	Amount of Subrogated Payment
The year before the change in the regulatory authority (June 2002 – May 2003)	6.00	1.43	161,940	147.1	252.1	5.07
The year after the change in the regulatory authority (June 2003 – May 2004)	10.32	0.80	230,197	237.8	402.6	5.33
Growth rate (year after the change compared to year before the change)	72.0%	-44.2%	42.1%	61.7%	59.7%	5.0%
2004	9.32	0.03	260,322	302.7	497.5	4.66
2005	5.25	1.06	267,264	322.6	522.3	4.52
2006	5.50	1.49	257,806	308.6	513.9	5.09
2007	5.00	1.97	235,354	284.9	487.9	7.45
2008	6.50	2.06	234,858	327.3	518.9	7.92

Notes: 1. The total amount of funding allocated in the first year after the change in the regulatory authority (NT\$10.32 billion) is calculated as follows: 2003 budget appropriation (NT\$1 billion) + 2003 second reserve allocation (NT\$3.5 billion) + 2004 budget appropriation (NT\$5.82 billion).

2. The amount of government funding allocated in 2008 (NT\$6.5 billion) includes the 2008 second reserve allocation (NT\$1.5 billion; funds in place as of January 2009).

Source: SME Credit Guarantee Fund.

2. Implementation of the Fourth Stage of the Plan for Increasing Loans to SMEs by Domestic Banks

On July 1, 2005, the Financial Supervisory Commission (FSC) launched the Plan for Increasing Loans to SMEs by Domestic Banks, to be implemented over a period of three years, with the aim of helping SMEs to secure working capital loans by strengthening the banks' role as

intermediaries; implementation of the original three-year plan was completed on June 30, 2008. To encourage the development of a long-term partnership relationship between SMEs and banks, and thus help SMEs to obtain working capital, the FSC decided that implementation of the Plan for Increasing Loans to SMEs by Domestic Banks should continue for a further year and a half, over the period from July 1, 2008 to December 31, 2009. In this fourth stage of Plan implementation, banks are being asked to implement more rigorous risk management measures, and a range of new incentive measures have been introduced for those banks that have achieved outstanding performance in Plan implementation. It is anticipated that, from December 2009 onwards, the government will continue to encourage domestic banks to increase their lending to SMEs. As of the end of June 2009, the total of outstanding loans to SMEs by domestic banks stood at NT\$3,056.1 billion.

3. Establishment of SME Financing Service Contact Windows

To help provide SME owners and managers with the financing information they need, and to expand the range of financing service channels available to SMEs, the SMEA has arranged for the establishment of SME Financing Service Contact Windows in the branches of financial institutions. These contact windows provide inquiry and consulting services relating to financing guarantees, investment and financial management.

4. Policy Loans

The government provides SMEs with various types of policy loans, either directly or through collaboration with banks. What distinguishes these loans from ordinary loans is that the loans are granted for specific purposes, and are granted with preferential interest rates. Altogether, 24 different types of loan are available in 11 categories: SME upgrading loans, loans for the purchase of production equipment, business start-up loans, R&D loans, tourism development loans, export and overseas investment loans, recovery loans, small-value loans, international patent dispute loans, distribution services loans, and loans for entrepreneurs who have returned to Taiwan from overseas.

5. Measures Implemented in Line with the Government's "Three Supports" Policy

To help business enterprises cope with the recent changes in the economic climate, the MOEA has been leveraging the SME credit guarantee mechanism to make it easier for SMEs to obtain working capital loans, in line with the government's "Three Supports" policy (whereby the government supports the banks, the banks support business enterprises, and business enterprises support their employees). In the second half of 2008, the MOEA

introduced a package of measures to expand credit guarantee provision under the name “SME Credit Guarantee Fund Golden Lever Project”; it was anticipated that these measures would help to minimize the negative impact of the global economic downturn on SMEs by making financial institutions more willing to extend loans to them. In 2009 the SME Credit Guarantee Fund received a budget appropriation of NT\$6 billion, plus a 2008 second reserve allocation of NT\$1.5 billion and NT\$1.5 billion in donations from banks that have signed agreements with the SME Credit Guarantee Fund, all of which has helped the SME Credit Guarantee Fund to maintain its ability to provide credit guarantees and help SMEs obtain the working capital they need, in line with government policy (for more detailed information about the SME Credit Guarantee Fund Golden Lever Project, see Section 4 of Chapter 15).

IV The Recent Development of the SME Credit Guarantee Fund

In 1974, the government provided funding support to establish the SME Credit Guarantee Fund (which is today the longest-established of the specialist SME guidance providers), the first specialist credit guarantee institution to be set up in Taiwan.

1. SME Credit Guarantee Fund’s Functions and Its Evolution Over Time

The recent developments of the fund are discussed below:

The SME Credit Guarantee Fund’s main functions are as follows: (1) To implement the government’s SME guidance policy, helping SMEs to overcome the difficulties that they experience when trying to provide the collateral needed to secure loans. (2) To make financial institutions more willing to provide loans to SMEs. (3) To maximize the efficacy of guidance projects undertaken by other SME guidance organizations. (4) To provide 20 different types of credit guarantee in line with the needs of government policy implementation.

On May 15, 2003, the Executive Yuan approved the replacement of the Ministry of Finance by the Ministry of Economic Affairs (MOEA) as the regulatory authority with oversight over the SME Credit Guarantee Fund; from this point on, the SME Credit Guarantee Fund was able to provide both direct and indirect credit guarantees.

2. Development of Innovative New Services by the SME Credit Guarantee Fund

Over the years, the SME Credit Guarantee Fund has been vigorous in its implementation of

credit guarantee services in accordance with the government's SME guidance policy. In the last few years, the Fund has introduced a range of innovative new services in line with the changes in the financial environment and in customer needs.

(1) Direct Credit Guarantees

In line with government policy regarding industrial development and the strengthening of SME financing, SMEs with significant R&D, operational or market development potential may now apply directly to the SME Credit Guarantee Fund for credit guarantees, which they can then use to secure financing from financial institutions. Over the period from 2004 to June 2009, a total of 2,229 direct credit guarantees were provided, with a combined value of NT\$6,769 million, enabling the enterprises concerned to obtain financing that totaled NT\$8,704 million.

The makers of the successful movie *Cape No. 7* were able to secure NT\$15 million in loans using direct credit guarantees provided by the SME Credit Guarantee Fund. The producers of Santimen glass beads, which are referred to in the movie, had secured direct credit guarantees totaling NT\$3 million back in September 2005.

(2) Credit Guarantees for Firefly Counterpart Guarantee Fund Loans

In March 2006, the SME Credit Guarantee Fund launched the Firefly Counterpart Guarantee Fund (FCGF) loan scheme, whereby leading enterprises would make donations that would be matched by equivalent funding from the SME Credit Guarantee Fund to provide credit guarantees for the leading enterprises' suppliers, customers, partner companies, distributors, and/or franchisees, thereby helping to ensure recovery of receivables, and providing encouragement for investment in innovation, R&D, activities that can boost product value-added, and industrial upgrading. Well-known companies that have made donations under this scheme include China Steel, Chunghwa Telecom, New Land Developers Group, etc.

As of June 2009 a total of 4,244 credit guarantees had been provided under the FCGF scheme, with a combined value of NT\$3,723 million, enabling the enterprises concerned to secure loans to the value of NT\$3,984 million.

(3) Credit Guarantees for Phoenix Loans for Micro-entrepreneurs

On February 16, 2009, the Council of Labor Affairs, Executive Yuan merged the Micro-enterprise Start-up Loans and Phoenix Loans for Female Entrepreneurs schemes to create the Phoenix Loans for Micro-entrepreneurs program, which targets female entrepreneurs aged 20 – 65 and male entrepreneurs aged 45 – 65.

- a. Financing for new business start-up: Phoenix Loans for Micro-entrepreneurs are capped at NT\$1 million, with a maximum loan period of 7 years. The interest rate is the interest rate on two-year postal time deposits plus 0.575%; the Council of Labor Affairs subsidizes the whole of the interest payment for the first two years of the loan.
- b. Credit guarantee mechanism: Credit guarantees cover 95% of the value of the loan, with no guarantor required. The banks provide the loans; the Council of Labor Affairs' Employment Stability Fund and the SME Credit Guarantee Fund each provide NT\$150 million (for a combined total of NT\$300 million) to pay for credit guarantees. The total amount of credit guarantees that may be provided for this type of loan has been set at NT\$3 billion.

3. Handling of Project Loans and Credit Guarantees for Large Enterprises by Financial Enterprises in Line with the Government's Efforts to Revitalize the Economy

The financial crisis that began in the U.S. has had a serious impact on global financial markets, causing banks to become more conservative in their credit policies. In cases where the market value of collateral has fallen because of the global economic downturn, the need to reduce risk may lead banks to ask loan recipients to provide additional collateral, making it even more difficult for business enterprises to secure financing. SMEs can obtain credit guarantees from the SME Credit Guarantee Fund, but larger firms (which are too large to be classed as SMEs) are in urgent need of government assistance to help them obtain the working capital they need, given the serious impact on the economy that can result if these enterprises get into difficulties.

To help non-SMEs obtain working capital, the National Development Fund has commissioned the SME Credit Guarantee Fund to provide Credit Guarantees to Help Important Enterprises Obtain Financing, with a total of NT\$1.6 billion being allocated for this purpose. This scheme has been incorporated into the Project for the Handling by Financial Enterprises of Loans and Credit Guarantees for non-SMEs to Help Revitalize the Economy. An additional NT\$1 billion in funding has been provided for this scheme, which the SME Credit Guarantee Fund has been asked to implement. It is anticipated that this project will help to stimulate investment, enable the enterprises concerned to maintain stable operations, and help to protect jobs.

The amount of short- and medium-term working capital loans that a single enterprise can obtain is capped at NT\$60 million, while the amount of capital expenditure financing is capped at NT\$200 million; the credit guarantees provided to these enterprises cannot exceed

70% of the value of the loan. The handling fee for credit guarantees has been set at 0.75% of the value of the credit guarantee; implementation of this scheme will cease on December 31, 2010.

4. Establishment of the SME Credit Guarantee Fund College, the Torchbearer Fund of Guidance and Assistance, and Other Guidance Mechanisms

The SME Credit Guarantee Fund College and the Torchbearer Fund of Guidance and Assistance were established by the SME Credit Guarantee Fund as part of its efforts to create a comprehensive guidance mechanism framework. The idea is that, through the operation of these two mechanisms, besides providing credit guarantees the SME Credit Guarantee Fund will also be contributing to the exchange of knowledge and experience, thereby helping to raise the competitiveness of Taiwan's SMEs and improve their risk management and financial management capabilities.

5. The Benefits Achieved in Terms of SME Funding

After 34 years of hard work, the SME Credit Guarantee Fund has achieved impressive results, whether in terms of expanding the types of enterprise and industry that are eligible to receive credit guarantees, introducing new types of credit guarantee, increasing the size of the credit guarantees provided, recruiting new financial institutions to collaborate with the Fund, and supporting the implementation of new SME financing measures. The total volume of credit guarantees provided has grown rapidly.

Table 14-4-1 The Performance of the SME Credit Guarantee Fund in Credit Guarantee Provision, 2001–2009

Year	Item	Cumulative no. of SMEs in receipt of credit guarantees	No. of credit guarantee applications accepted	Combined value of credit guarantees (NT\$ millions)	Total amount of financing secured (NT\$ millions)
2001		144,402	149,610	147,804	233,913
2002		162,293	160,123	151,028	250,977
2003		187,517	199,783	205,179	347,852
2004		216,964	265,137	315,449	516,775
2005		243,325	271,401	333,020	538,947
2006		262,441	261,824	319,604	530,459
2007		273,215	238,801	290,611	495,257
2008		280,714	237,446	330,757	523,151
Jan. – June 2009		284,477	112,833	188,971	267,511
Cumulative total (1974 – June 2009)		284,477	3,720,457	4,464,260	6,642,759

Source: SME Credit Guarantee Fund.

As of the end of June 2009, the SME Credit Guarantee Fund had helped a total of 284,477 enterprises. The total number of credit guarantees provided through financial institutions was 3,720,457, with a cumulative credit guarantee volume of NT\$6,642.8 billion.

The SME Credit Guarantee Fund has thus made a major contribution towards helping Taiwan's SMEs to grow, and towards the development of the economy as a whole. The number and value of credit guarantees provided by the SME Credit Guarantee Fund over the last eight years are shown in Table 14-4-1.

6. The Results Achieved through the Provision of Credit Guarantees to SMEs

According to statistics compiled by the SME Credit Guarantee Fund, as of the end of 2008, 74.71% of the SMEs in receipt of SME credit guarantees had been granted guarantees of less than NT\$2 million, 89.08% had been granted guarantees of less than NT\$5 million, and 95.22% had been granted guarantees of less than NT\$10 million. Of the SMEs in receipt of SME credit guarantees, 94.94% had capitalization of less than NT\$30 million. It can thus be seen that small enterprises are the main recipient of SME credit guarantees.

The vast majority of SMEs that receive credit guarantees from the SME Credit Guarantee Fund find that, within a few years, they have grown sufficiently and their credit record has improved sufficiently that they no longer need credit guarantees; instead, they are able to raise money on the capital markets or obtain loans directly from banks. As of 2008, out of 187 SMEs that had won the National Award of Outstanding Small and Medium Enterprises, 141 had previously been recipients of credit guarantees from the SME Credit Guarantee Fund; the same was true of 137 out of 190 winners of the Little Giant Award, 348 out of 604 winners of the Small and Medium Enterprise Innovation Research Award, and 9 out of 12 winners of the National Quality Award. Furthermore, more than 2,000 of the SMEs that have been granted credit guarantees in the past have since grown sufficiently large to be classed as "large enterprises" rather than SMEs, and 544 have secured a stock market or OTC listing.

7. The Results Achieved through the Provision of Credit Guarantees by the SME Credit Guarantee Fund

In 2008, the SME Credit Guarantee Fund provided credit guarantees worth a total of NT\$330.8 billion, helping approximately 147,000 enterprises to obtain NT\$523.2 billion in bank loans. 234,858 of the credit guarantees were not supported by special project funds; these guarantees had a combined value of NT\$327.3 billion, and helped SMEs to secure financing worth 518.9 billion from financial institutions. As of the end of 2008, the total amount of outstanding credit guarantees was NT\$310.8 billion, representing an increase of 8.14% compared to the end of 2007; the amount of loans outstanding stood at NT\$478.5 billion, representing an increase of 9.33%. The number and value of the various types of

credit guarantees as of the end of 2008 are shown in Table 14-4-2 below.

Table 14-4-2 The Cumulative Number of Cases and Value of Individual Types of Credit Guarantees as of the End of 2008

Type of Credit Guarantee	Cumulative No. of Guarantees Provided	Cumulative Value of Guarantees Provided (NT\$ million)
Credit guarantees for Young Entrepreneur Loans	13,923	10,159
Credit guarantees for Brand Development Loans	106	2,298
Credit guarantees for Digital Content Industry and Cultural and Creative Industry Development Loans	162	1,395
Credit guarantees for Micro-enterprise Start-up Loans	8,366	6,902
Credit guarantees for R&D Loans for Industrial Upgrading	344	4,296
Credit guarantees for R&D Environment Construction Loans	6	90
Credit guarantees for Loans to Help Taiwanese Enterprises Fight International Patent Lawsuits	9	141
Credit guarantees for Disaster Recovery Loans	7	32
Credit guarantees for Firefly Counterpart Guarantee Fund Loans	353	127
Credit guarantees for Film and Broadcasting Industry Preferential Loans	10	70
Credit Guarantees to Help Important Enterprises Obtain Financing	100	970
Credit guarantees for Firefly Counterpart Guarantee Fund Loans for Outlying Island Development	2	30
Credit guarantees for Firefly Counterpart Guarantee Fund Loans for Business Revitalization	1	1
Credit guarantees for Obtaining Loans to Repair Buildings Damaged in Natural Disasters	1	1

Source: SME Credit Guarantee Fund.

V The Resources Allocated by the Government for SME Development

The *SME Development Statute* clearly stipulates that the government should support SME development, and that the *White Paper on Small and Medium Enterprises in Taiwan* should describe all of the resources allocated to support SME development. Since 2001, the *White Paper* has included a section outlining these resources. However, the *SME Development Statute* provision in question does not clearly define the scope of “resources allocated for SME development.” For the purposes of this section, with the exception of government purchasing of goods, construction work or services from SMEs, all other resources – such as government resources allocated for SME guidance or for the provision of project loans to SMEs – are limited to resources provided by agencies at the central government level. The data presented in this section are based on the actual amounts spent. In all, government resources allocated for SME development in 2008 amounted to NT\$807,783 million (including donations to the SME Credit Guarantee Fund), representing a substantial increase of NT\$285,172 million compared to the 2007 total of NT\$522,611 million; most of this increase was derived from a NT\$290,118 million rise in government purchasing from SMEs.

1. Government Purchasing from SMEs – NT\$772,870 Million

Tender award statistics from the Government Procurement Information System show that, in

2008, total government purchasing from SMEs (regardless of whether the SMEs were being used as contractors or sub-contractors) came to NT\$772,870 million, representing a substantial increase of NT\$290,118 million compared to the 2007 total of NT\$482,752 million. The share of total government procurement going to SMEs (whether as contractors or subcontractors) rose dramatically from 42.61% in 2007 to 60.65% in 2008. There were 13 government agencies that undertook 100% of their purchasing with SMEs, and another 37 agencies where the SMEs' share of that agency's total purchasing exceeded 90%. There was no government agency where the SMEs' share of purchasing was less than 30%; this was probably the main reason for the substantial rise in the volume of government purchasing going to SMEs in 2008.

2. Government Spending on the Provision of Guidance to SMEs – NT\$28,230 Million

Previously, the statistics for government resources allocated to SME guidance used by the SMEA covered only those agencies whose work was closely related to SME guidance – such as the SMEA itself, the Industrial Development Bureau, the Bureau of Foreign Trade, the Commerce Department, the Industrial Technology Department and the Industrial Development and Investment Center – as well as the 11 guidance systems. Subsequently, the manpower cultivation funding provided by the Council of Labor Affairs was added to the total, and since 2005 the government's contribution to the SME Credit Guarantee Fund has also been included. As financial institutions also make donations to the SME Credit Guarantee Fund, thereby increasing the Fund's ability to provide credit guarantees to SMEs, starting from 2008 these donations are also being included when calculating total spending on the provision of SME guidance.

As regards the funding provided by those government agencies that are closely involved with SME guidance, in 2008 the settled account of expenditures for these agencies came to NT\$37,746 million, of which NT\$26,066 million (69.06% of the total) was applied to SME guidance (Table 14-5-1). In 2008, the Department of Industrial Technology made the single largest contribution to SME guidance, at NT\$11,024 million, followed by the Industrial Development Bureau with NT\$3,706 million, and the Bureau of Foreign Trade with NT\$2,862 million. All of the SMEA's budget of NT\$3,060 million was applied to SME guidance; in addition, the government donated NT\$5 billion to the SME Credit Guarantee Fund, which falls under the category of SME financing guidance.

By comparison with 2007, overall SME guidance funding rose by NT\$3,762 million. While the amount spent by the Commerce Department on SME funding fell by NT\$75 million, all other agencies increased their spending on SME guidance. The most pronounced

rise was seen at the SMEA, where spending on SME guidance increased by NT\$1,493 million.

Table 14-5-1 Resources Allocated to SME Guidance by the Ministry of Economic Affairs

Units: NT\$ thousands; %

Agency	Annual Amount	Settled Account of Expenditures (2008)	Total Expenditure on SME Guidance
Small and Medium Enterprise Administration (included the SME Development Fund)		8,060,239	8,060,239 (100.00)
Industrial Development Bureau (industrial technology guidance and the Industrial District Development Fund)		5,720,435	3,705,723 (64.78)
Bureau of Foreign Trade (overseas marketing guidance and the Trade Promotion Fund)		4,257,536	2,862,393 (67.23)
Commerce Department (promoting the modernization of commercial operations and the development of relevant technology)		1,452,738	413,545 (28.47)
Department of Industrial Technology		18,255,469	11,023,968 (60.39)
Total		37,746,417	26,065,868 (69.06)

Notes: 1. Figures in parentheses are the percentage of the total settled account of expenditures for the agency in question.

2. The SMEA's expenditure includes a contribution of NT\$5.0 billion made to the SME Credit Guarantee Fund.

Source: The respective agencies.

Regarding the percentage of government agencies' total budgets allocated to SME guidance, in 2008 the share of Ministry of Economic Affairs resources allocated to SME guidance rose by 5.90 percentage points. The share of Industrial Development Bureau funding going on SME guidance increased by 5.45 percentage points, the SMEA's share remained the same, at 100%, and the Commerce Department's share fell by 0.28 percentage points; most other agencies saw an increase in the share of total funding going on SME guidance (Table 14-5-2).

Table 14-5-2 Changes in the Shares of MOEA Agencies' Budgets Allocated to SME Guidance

Unit: NT\$ thousands

Agency	Annual Amount	Total Spending on SME Guidance in 2007	Total Spending on SME Guidance in 2008	Change (2007 – 2008)
Small and Medium Enterprise Administration (including the SME Development Fund)		6,567,421 (100.00)	8,060,239 (100.00)	1,492,818 (0.00)
Industrial Development Bureau (industrial technology guidance and the Industrial District Development Fund)		2,628,291 (59.33)	3,705,723 (64.78)	1,077,432 (5.45)
Bureau of Foreign Trade (overseas marketing guidance and the Trade Promotion Fund)		2,355,396 (65.15)	2,862,393 (67.23)	506,997 (2.08)
Commerce Department (promoting the modernization of commercial operations and the development of relevant technology)		488,301 (28.75)	413,545 (28.47)	-74,756 (-0.28)
Department of Industrial Technology		10,252,836 (57.66)	11,023,968 (60.39)	771,132 (2.73)
Intellectual Property Office		11,683 (0.95)	—	—
Total		22,304,239 (63.16)	26,065,868 (69.06)	3,761,629 (5.90)

Note: In 2008, the Intellectual Property Office did not engage in any expenditure related to SME guidance.

Source: Small and Medium Enterprise Administration, Ministry of Economic Affairs.

In 2008, besides the government resources applied to SME guidance by various agencies falling under the MOEA, nearly 40 financial institutions donated a total of approximately NT\$2 billion to the SME Credit Guarantee Fund to help strengthen the Fund's ability to provide credit guarantees. The combined total of public- and private-sector resources allocated to SME guidance in 2008 was thus NT\$28,066 million.

Table 14-5-3 Government Spending on SME Project Financing Loans in 2008

Unit: NT\$ millions

Loan Type	Targets	Funding Sources	Amount	
			Total Loan Amount	Government Expenditure
SME Upgrading Loans	SMEs	The Executive Yuan Development Fund provides one quarter of the funds for each loan, with the remaining three quarters being provided by banks.	3,020	755
Young Entrepreneur Loans	Young entrepreneurs aged 20 – 45 who are starting their first business	The Sino-American Fund for Economic and Social development provides half of the funds for each loan, with the other half being provided by banks.	561	281
SME Development Fund Project Loans	SMEs	The SME Development Fund provides all funding.	500	500
SME Root Establishment Project Loans	SMEs	The Council for Economic Planning and Development provides funding support in the form of medium- and long-range funds.	6,939	4,959
Loans for Indigenous People (including Agriculture, Forestry, Fishing and Animal Husbandry Loans, Agro-tourism Loans, Enterprise Loans, Transportation Industry Loans, Industrial and Commercial Loans, Housing Loans, and Service Industry Loans)	Indigenous People	The Council for Indigenous People provides all funding.	112	112
Micro-enterprise Start-up Loans	Enterprises established by the middle-aged or elderly unemployed (aged 45 – 65) that have been in existence for less than one year.	The Council of Labor Affairs makes up the interest rate differential.	143	76
Total			11,275	6,683

Source: The respective agencies.

As regards investment in human resources, the Council of Labor Affairs has been implementing an Enterprise Human Resources Upgrading Plan, with a total of around NT\$400 million being allocated to both individual and joint projects. Individual projects provide assistance for individual enterprises, encouraging their owners and managers to make use of existing equipment and resources, as well as specialist training organizations, to upgrade the capabilities and quality of their workforce. Joint projects involve the provision of guidance to groups of three or more enterprises, with the planning of joint training activities for enterprise employees, so as to share and gain maximum benefit from training

experience and resources, while enhancing the overall quality of the firms' human resources and contributing to the development of the industry or region as a whole. The resources allocated to SME manpower cultivation under this plan in 2008 totaled around NT\$164 million; total government spending on SME guidance in 2008 was thus approximately NT\$28,230 million.

3. SME Project Financing Loans in 2008 Totaled Approximately NT\$6,683 Million

The government provides six types of project financing loans that target SMEs: SME Upgrading Loans, Young Entrepreneur Loans, SME Development Fund Project Loans, SME Root Establishment Project Loans, Loans for Indigenous People (including Agriculture, Forestry, Fishing and Animal Husbandry Loans, Agro-tourism Loans, Enterprise Loans, Transportation Industry Loans, Industrial and Commercial Loans, Housing Loans, and Service Industry Loans), and Micro-enterprise Start-up Loans. As the Agricultural Machinery Loans provided by the Agricultural Development Fund are available only to farmers and fishermen, they have been omitted from the list since 2006. Total government spending on SME project financing loans in 2008 was approximately NT\$6,683 million (Table 14-5-3).

Chapter 15

SME Policy in Taiwan in 2009

To cope with the special economic situation due to the global depression, special programs have been initiated for helping SMEs. They are examined in this chapter.

I Proactive Service for SMEs at the Local Level

To help Taiwan's SMEs cope with the global financial and economic crisis, the Ministry of Economic Affairs (MOEA) has been working to integrate the local services networks of various government agencies to implement the Proactive Service for SMEs at the Local Level Plan. The aim of this plan is to ensure that the government provides service to SMEs in local communities in a truly proactive manner, helping them to overcome any difficulties that they may be experiencing in terms of financing, technology, marketing or recruitment; the overall goal is to enable SMEs to "swim against the tide" and continue to grow despite the current unfavorable economic climate.

1. The Organizational Structure Utilized in the Implementation of the Proactive Service for SMEs at the Local Level Plan

The organizational structure adopted for the Proactive Service for SMEs at the Local Level Plan has two main aspects:

(1) Coordination and Linkage

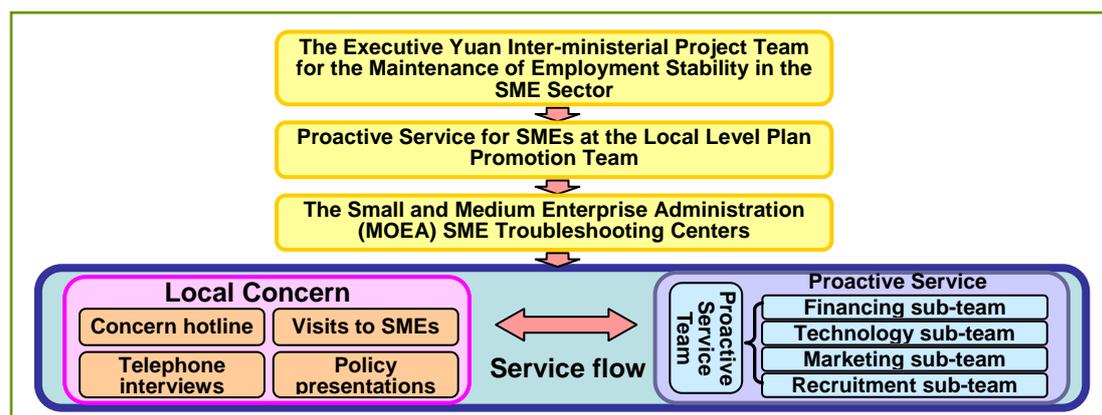
- a. The Executive Yuan has established an Inter-ministerial Project Team for the Maintenance of Employment Stability in the SME Sector, to coordinate the activities of the various government ministries and agencies in this area and supervise the implementation of the plan.
- b. The Proactive Service for SMEs at the Local Level Plan Promotion Team: This Promotion Team has been established by the Ministry of Economic Affairs to coordinate the Ministry's guidance systems with respect to SME financing, production technology, R&D, marketing and recruitment. The Promotion Team will act proactively in assisting with special cases, handling disagreements and handling other relevant matters.
- c. The SME Troubleshooting Centers: The Proactive Service for SMEs at the Local Level Plan Promotion Office is responsible for collating statistics relating to the handling of

problems by the SME Troubleshooting Centers, analyzing the types of problems that the Centers are being asked to assist with, handling special cases, reporting disputes and complaints to the relevant authorities, and carrying out follow-up monitoring (in special cases and with regard to dispute settlement).

(2) Visits to SMEs

- a. Local Concern Centers: The SME Service Centers attached to individual county and city governments have been establishing “SME Concern Hotlines,” which accept telephone or e-mail applications from SMEs that are seeking to secure an OTC listing. In addition, the administrative offices and service centers of individual industrial districts, science parks and export processing zones undertake visits to SMEs to examine their circumstances on the spot. Also at the county and city level, industry associations, chambers of commerce, SME associations, young entrepreneur associations and importer/exporter associations are involved in the Immediate Assistance Program, whereby honorary SME guidance personnel (enterprise service volunteers) conduct telephone interviews with the associations’ member companies to find out what their problems and needs are, and help them find solutions. In addition, policy presentations are held in every county and city in Taiwan, at which enterprises can submit applications for service provision on the spot.
- b. Proactive Service Teams: Financing, technology, marketing and recruitment sub-teams have been established to help SMEs in areas where they are particularly in need of assistance. These teams are able to coordinate the provision of guidance resources by different ministries and agencies, and work proactively to help SMEs solve their problems.

Figure 15-1-1 The Organization Structure Employed in the Implementation of the Proactive Service for SMEs at the Local Level Plan



Source: Small and Medium Enterprise Administration, 2009.

The organizational structure used in the implementation of the Proactive Service for SMEs at the Local Level Plan is shown in Figure 15-1-1.

2. Local Concern Mechanisms

- (1) Concern Hotline: The SME Service Centers attached to individual county and city governments have all established a Concern Hotline (0800-580-185) to handle telephone and e-mail inquiries regarding applications for an OTC listing, and to provide preliminary consulting service.
- (2) Visits to SMEs: Industrial and science park administrative offices and services centers organize visits to SMEs to find out, in a proactive manner, what SMEs' needs are, and to provide consulting service and accept applications for service provision as needed.
- (3) Telephone interviews: Industry associations at the county and city level recruit university graduates to undertake interviews with SMEs. This SME "census" provides an opportunity to make SMEs aware of government policies, find out what the associations' members' needs are, and provide assistance in various areas.
- (4) Policy presentations: The members of the Proactive Service Team tour Taiwan to give presentations in individual counties and cities, so as to publicize government policies and measures. These policy presentations also provide an opportunity to hear the voice of SMEs. At each presentation, a service team booth will be set up to provide on-site consulting and the receipt of applications for service provision.

3. The Work Undertaken by the Individual Proactive Service Team Sub-teams

- (1) The Financing Sub-team: The Financing Sub-team is using NT\$600 billion worth of project loans that are not specifically ear-marked for SMEs to implement Stage Four of the Plan for Strengthening the Provision of Loans to SMEs by Domestic Banks. It is anticipated that, by December 31, 2009, total outstanding loans to SMEs by domestic banks will have risen by a further NT\$300 billion. Additional support is being provided through the SME Credit Guarantee Fund "Golden Lever" plan, through a relaxation of the rules governing the handling of dishonored bills, and through the provision of loan rescheduling consultation service, etc. The contact window for the Financing Sub-team is the SME Troubleshooting Center (0800-056-476).
- (2) The Technology Sub-team: The Technology Sub-team is working in collaboration with the specialist teams of the existing business management, technology and information and R&D guidance systems to help business enterprises strengthen their quality

management, undertake innovation and R&D, upgrade their production technology, develop innovative designs, and implement e-enablement. The contact window for the Technology Sub-team is the Industries Assistance Center, Ministry of Economic Affairs (0800-000-257).

- (3) The Marketing Sub-team: The Marketing Sub-team helps SMEs to develop new marketing channels, including both overseas and domestic channels. The main emphasis in overseas marketing is on helping firms to strengthen their development of emerging markets (including the Chinese market), and to undertake international marketing of agricultural products; the sub-team also works to encourage foreign companies to undertake more purchasing in Taiwan, and helps Taiwanese enterprises to take advantage of global government procurement business opportunities. The emphasis on the domestic marketing side is on helping enterprises to strengthen the provision of guidance to other firms in the supply chain, organize marketing activities, and set up store establishment guidance service teams to provide a wide range of consulting and guidance services. The contact window for the Marketing Sub-team is the Ministry of Economic Affairs Export Services Team (0800-085-108).
- (4) Recruitment Sub-team: The Recruitment Sub-team works through the existing FindJob plan, the Short-term Employment Skill Promotion Plan and other relevant employment guidance measures to provide SMEs with assistance in employment- and recruitment-related areas. The contact window for the Recruitment Sub-team is the Employment Services Center, Bureau of Employment and Vocational Training, Council of Labor Affairs (0800-777-888).

4. Anticipated Results

It is anticipated that the Proactive Service for SMEs at the Local Level Plan will be implemented over a two-year period.

- (1) The anticipated results from the Proactive Service for SMEs at the Local Level Plan are that 120,000 firms will be reached through the consulting hotline, visits to individual firms, telephone interviews, and policy presentations.
- (2) Service coverage ratio: The service coverage ratio can be used as a performance indicator for the Proactive Service for SMEs at the Local Level Plan. The anticipated service coverage ratios are as follows:
 - a. Enterprises located in particular industrial districts, export processing zones, science parks, etc.: service coverage ratio (visits to firms) of 90%.
 - b. Enterprises belonging to particular industry associations, chambers of commerce, SME

associations, importer/exporter associations, young entrepreneur organizations etc.: service coverage ratio (telephone interviews) of 80%.

II Promoting Entrepreneurship – the Business Start-up Helmsman Plan

Entrepreneurship is the wellspring of economic growth. Faced with the current global economic downturn, it is important to encourage creativity, innovation and new business start-up, so as to revitalize social and economic activity and ensure continued stable economic development. In 2009, the SMEA began implementation of the Business Start-up Helmsman Plan, working through the SME Start-up and Innovation Service Centers in Northern, Central, Southern and Eastern Taiwan to build regional service networks and expand the Administration's ability to provide service at the local level. The Plan embodies three key strategies – improving the start-up incubation environment, developing start-up knowledge and information platforms, and helping entrepreneurs to obtain the funding they need to start their own business. The idea is to provide assistance to Taiwan's SMEs and micro-enterprises that is tailored to meet their real needs, so that they can get through the current period of financial and economic turbulence, while at the same time building Taiwan into an entrepreneurial society and revitalizing the economy. It is anticipated that, in 2009, guidance will be provided to 1,200 enterprises (including 400 innovation-oriented start-ups), thereby helping to protect 30,000 existing jobs, create 2,000 new jobs, and stimulate additional private-sector investment and capital increments to the tune of NT\$5 billion. The framework for the implementation of the Plan's three key strategies is outlined below:

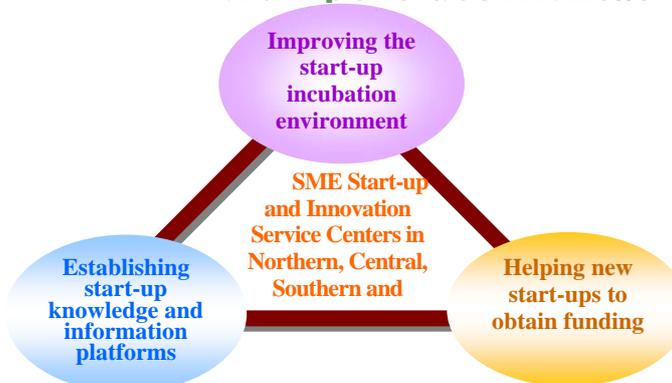
1. Improving the start-up incubation environment: Here, the emphasis is on supporting the healthy development of incubator centers, working to establish networks of specialist incubator centers, and establishing specialist incubator center manpower cultivation and certification systems.
2. Establishing start-up knowledge and information platforms: This will involve the establishment of databases of R&D results achieved by industry and by universities, business start-up competitions, provision of guidance for the commercialization of R&D results, start-up consulting and cultivation services, and individual guidance provision, etc.
3. Helping new start-ups to obtain the funding they need: The focus here is on helping entrepreneurs to obtain seed capital and venture-stage investment, as well as loans, R&D subsidies, etc.

The three strategies and the framework for their implementation are shown

schematically in Figure 15-2-1 below:

The Plan seeks to integrate the Small and Medium Enterprise Administration's existing guidance plans and start-up incubation networks. With its rich, wide-ranging content, the Plan will help to effectively link together the guidance mechanisms and value chains that the Administration has built up over the years with respect to SME innovation, R&D, start-up development and value creation, providing entrepreneurs with a comprehensive road-map, and using a combination of physical service locations and virtual networks to create a one-stop-shopping service environment.

Figure 15-2-1 The Business Start-up Helmsman Plan – Implementation Strategies and Implementation Framework



Source: Small and Medium Enterprise Administration, Ministry of Economic Affairs, 2009.

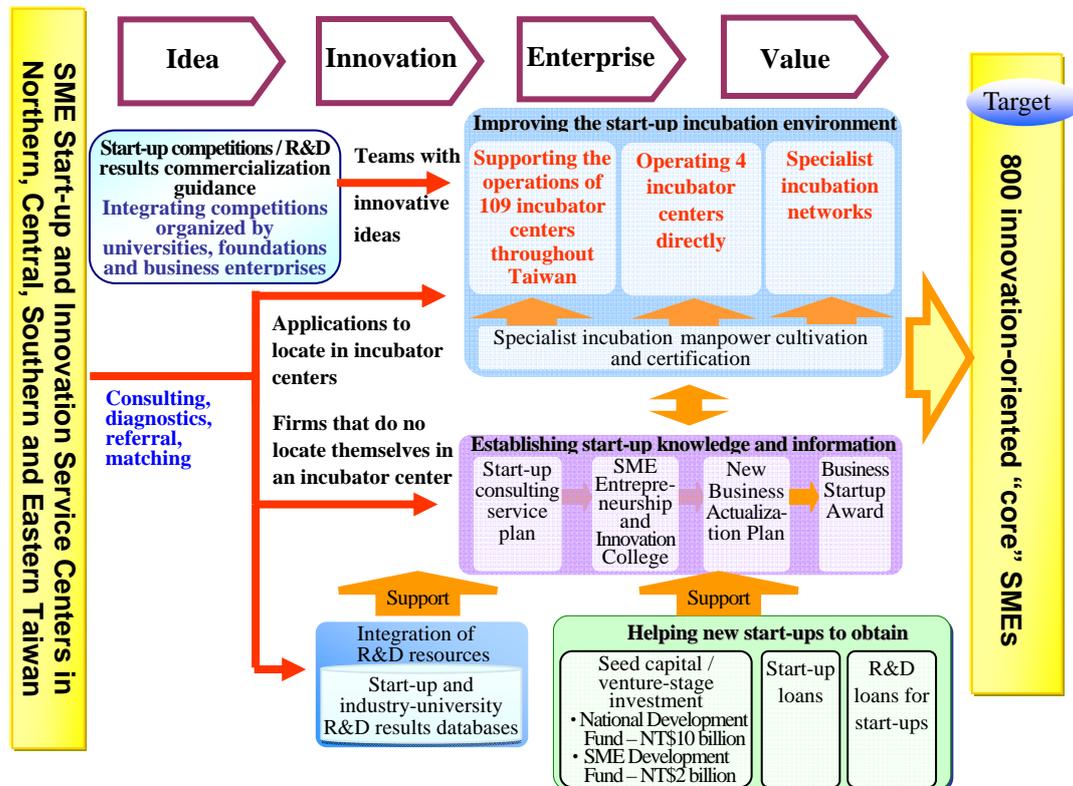
More specifically, the implementation of the plan includes the following:

1. The SME Start-up and Innovation Service Centers in Northern, Central, Southern and Eastern Taiwan

Starting in 2009, the SMEA has been working to coordinate the activities of private-sector foundations throughout Taiwan that have experience in the operation of incubator centers and in the provision of guidance to industry. The existing SME start-up and innovation service network has been reorganized with the establishment of physical regional service centers, so as to expand the resources and capabilities available for the provision of service at the local level and create a one-stop-shopping service environment. The individual regional service centers are located in the Nankang Software Incubator (Northern Region), the Central Science Park site of Fengchia University (Central Region), the Kaohsiung Software Incubator Center (Southern Region), and the Stone and Resource Industry R&D Center (Eastern Taiwan). The range of services provided by these centers includes:

- (1) Business start-up and innovation consulting services: Anyone who has any questions about new business start-up or innovation is welcome to contact their local regional service center by telephone, using the Internet, or in person; the center's customer service personnel and expert consultants will be happy to provide the services needed, in line with the needs of the inquiring party.

Figure 15-2-2 The 13 Sub-plans of the Business Start-up Helmsman Plan



Source: Small and Medium Enterprise Administration, Ministry of Economic Affairs, 2009.

- (2) Consultant clinic service: All of the regional service centers also provide consultant clinic service. Members of the public who visit their local center at a prearranged time can receive one-on-one consulting service.
- (3) On-site consulting service: In cases where in-depth diagnosis or consulting is required, the regional service centers can arrange for expert consultants to visit SMEs' premises to provide these services.
- (4) Business matching and resource integration: The regional service centers hold regular new product displays, business fairs and presentations, with the aim of stimulating the development of new business opportunities. The establishment of both intra-industry and cross-industry exchange platforms helps to promote business matching and increase the volume of market transactions. The service centers can also provide referrals, in line with the actual needs of individual businesses, so that they can access other resources available within the SME guidance system.

2. The New Business Start-up Competition and Commercialization Guidance Plan

In 2009, the SMEA initiated the New Business Start-up Competition and Commercialization Guidance Plan, with the aim of developing systematic guidance mechanisms for creativity, innovation and new business start-up. A careful selection process identifies individuals and teams with vision and potential to receive value-added guidance. The Administration also helps these individuals and teams to access venture capital funding, thereby contributing to the creation of new businesses with significant economic value. Service content includes:

- (1) Identification of outstanding new business projects: The Administration identifies teams and individuals that have performed particularly well in domestic competitions for creativity, innovation or new business establishment, and provides follow-up collaboration to help them add value to their businesses.
- (2) Providing commercialization guidance and other value-added activities for outstanding new business projects: This includes the provision of diagnostics and in-depth guidance for individual firms, assistance with business plan optimization, helping new businesses to locate themselves in an incubator center, and providing assistance with intellectual property rights analysis applications, etc.
- (3) Helping newly-established firms to secure funding: The Administration organizes special presentations to help new start-ups develop contacts with venture capital firms.

Anticipated implementation results for 2009 include the establishment of mechanisms for selecting outstanding entrepreneurial teams from start-up competitions. 300 teams will be selected, of which 100 will participate in collaboration with the goal of creating value, and 30 will be chosen to receive in-depth guidance, participate in presentations of the results achieved, and take part in business matching activities, along with other follow-up commercialization support and value-added services. It is anticipated that this work will lead to at least 50 new patents (or other intellectual property rights) and instances of technology transfer or referral, and will stimulate investment to the tune of NT\$10 million. Plan implementation will lead to the establishment of at least 15 new enterprises, of which at least 5 will be technology-oriented.

III Establishment of the Local Industry Development Fund

On July 30, 2008, the Executive Yuan convened a meeting to discuss matters related to the establishment of a Local Industry Development Fund. Eight key local industry development

objectives were decided on, and on August 22, 2008, the plan for the creation of the Local Industry Development Fund was approved. The *Regulations Governing Local Development Fund Receipts and Expenses* were promulgated on December 26, 2008, and the Local Industry Development Fund was formally established by the Ministry of Economic Affairs in 2009 with the allocation of NT\$1 billion from the national treasury.

1. The Goals behind the Establishment of the Local Industry Development Fund

The Local Industry Development Fund has been established to promote the development of regional economies, in line with the “One Product per Township” philosophy. Local government authorities are actively involved in both the planning and implementation of the Fund’s activities. The eight goals that the Fund was created to achieve are as follows:

- (1) To serve as a platform for the coordination of local industry development plans that are in receipt of funding from central government ministries and agencies.
- (2) To employ specialist teams to assist in local government planning and industry development activities.
- (3) To develop special local industries which have the potential to develop international markets.
- (4) To provide appropriate support for regions that have experienced high levels of out-migration, or where income levels are particularly low, so as to create new jobs and boost income levels.
- (5) To establish mini industrial parks in line with the needs of local industrial development, so as to help traditional industries and SMEs overcome the problems that they may experience in acquiring land for factory construction.
- (6) To support the provision of funding for the Young Entrepreneurs Plan, thereby ensuring that government resources are used effectively to support the establishment of new businesses by young entrepreneurs.
- (7) To assist in the development of industries that are closely linked with Taiwan’s Hakka community, providing funding and preferential loans as needed.
- (8) Other plans and work items related to local industry development.

2. Local Industry Development Fund Implementation Strategy

In the past, because of budgetary constraints, the implementation of local industry development projects by the Ministry of Economic Affairs has generally been carried out in

a top-down manner, in which the opportunities for meaningful participation by local government authorities were very limited. This made it difficult to meet the real needs of local industries. With the Local Industry Development Fund, which was established in 2009 through the allocation of NT\$1 billion in funding, a bottom-up approach will be used. Local government authorities will proactively draw up local industry development roadmaps and promotion plans, which will then be submitted to the central government for approval. In deciding which plans should receive funding support, the central government will give priority to job creation in areas that have suffered high levels of out-migration, or where income levels are particularly low.

With respect to those cities, townships and rural townships that suffer from limited resources or inadequate planning capabilities, the Local Industry Development Fund will be working through the Northern, Central, Southern and Eastern Taiwan service teams, using expert guidance teams to help with local industry guidance planning and implementation. The overall model is for local government authorities to decide on the key priorities for development, while the central government provides support through its guidance capabilities. It is anticipated that this model will help to open up a bright new future for Taiwan's local industries.

3. Planning the Operation of the Local Industry Development Fund

The planning for the Local Industry Development Fund involves specialist talent in various fields and the establishment of fund management committees by related government agencies. An advisory team will also be established, to review the applications submitted to the Local Industry Development Fund. Central government ministries and agencies will play a coordinating role, seeking to minimize the reduplication of effort and ensure that the Fund operates at maximum efficiency. It can be anticipated that, with clear objectives and comprehensive operational planning, the Local Industry Development Fund will be able to make a significant contribution towards helping local industries to stand on their own feet and achieve sustainable development, while at the same time creating new jobs and furthering the economic development of the nation as a whole.

IV The SME Credit Guarantee Fund's "Golden Lever" Project

In response to the current global economic downturn, in late 2008, the SMEA launched the SME Credit Guarantee Fund "Golden Lever" Project to help SMEs (which tend to suffer from a lack of resources) to obtain the working capital they need by making use of the SME

credit guarantee mechanism, in line with the government's policy of "the government supports the banks, the banks support business enterprises, and business enterprises support their employees." Under this scheme, SMEs that are unable to provide the collateral needed to obtain bank loans through normal channels can still secure funding support. In 2009, the SME Credit Guarantee Fund was granted a special budget appropriation of NT\$6 billion, following on from an allocation of NT\$1.5 billion to the Fund's reserves in 2008 (the funds in question being in place by January 2009), and agreements were signed whereby banks agreed to provide a further NT\$2 billion, for a combined total of NT\$9.5 billion. These funds will enable the SME Credit Guarantee Fund to continue to provide credit guarantees to SMEs, thereby making it easier for SMEs to obtain working capital. The specific measures included in the SME Credit Guarantee Fund "Golden Lever" Project are outlined below:

1. Providing Support for SMEs

(1) An Increase in the Maximum Amount of Credit Guarantees Available per Enterprise

- a. The SME Credit Guarantee Fund has introduced the Expanded Combined Credit Guarantee Limit, whereby the limit for self-compensating loan and capital expenditure loan credit guarantees has been increased by NT\$10 million.
- b. The limit for materials purchasing and working capital loan credit guarantees has been increased by NT\$5 million.
- c. The overall limit on credit guarantees per enterprise has been raised from NT\$100 million to NT\$120 million.
- d. The limit on credit guarantees for performance deposits and materials purchasing and working capital loans to help SMEs participate in government procurement has been increased by NT\$100 million, while the credit guarantee percentage has been raised to 90%.
- e. The limit on credit guarantees to capital expenditure on new factory establishment, factory expansion, and purchases of additional equipment etc. has been increased by NT\$100 million, while the credit guarantee percentage has been raised to 90%.

(2) A Relaxation of the Restrictions Governing Eligibility for Credit Guarantees

a. A Relaxation of the Loan / Revenue Ratio (Size of Loan / Annual Revenue)

- (a) The extension of existing credit guarantee agreements will no longer be affected by the loan ratio.
- (b) In the case of new applications, if the loan ratio is less than 100%, the restriction that

the credit guarantee percentage may not exceed 50% will no longer apply; where the loan ratio exceeds 100%, applications will be processed on a case-by-case basis.

b. A Relaxation of the Debt Ratio Requirement

With regard to extensions of existing credit guarantee agreements where the firm's debt ratio exceeds 400%, the original restriction that the credit guarantee percentage may not exceed 50% will no longer apply.

c. A Reduction in Credit Guarantee Handling Fees, to Reduce the Financial Burden on SMEs

With respect to 10 types of credit guarantees – including general credit guarantees, policy loan credit guarantees, and credit guarantees for loans for firms in knowledge-intensive industries, a fixed handling fee rate of 0.75% has been introduced. For other types of credit guarantee where the handling fee is currently less than 0.75%, the rate will remain at the current level. To reduce the burden on SMEs, during the period from May 14, 2009 to December 31, 2009, for those types of credit guarantee where the handling fee rate is currently higher than 0.5%, in cases where enterprises are awarded the credit guarantee through a financial institution or as part of a special project, the handling fee rate will be reduced to 0.5%.

2. Support for Financial Institutions

(1) Raising the Credit Guarantee Percentage

- a. To encourage banks to make more credit guarantee referrals, if the total size of loans awarded to SMEs by a bank using credit guarantees rises by over NT\$1 billion or at an annual growth rate of over 10%, the credit guarantee percentage will be adjusted as follows:
 - (a) In cases where a credit guarantee is awarded through a financial institution or as part of a special project, the credit guarantee percentage may be increased by up to 10% (to a maximum of 90%).
 - (b) In the case of batch-type credit guarantees, the subrogation rate may be increased by up to 30%; on April 1, 2009, the standard subrogation rate was raised from 2.2% to 2.8%. To stimulate the granting of loans to SMEs by financial institutions, during the period from May 14, 2009 to December 31, 2009, the standard subrogation rate will be temporarily increased to 3%, so that the effective subrogation rate may be raised to a maximum of 3.9%.
- b. To help revitalize the economy, with respect to 8 categories of credit guarantees –

including those for ordinary loans and policy loans – the credit guarantee percentage specified in the existing credit guarantee agreement will be increased by a further 10%, up to maximum of 90%.

(2) Speeding Up Credit Guarantee Subrogation

a. The Subrogated Payment Plan

In line with the government's policy of encouraging banks to support business enterprises, with respect to those financial institutions that have signed agreements with the SME Credit Guarantee Fund, in the case of applications for subrogated payment, part of the subrogation funds will be paid to the bank in advance to compensate for non-recoverable loans. This measure will help to improve banks' liquidity, thereby encouraging them to step up the provision of financing to SMEs.

- (a) Where a bank handling credit guarantee loans had a combined total of outstanding credit guarantees of NT\$1.5 billion or more as of the fourth quarter of 2008 (the base period), the bank may apply to the SME Credit Guarantee Fund for subrogated payment of 60% of this total. If, during any one quarter in 2009, the total amount of outstanding credit guarantees for a given bank rises by 20% or more or by NT\$300 million or more, the subrogated payment rate may be raised to 80%.
- (b) In the case of a financial institution handling credit guarantee loans that had a combined total of outstanding credit guarantees of less than NT\$1.5 billion, if the bank in question is willing to provide a written guarantee that it will raise the total outstanding credit guarantees by at least NT\$300 million in any given quarter in 2009, that bank may apply to the SME Credit Guarantee Fund for subrogated payment of 50% of this total. If, during any given quarter in 2009, the total in outstanding credit guarantees rises by 30% or more or by NT\$500 million or more, the subrogated payment rate may be raised to 70%.

b. Implementation of the 2009 Batch Agreement Subrogation Plan

In light of the fact that banks' non-performing loan (NPL) levels are currently very high, the 2009 Batch Agreement Subrogation Plan has been formulated to speed up the handling of subrogated payment applications and increase banks' willingness to handle SME credit guarantee loans.

- (a) The Plan applies to ordinary credit guarantee cases that have not yet been processed, where the bank in question applied to the SME Credit Guarantee Fund for subrogated payment prior to the end of February 2009.

(b) Starting from the month in which the bank submitted its application, a speeded-up subrogation shall be implemented according to the agreed subrogation rate for that month and on the basis of the monthly total of credit guarantees, at a 20:1 ratio.

c. Increased Efforts to Make Banks More Aware of the Operations of the SME Credit Guarantee Fund

The SME Credit Guarantee Fund will be organizing presentations to make bank managers and credit officers more aware of the recent measures adopted by the Fund to increase the provision of credit guarantees to SMEs, and of the various practical initiatives that have been implemented.

3. Results Achieved in the Implementation of the SME Credit Guarantee Fund's "Golden Lever" Project

Since implementation of the SME Credit Guarantee Fund "Golden Lever" Project began in late 2008, some impressive results have already been achieved. The main results achieved in terms of increased support for SMEs are outlined in Table 15-4-1 below:

Table 15-4-1 The Results Achieved in the Implementation of the SME Credit Guarantee Fund's "Golden Lever" Project (as of June 2009)

Measure	Results Achieved (as of June 2009)
1. Relaxation of the Upper Limit on Credit Guarantees	
Expanded combined credit guarantee limit	Since this measure was introduced in November 2008, a total of 13,141 credit guarantee cases have been handled, involving total credit guarantees of NT\$22,661 million, and helping SMEs to obtain a total of NT\$28,160 million in financing.
Expanded provision of credit guarantees for materials purchasing and working capital loans	Since this measure was introduced in 2007, a total of 3,721 credit guarantee cases have been handled, involving total credit guarantees of NT\$3,878 million, and helping SMEs to obtain a total of NT\$5,728 million in financing.
Increase in the overall credit guarantee limit per enterprise from NT\$100 million to NT\$120 million	Since this measure was introduced in November 2008, the raised limit has been applied in 8,819 cases, involving total credit guarantees of NT\$22,937 million, and helping SMEs to obtain a total of NT\$34,432 million in financing.
Helping SMEs to participate in government procurement	Since this measure was introduced in December 2008, a total of 138 credit guarantee cases have been handled, involving total credit guarantees of NT\$1,941 million, and helping SMEs to obtain a total of NT\$2,601 million in financing.
Helping SMEs to increase domestic investment	Since this measure was introduced in December 2008, a total of 3 credit guarantee cases have been handled, involving total credit guarantees of NT\$53 million, and helping SMEs to obtain a total of NT\$69 million in financing.
2. Relaxation of the Restrictions Governing Eligibility for Credit Guarantees	
Relaxation of loan / revenue ratio	Since this measure was introduced in January 2009, it has been applied in 3,222 cases, involving total credit guarantees of NT\$5.2 billion, and helping SMEs to obtain a total of NT\$7,132 million in financing.
Relaxation of the debt ratio requirement	Since this measure was introduced in January 2009, the relaxed debt ratio requirement has been applied in 3,674 cases, involving total credit guarantees of NT\$6,328 million, and helping SMEs to obtain a total of NT\$9,158 million in financing.
Reduced credit guarantee handling fee rates	Since this measure was introduced in January 2009, the new handling fee rates have been applied in 45,046 cases, involving total credit guarantees of NT\$84,871 million, and helping SMEs to obtain a total of NT\$121,336 million in financing.
3. Raising the credit guarantee percentage	Since this measure was introduced in November 2008, it has been applied in 19,620 cases, helping SMEs to obtain a total of NT\$41,754 million in financing.

Source: SME Credit Guarantee Fund.

Appendix



Appendix A

SME Development Statute

First promulgated by presidential order on February 4, 1991. Article 36-1 was added and Articles 2, 8, 13, 28, 30 and 32 were revised by presidential order on May 21, 1997. Articles 36 and 40 were revised by presidential order on January 21, 1998. Article 12-1 was added and Articles 3, 4, 11, 12, 13 and 40 were revised by presidential order on December 27, 2000. Article 9 was revised by presidential order on December 21, 2001. Article 13 and 32 was revised by presidential order on December 17, 2003.

Chapter One General Principles

Article 1

This Statute has been drawn up to help small and medium enterprises (SMEs) to improve their operational environment, promote mutual assistance and collaboration, and provide guidance so that SMEs can achieve growth through their own efforts, so as to promote the healthy development of SMEs. With regard to any matters not covered by this Statute, other relevant laws shall apply.

Article 2

For the purposes of this Statute, the term "SME" refers to an enterprise which has completed company or business registration and conforms to the requirements of the SME Definition Standards.

The SME Definition Standards referred to in the previous paragraph are drawn up by the regulatory authority at the central government level on the basis of business type, capitalization, annual sales revenue, number of regular employees etc., and are submitted to the Executive Yuan for review on a regular basis.

Where other agencies are engaged in providing guidance for SMEs, they may draw up different standards in accordance with their own operational needs, so as make guidance available to a broader range of enterprises.

Article 3

For the purposes of this Statute, the term "regulatory authority" shall refer to the Ministry of Economic Affairs at the central government level, to the municipal government at the level of the municipality, and to the county or city government at the level of the county or city.

Where any matters covered by this Statute are related to the responsibilities of the regulatory authority for a given industry, the regulatory authority for SMEs shall handle the matter in consultation with the regulatory authority for the industry in question.

With respect to the implementation of this Statute, all levels of government shall establish or appoint an agency to provide guidance.

Article 4

In order to achieve the objectives of this statute, the regulatory authority shall adopt suitable guidance or incentive measures with respect to the matters noted below:

1. Market surveys and market development.
2. Promotion of management rationalization.
3. Promotion of collaboration.
4. Securing and maintaining production factors and technology.
5. Cultivation of talent.
6. Other matters relating to the establishment and healthy development of SMEs.

Where the regulatory authority formulates policies, legislation or measures related to the matters noted above, while endeavoring to promote the improvement and development of small-scale enterprises, there should be no unfair treatment in terms of finance, taxation or other areas.

The regulatory authority at the central government level shall issue a White Paper on Small and Medium Enterprises in Taiwan before the end of each year, with respect to the implementation of the matters noted in the previous two paragraphs, the reviewing of results and future prospects. This White Paper shall cover all resources available to SMEs.

Article 5

In order to provide guidance with respect to SME surveys and market development, the regulatory authority shall emphasize the provision of guidance and assistance in the areas of information service provision for SMEs, the establishment of own brands, development of marketing channels and market development.

Article 6

In order to promote the rationalization of SME management, the regulatory authority shall emphasize the provision of guidance in the following areas:

1. Research and development, and the development of new products.

2. Replacement of equipment and improvement of production technology.
3. Improvement of management methods.
4. Market development and the securing of information.
5. Industry transformation and adjustment.
6. Obtaining of production factors and technology.

Article 7

In order to promote mutual assistance and collaboration between SMEs, the regulatory authority shall emphasize the provision of guidance in the following areas:

1. The establishment and promotion of vertical integration and of the center-satellite system.
2. The establishment and promotion of horizontal integration and the joint production and sales system.
3. Mutual assistance funds and collaborative ventures.
4. Collaboration in the area of technology and the joint development of technology.
5. Purchase and installation of shared equipment.
6. Establishment of marketing nodes.

Article 8

In order to help SMEs to obtain and maintain production factors and technology, the regulatory authority shall emphasize the provision of guidance in the following areas:

1. Capital formation and accumulation.
2. Financing.
3. The obtaining of land, plant buildings, equipment, places of business and information.
4. The cultivation of talent and upgrading of manpower.
5. Maintaining the supply of raw materials and technology.
6. Providing SMEs with guidance in how to obtain financing from the capital markets.
7. Upgrading the level of service techniques.

Article 9

The regulatory authority shall establish a SME Development Fund. The scope for which the Fund may be used shall be as follows:

1. The funds required for supporting guidance projects.
2. Arranging financing and guarantees through financial institutions for project financing, emergency loans and loans required for enterprise transformation and adjustment.

This applies only in cases where financing or guarantees cannot be obtained on normal terms from financial institutions or guarantee institutions.

3. Investing in SME development companies, or investing jointly in SMEs through SME development companies, financial institutions or approved investment institutions.
4. Providing financial assistance to institutions or corporate persons established in order to handle the matters noted in Article 4.
5. Other uses related to the promotion of the healthy development of SMEs or the provisions of this Statute.

With respect to the receipts and expenses, custody and use of the SME Development Fund, a SME Development Fund Management Committee should be established. The organization of the Management Committee and the regulations governing SME Development Fund receipts and expenses, custody and use shall be drawn up by the Executive Yuan.

Article 10

The sources of funding for the SME Development Fund shall be as follows:

1. The budget appropriation allocated by the central government each year.
2. Appropriations from other special funds.
3. Donations from state-owned or private enterprises and individuals.
4. The interest earned on the Fund.
5. Other income.

Provided that supporting evidence can be provided by the regulatory authority, the donations referred to in Item 3 above shall be deducted from taxable income for that year in accordance with the provisions of the Income Tax Law, with no upper limit.

Article 11

The regulatory authority at the level of the municipality, county or city (hereinafter referred to as "the local regulatory authority") may formulate guidance plans and allocate a budget for their implementation in line with the needs of SME development.

In order to promote the implementation of guidance projects of the type referred to in the preceding paragraph, the local regulatory authority may apply to the SME Development Fund for financial assistance, or it may assist the SMEs in question to obtain project financing themselves.

Article 12

Where the regulatory authority provides guidance in accordance with the provisions of this Statute, they may undertake such work in collaboration with public or private research institutions, financial institutions, credit guarantee institutions, trade promotion institutions, commercial associations and other agencies or organizations, or may commission such agencies or organizations to perform work on their behalf. The regulatory authority may also establish guidance systems with respect to finance and financing, operational management, production technology, research and development, information management, industrial safety, pollution prevention, marketing, mutual assistance and collaboration, and quality upgrading.

The regulations governing the establishment of and provision of guidance by the guidance systems referred to in the previous paragraph shall be drawn up by the regulatory authority at the central government level, and shall be submitted to the Executive Yuan for approval.

Article 12-1

When drawing up or revising laws and regulations relating to SMEs, all levels of government shall take into consideration the scale of operation and special characteristics of SMEs, to make it easier for SMEs to abide by the laws and regulations in question.

The regulatory authority at the central government level shall conduct periodic review of all laws and regulations relating to SMEs. It shall evaluate SMEs' ability to adapt to these laws and regulations, and their impact on SMEs. The regulatory authority shall submit a report to the Legislative Yuan within three months of the end of each year.

Chapter Two Financing and Guarantees

Article 13

In order to help SMEs to secure financing, the regulatory authority at the central government level shall coordinate the activities of financial institutions and credit guarantee institutions to strengthen the provision of financing and guarantees to SMEs.

To ensure that the SME credit guarantee institutions have sufficient funds available, the regulatory authorities at the central government level should allocate budget appropriations for these institutions, so that they can maintain the ability to provide credit guarantees. Financial institutions that have signed agreements with the SME credit guarantee institutions should also provide donations, and the regulatory authorities are authorized to ask for voluntary donations from other business enterprises.

The total amount of donations to be allocated by financial institutions may be increased by up to 35% of the total amount of donations each year. The regulatory authority at the central government level shall determine the amount of credit to be allocated to enterprises, the net value, profit status and amount already donated in accordance with the amount of funds submitted, the non-performing loan rate and the subrogation amount.

The regulatory authority at the central government level shall proactively help SMEs to secure bank loans, and shall report the annual results in this area to the Legislative Yuan.

Article 14

All banks in Taiwan shall, within the scope of their business operation, increase the percentage of financing granted to SMEs. They shall establish a SME guidance center to improve the provision of service to SMEs.

Article 15

The regulatory authorities shall coordinate the activities of relevant agencies to increase the amount of project loans made available to SMEs. Lead banks will be asked to provide project financing, emergency loans and loans required for enterprise transformation and adjustment. Where necessary, the size of loans and guarantees may be increased.

Article 16

The "project financing" referred to in the previous article refers to financing provided to enable SMEs to undertake the following:

1. Business plans to enhance competitiveness.
2. R&D, pollution prevention and market development plans.
3. Product innovation and quality upgrading plans.
4. Plans for the moving of a factor to a new site in line with the needs of environmental protection, urban planning, road construction or other public construction administered by the government.
5. Other projects approved by the regulatory authority.

Article 17

The "emergency loans" referred to in Article 15 refers to the provision of the following types of financing to SMEs:

1. Where a major economic upheaval makes it necessary to adjust production and sales.
2. Where a SME needs to undertake reconstruction following a serious natural disaster.

3. Other emergency loans.

Article 18

The "loans required for enterprise transformation and adjustment" referred to in Article 15 refer to the provision of the following types of financing to SMEs:

1. Where an economic downturn makes it necessary to adjust production and sales.
2. Where the industry to which a SME belongs is going through a period of transformation, and the SME needs to replace existing equipment or purchase additional equipment.
3. Where a SME needs to purchase automation equipment to increase productivity.

Article 19

Where financial institutions or credit guarantee institutions provide loans or guarantees of the types referred to in the previous three articles, the SME Development Fund may allocate funds for the loan or guarantee. The percentage of funds to be provided by the SME Development Fund shall be determined by the regulatory authority in line with actual needs.

Except in the case of non-performing loans resulting from deliberate or gross negligence or malpractice, the handling personnel for the loans or guarantees referred to in the previous paragraph shall, in accordance with the provisions of Paragraph 1, Article 77 of the Auditing Law, be exempted from all liability for loss and all punishment.

Article 20

In the case of SMEs which have sound management, finances and accounting systems and which have paid their taxes in full in accordance with the requirements of the law, the regulatory authority may coordinate the activities of relevant financial institutions and credit guarantee institutions to give such SMEs priority in the provision of financing and guarantees.

Article 21

Where a SME's operations are affected or it is required to move its premises because of collaboration with the needs of environmental protection, urban planning, road construction or other public construction administered by the government, the regulatory authority shall assist the SME in question in securing a working capital loan or removal loan. Where necessary, the regulatory authority shall help the SME to secure land for plant establishment.

Article 22

Where a SME suffers serious loss because of a natural disaster, the regulatory authority shall consult with the relevant financial agency to arrange for tax reduction or exemption or other

assistance.

Article 23

In order to prevent SMEs from going out of business because another enterprise with which they do business has gone out of business, the regulatory authority may provide coordination or guidance to industry associations to help them establish or jointly establish mutual assistance and guarantee funds to prevent SMEs from going out of business. These funds may provide credit guarantees to help SMEs which are experiencing difficulties to secure financing.

In the case of newly-established mutual assistance and guarantee funds, the SME Development Fund may provide them with financial assistance.

Chapter Three Operational Management, Market and Product Development

Article 24

The regulatory authority may establish, or provide guidance for private organizations to establish, SME guidance service centers. These centers may work in collaboration with other relevant public and private agencies to provide the following guidance services to SMEs:

1. Enterprise management diagnosis.
2. Guidance with respect to the improvement of SME sales, production technology, management and financial structure.
3. Training for SME managers or technical personnel.
4. Production and sales information and consulting service.
5. Other relevant services.

Article 25

In order to improve the operational efficiency of SMEs and enhance their competitiveness, the regulatory authority may provide guidance to SMEs on how to undertake joint production, marketing, purchasing and transportation, and how to collaborate on R&D and the development of new technology, etc.

Article 26

The regulatory authority at the central government level may collaborate with other relevant agencies, universities and colleges to cultivate management diagnosis and enterprise management talent, so as to be able to provide guidance services to SMEs.

Article 27

Where industry associations and chambers of commerce have established dedicated service agencies to provide services to SMEs which are their members, the regulatory authority may provide assistance to such agencies.

Article 28

In order to encourage SMEs to manufacture high-level products and high added value products and services, and to develop export markets, the regulatory authority shall consult with other relevant agencies to provide technical and marketing guidance, and shall help SMEs to attend overseas exhibitions, obtain market information, undertake joint advertising, register trademarks, apply for patents, and jointly establish distribution warehouses overseas.

In the case of plans for manufacturing high-level products and high added value products and services as referred to in the previous paragraph, after the plan has been appraised and approved by the regulatory authority in consultation with other relevant agencies, the SME in question may apply to the SME Development Fund for financial assistance with product and market development expenses.

Article 29

In order to provide SMEs with guidance as to how to raise their production technology level, the regulatory authority may commission technology institutions or recruit experts to provide guidance and services with respect to the development of new products and adoption of new technology in different industries.

The regulatory authority may charge a fee for the transfer of new products or new technology. Where necessary, the SME Development Fund may provide financial assistance.

Article 30

In order to help SMEs to undertake research and development, the regulatory authority may collaborate with suitable technology research institutions to establish an institution or facility for providing SMEs with research, testing, and technology, product or service development.

SMEs may pay a fee to make use of the facilities of the institutions or facilities referred to in the previous paragraph for testing or research.

Article 31

Where necessary, the regulatory authority may arrange with state-owned or private enterprises for the latter to assign technical personnel to provide support to the guidance system, so as to provide SMEs with the production technology or service technique guidance

which they require.

Article 32

The regulatory authority at the central government level may establish or provide guidance for the establishment of SME development companies to invest, either directly or indirectly, in SMEs with growth potential, and to provide consulting services in the areas of domestic or foreign technology collaboration, market and product development and investment, and other relevant services.

The regulatory authority at the central government level shall provide assistance to institutions and corporate persons established in order to provide the services specified in Article 4.

The regulatory authority at the central government level may coordinate its activities with those of the regulatory authority for the Banking Act at the central government level to approve the involvement of banks in SME development companies for the provisions of the services referred to above.

The SME Development Fund may invest in SME development companies.

The regulations governing the establishment, operation and management of SME development companies, and the standards and percentages relating to investment in SME development companies by the SME Development Fund, shall be determined by the Executive Yuan.

Chapter Four Tax Reductions and Exemptions

Article 33

Where an investor invests in a SME through the provision of land in an industrial district, provided that the agreement of the SME in question is obtained, the shares of the SME in question may be used as collateral for tax payment. The land value increment tax payable by the investor may be averaged out over a period of five years commencing in the year in which the investment was made.

The land referred to in the previous paragraph must be used by the SME in question itself. If the land is not used by the SME in question, or if it is transferred, the unpaid land value increment tax must be paid in lump sum by the investor.

Article 34

If for one of the reasons noted below a SME moves its premises to an industrial district, urban planning industrial district, or industrial land zoned in accordance with the Statute for

Encouraging Investment prior to the implementation of this Statute, when the SME sells or transfers the land where it was originally located, the land value increment tax payable shall be paid at the lowest rate:

1. Where, in the case of land on which a factory is located, the implementation or urban planning or regional planning means that the land in question can no longer be used for factory operation.
2. Where, because of difficulty in conforming to the needs of pollution prevention, public safety or maintenance of the natural environment, an SME applies to be permitted to relocate, and this relocation is approved by the regulatory authority.
3. Where the government recommends that a SME relocate.

Where a SME relocates in accordance with the above stipulations, if the land on which the SME's factory is located is transferred to a new owner within three years after the relocation, the SME will be required to pay the additional land value increment tax on the land which was sold off or transferred at the time of relocation.

Article 35

Where a SME pays R&D or experimentation fees in order to improve its production technology or develop new products, the SME may deduct such expenses from its taxable income for that year. In the case of instruments and equipment used for R&D, experimentation or quality inspection, if the lifespan is two years or longer, then when calculating depreciation the number of years noted on the Income Tax Law Fixed Asset Lifespan Table may be reduced by half. If this reduces the depreciation period to less than one year, depreciation need not be calculated.

Article 36

SMEs may retain earnings up to the value of their paid-in capital without being required to distribute them. If retained earnings in excess of this amount are not distributed, additional business income tax shall be charged at the rate of 10%, and the restrictions of the Income Tax Law shall not apply.

In accordance with the provisions of the Income Tax Law, the provisions of the preceding paragraph shall not apply to retained earnings for 1998 and years subsequent to that year.

Article 36-1

Where a SME development company invests in a SME which has been in existence for less than five years, the SME development company may, with the approval of the regulatory

authority for the financial sector at the central government level, make an allocation to the investment loss reserve of up to 20% of the value of the investment, to be used in making up actual losses. If no actual loss occurs within five years of the allocation being made, the money allocated should be treated as earnings in the fifth year.

If, following a company's dissolution, liquidation, abolition, merger or transfer it becomes necessary to calculate income from liquidation in accordance with the provisions of Article 75 of the Income Tax Law, where there is an accumulated balance in the investment loss reserve referred to in the previous paragraph, this should be treated as earnings in the current year.

Chapter Five Public Purchasing and Public Construction

Article 37

Where government at any level or a state-owned enterprise undertakes publicly-announced procurement or public construction, they shall assist SMEs to obtain the business opportunities created by this.

Article 38

Where government at any level or a state-owned enterprise undertakes publicly-announced procurement, public construction or commissioning of R&D work, they shall, depending on actual needs, establish a system for qualification and registration of SMEs wishing to serve as suppliers or to bid for a tender.

Chapter Six Additional Provisions

Article 39

In order to review SME development policy, the Executive Yuan may establish a SME Policy Review Committee. The Articles of Organization shall be drawn up by the Executive Yuan.

Article 40

This Statute shall come into effect on the date of its promulgation.

Appendix B

Standards for Identifying Small and Medium Enterprises

Approved by Executive Yuan Order Tai (80) Jing #33054 on October 19, 1991. Promulgated by Ministry of Economic Affairs Order Jing (80) Chi Tzu #059364 on November 25, 1991. Revision approved by Executive Yuan Order Tai (84) Jing #32284 on September 4, 1995. Revision promulgated by Ministry of Economic Affairs Order Jing (84) Chi Tzu #84029087 on September 27, 1995. Revision approved by Executive Yuan Order Tai (89) Jing #10056 on April 8, 2000. Revision promulgated by Ministry of Economic Affairs Order Jing (89) Chi Tzu #89340202 on May 3, 2000. Revision approved by Executive Yuan Order Yuan Tai Jing #0940022741 on June 14, 2005. Revision promulgated by Ministry of Economic Affairs Order Jing Chi Tzu #09400561550 on July 5, 2005. Revision approved by Executive Yuan Order Yuan Tai Jing #0980048943 on August 17, 2009. Revision promulgated by Ministry of Economic Affairs Order Jing Chi Tzu #09800639470 on September 2, 2009.

Article 1

The Standards have been drawn up in accordance with the provisions of Paragraph 2, Article 2 of the Small and Medium-sized Enterprise Development Statute (hereinafter referred to as the " Statute").

Article 2

The term "SME" as used in the Standards shall mean an enterprise which has completed company registration or business registration in accordance with the requirements of the laws, and which conforms to the following standards:

1. The enterprise is an enterprise in the manufacturing, construction, mining or quarrying industry with paid-in capital of NT\$80 million or less.
2. The enterprise is an enterprise in the industry other than any of those mentioned in the Sub-paragraph immediately above and had its sales revenue of NT\$100 million or less in the previous year.

For the purpose of business guidance, each of the government agencies may, in relation to such specific business matters, base their standards for identifying a SME on the number of regular employees as noted below, in which case the restrictions noted in the previous Paragraph shall not apply:

1. The enterprise is an enterprise in the manufacturing, construction, mining or quarrying

industry and the number of its regular employees is less than 200.

2. The enterprise is an enterprise in the industry other than any of those mentioned in the Sub-paragraph immediately above and the number of its regular employees is less than 100.

Article 3

The term "small-scale enterprise" as used in Paragraph 2, Article 4 of the Statute shall mean a SME with less than 5 regular employees.

Article 4

The term "sales revenue" as used in the Standards shall be determined based on the figure as approved by the tax authorities in the year immediately prior to the year of determination. If the approval has not been given by the tax authorities, the determination shall be made in accordance with the following provisions:

1. Sales revenue shall be based on the operating revenue noted on the income tax declaration form for the most recent year bearing the "Documents Received" seal of the tax authorities.
2. If the enterprise is unable to obtain the document referred to in the Sub-paragraph immediately above, Sales revenue shall be based on the sales value noted on the sales and tax declaration form for the full year of the most recent year, with commissioned sales and non-operating income deducted.
3. In the case of sale representatives required to pay business tax by the tax authorities according to the laws, sales revenue shall be presumed to be NT\$80 million or less.

If the enterprise was established in the previous year and less than one year has elapsed since business registration, or if business registration took place in the current year, sales revenue for the full year shall be calculated on the basis of the conversion from the figure already declared for each period.

Article 5

The "number of regular employee" as used in the Standards shall be based on the average monthly number of insured persons for whom labor insurance registration has been made with the Labor Insurance agency for the Taiwan and Fukien Region in the most recent 12 months.

Article 6

An enterprises shall be deemed to be a SME if any of the following is applicable:

1. In the case of a SME which has received guidance for expansion, where after expansion the size of the enterprise exceeds the standards listed in Article 2, such enterprise shall continue to be deemed to be a SME for two years immediately after the date of expansion.
2. In the case of a SME which has received guidance for merger, where after the merger the size of the enterprise exceeds the standards listed in Article 2, such enterprise shall continue to be deemed to be a SME for three years immediately after the date of the merger.
3. Where a guidance agency, guidance system or relevant agency undertakes the provision of collective guidance for SMEs in a given industry, if some of the enterprises exceed the standards listed in Article 2, and if the guidance agency, guidance system or relevant agency determines that there is good reason for providing joint guidance, such enterprises shall be deemed to be SMEs during the period of collective guidance.

Article 7

These Standards shall come into effect on the date of promulgation.

Appendix C

SME Statistics by Industry

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Table C-1 Number of Enterprises by Industry, 2007 - 2008

Units: Number of enterprises; %

Industry	Size	Total		SMEs		Large enterprises	
		Total	Share	SMEs	Share	enterprises	Share
Total	2007	1,266,664	100.00	1,237,270	97.68	29,394	2.32
	2008	1,263,846	100.00	1,234,749	97.70	29,097	2.30
Agriculture, Forestry, Fishing and Animal Husbandry	2007	10,816	100.00	10,784	99.70	32	0.30
	2008	11,004	100.00	10,974	99.73	30	0.27
Mining and Quarrying	2007	1,509	100.00	1,485	98.41	24	1.59
	2008	1,479	100.00	1,455	98.38	24	1.62
Manufacturing	2007	137,961	100.00	133,312	96.63	4,649	3.37
	2008	136,568	100.00	131,829	96.53	4,739	3.47
Electricity and Gas Supply	2007	368	100.00	248	67.39	120	32.61
	2008	388	100.00	266	68.56	122	31.44
Water Supply and Remediation Services	2007	6,625	100.00	6,342	95.73	283	4.27
	2008	6,985	100.00	6,691	95.79	294	4.21
Construction	2007	92,426	100.00	91,150	98.62	1,276	1.38
	2008	93,508	100.00	92,272	98.68	1,236	1.32
Wholesale and Retail Trade	2007	670,031	100.00	654,091	97.62	15,940	2.38
	2008	664,222	100.00	648,376	97.61	15,846	2.39
Transportation and Storage	2007	31,802	100.00	30,807	96.87	995	3.13
	2008	31,563	100.00	30,586	96.90	977	3.10
Accommodation and Food Services	2007	109,052	100.00	108,801	99.77	251	0.23
	2008	110,435	100.00	110,182	99.77	253	0.23

Table C-1 Number of Enterprises by Industry, 2007 - 2008 (continued)

Units: Number of enterprises; %

Industry	Size	Total		SMEs		Large enterprises	
		Number	Share	Number	Share	Number	Share
Information and Communication	2007	15,948	100.00	15,282	95.82	666	4.18
	2008	15,906	100.00	15,253	95.89	653	4.11
Finance and Insurance	2007	16,364	100.00	13,597	83.09	2,767	16.91
	2008	16,227	100.00	13,646	84.09	2,581	15.91
Real Estate	2007	19,870	100.00	18,683	94.03	1,187	5.97
	2008	20,799	100.00	19,638	94.42	1,161	5.58
Professional, Scientific and Technical Services	2007	35,834	100.00	35,191	98.21	643	1.79
	2008	35,908	100.00	35,301	98.31	607	1.69
Support Services	2007	26,491	100.00	26,211	98.94	280	1.06
	2008	27,110	100.00	26,822	98.94	288	1.06
Education	2007	514	100.00	508	98.83	6	1.17
	2008	667	100.00	662	99.25	5	0.75
Human Health and Social Work Services	2007	310	100.00	304	98.06	6	1.94
	2008	329	100.00	323	98.18	6	1.82
Arts, Entertainment and Recreation	2007	23,203	100.00	23,108	99.59	95	0.41
	2008	23,055	100.00	22,955	99.57	100	0.43
Other Services	2007	67,540	100.00	67,366	99.74	174	0.26
	2008	67,693	100.00	67,518	99.74	175	0.26

Note: 1. The industries are classified according to the 8th revision of Industry Classification Standard.

2. Data of Lienchiang County, a small offshore island, are included in the calculation of all figures.

Source: Ministry of Finance Tax Data Center, VAT data, 2007 and 2008.

Table C-2 Enterprise Size and Sales Value by Industry, 2007 - 2008

Units: NT millions; %

Industry	Size	Total		SMEs		Large enterprises	
		Total	Share	Total	Share	Total	Share
Total	2007	35,886,186	100.00	10,481,910	29.21	25,404,276	70.79
	2008	35,239,137	100.00	10,462,696	29.69	24,776,441	70.31
Agriculture, Forestry, Fishing and Animal Husbandry	2007	31,648	100.00	15,587	49.25	16,062	50.75
	2008	30,574	100.00	16,284	53.26	14,290	46.74
Mining and Quarrying	2007	53,058	100.00	44,446	83.77	8,612	16.23
	2008	53,342	100.00	43,907	82.31	9,435	17.69
Manufacturing	2007	13,327,698	100.00	4,024,135	30.19	9,303,562	69.81
	2008	13,267,949	100.00	4,000,466	30.15	9,267,483	69.85
Electricity and Gas Supply	2007	591,154	100.00	3,354	0.57	587,800	99.43
	2008	655,982	100.00	3,763	0.57	652,219	99.43
Water Supply and Remediation Services	2007	163,806	100.00	52,687	32.16	111,119	67.84
	2008	167,426	100.00	53,898	32.19	113,529	67.81
Construction	2007	1,791,864	100.00	1,120,687	62.54	671,178	37.46
	2008	1,870,473	100.00	1,139,154	60.90	731,319	39.10
Wholesale and Retail Trade	2007	12,613,353	100.00	3,906,720	30.97	8,706,633	69.03
	2008	12,385,623	100.00	3,885,387	31.37	8,500,236	68.63
Transportation and Storage	2007	989,690	100.00	243,675	24.62	746,015	75.38
	2008	1,003,499	100.00	245,586	24.47	757,913	75.53
Accommodation and Food Services	2007	321,276	100.00	226,581	70.53	94,695	29.47
	2008	327,241	100.00	235,287	71.90	91,954	28.10

Table C-2 Enterprise Size and Sales Value by Industry, 2007 - 2008
(continued)

Units: NT millions; %

Industry	Size	Total		SMEs		Large enterprises	
		Total	Share	SMEs	Share	Large enterprises	Share
Information and Communication	2007	774,345	100.00	93,927	12.13	680,418	87.87
	2008	780,113	100.00	94,771	12.15	685,342	87.85
Finance and Insurance	2007	3,380,015	100.00	184,428	5.46	3,195,587	94.54
	2008	2,839,933	100.00	176,238	6.21	2,663,695	93.79
Real Estate	2007	774,671	100.00	148,186	19.13	626,485	80.87
	2008	798,123	100.00	147,218	18.45	650,905	81.55
Professional, Scientific and Technical Services	2007	590,300	100.00	169,642	28.74	420,658	71.26
	2008	570,004	100.00	170,083	29.84	399,921	70.16
Support Services	2007	240,586	100.00	103,855	43.17	136,731	56.83
	2008	241,561	100.00	106,387	44.04	135,174	55.96
Education	2007	4,305	100.00	2,577	59.86	1,728	40.14
	2008	5,175	100.00	3,410	65.89	1,765	34.11
Human Health and Social Work Services	2007	2,729	100.00	1,461	53.53	1,268	46.47
	2008	2,849	100.00	1,561	54.79	1,288	45.21
Arts, Entertainment and Recreation	2007	71,525	100.00	43,410	60.69	28,115	39.31
	2008	71,371	100.00	42,741	59.89	28,630	40.11
Other Services	2007	164,162	100.00	96,552	58.82	67,610	41.18
	2008	167,899	100.00	96,555	57.51	71,344	42.49

Note: 1. The industries are classified according to the 8th revision of Industry Classification Standard.

2. Data of Lienchiang County, a small offshore island, are included in the calculation of all figures.

Source: Ministry of Finance Tax Data Center, VAT data, 2007 and 2008.

Table C-3 Domestic Sales Value by Industry, 2007 - 2008

Units: NT millions; %

Industry	Size	Total		SMEs		Large enterprises	
		Total	Share	SMEs	Share	enterprises	Share
Total	2007	26,277,862	100.00	8,842,983	33.65	17,434,879	66.35
	2008	25,762,915	100.00	8,817,989	34.23	16,944,927	65.77
Agriculture, Forestry, Fishing and Animal Husbandry	2007	28,402	100.00	13,711	48.28	14,691	51.72
	2008	27,187	100.00	14,407	52.99	12,780	47.01
Mining and Quarrying	2007	52,263	100.00	44,067	84.32	8,196	15.68
	2008	52,674	100.00	43,613	82.80	9,061	17.20
Manufacturing	2007	7,074,196	100.00	2,873,824	40.62	4,200,372	59.38
	2008	7,040,619	100.00	2,835,244	40.27	4,205,374	59.73
Electricity and Gas Supply	2007	577,154	100.00	3,297	0.57	573,857	99.43
	2008	640,473	100.00	3,666	0.57	636,807	99.43
Water Supply and Remediation Services	2007	155,255	100.00	51,239	33.00	104,017	67.00
	2008	160,513	100.00	51,772	32.25	108,742	67.75
Construction	2007	1,763,161	100.00	1,107,703	62.82	655,458	37.18
	2008	1,831,773	100.00	1,126,498	61.50	705,275	38.50
Wholesale and Retail Trade	2007	9,855,285	100.00	3,457,108	35.08	6,398,177	64.92
	2008	9,717,270	100.00	3,446,768	35.47	6,270,502	64.53
Transportation and Storage	2007	654,868	100.00	236,403	36.10	418,465	63.90
	2008	698,547	100.00	236,540	33.86	462,008	66.14
Accommodation and Food Services	2007	318,729	100.00	226,075	70.93	92,654	29.07
	2008	325,483	100.00	235,152	72.25	90,331	27.75

Table C-3 Domestic Sales Value by Industry, 2007 - 2008 (continued)

Units: NT millions; %

Industry	Size	Total		SMEs		Large enterprises	
		Total	Share	SMEs	Share	enterprises	Share
Information and Communication	2007	687,217	100.00	87,580	12.74	599,638	87.26
	2008	692,135	100.00	88,584	12.80	603,551	87.20
Finance and Insurance	2007	3,377,713	100.00	183,720	5.44	3,193,993	94.56
	2008	2,836,069	100.00	175,663	6.19	2,660,406	93.81
Real Estate	2007	771,388	100.00	147,901	19.17	623,487	80.83
	2008	793,730	100.00	146,860	18.50	646,871	81.50
Professional, Scientific and Technical Services	2007	494,767	100.00	163,804	33.11	330,963	66.89
	2008	474,061	100.00	164,207	34.64	309,854	65.36
Support Services	2007	232,084	100.00	102,950	44.36	129,134	55.64
	2008	235,661	100.00	105,330	44.70	130,331	55.30
Education	2007	4,219	100.00	2,577	61.08	1,642	38.92
	2008	5,049	100.00	3,394	67.22	1,655	32.78
Human Health and Social Work Services	2007	2,667	100.00	1,428	53.53	1,239	46.47
	2008	2,693	100.00	1,540	57.20	1,152	42.80
Arts, Entertainment and Recreation	2007	71,347	100.00	43,312	60.71	28,036	39.29
	2008	71,176	100.00	42,640	59.91	28,536	40.09
Other Services	2007	157,147	100.00	96,285	61.27	60,862	38.73
	2008	157,802	100.00	96,110	60.91	61,692	39.09

Note: 1. The industries are classified according to the 8th revision of Industry Classification Standard.

2. Data of Lienchiang County, a small offshore island, are included in the calculation of all figures.

Source: Ministry of Finance Tax Data Center, VAT data, 2007 and 2008.

Table C-4 Export Sales Value by Industry, 2007 - 2008

Units: NT millions; %

Industry	Size	Total		SMEs		Large enterprises	
		Total	Share	SMEs	Share	enterprises	Share
Total	2007	9,608,324	100.00	1,638,927	17.06	7,969,397	82.94
	2008	9,476,222	100.00	1,644,707	17.36	7,831,515	82.64
Agriculture, Forestry, Fishing and Animal Husbandry	2007	3,247	100.00	1,876	57.77	1,371	42.23
	2008	3,387	100.00	1,876	55.39	1,511	44.61
Mining and Quarrying	2007	796	100.00	379	47.69	416	52.31
	2008	668	100.00	294	44.03	374	55.97
Manufacturing	2007	6,253,502	100.00	1,150,311	18.39	5,103,191	81.61
	2008	6,227,331	100.00	1,165,222	18.71	5,062,109	81.29
Electricity and Gas Supply	2007	14,000	100.00	57	0.41	13,944	99.59
	2008	15,509	100.00	97	0.63	15,412	99.37
Water Supply and Remediation Services	2007	8,551	100.00	1,449	16.94	7,103	83.06
	2008	6,913	100.00	2,126	30.75	4,787	69.25
Construction	2007	28,703	100.00	12,983	45.23	15,720	54.77
	2008	38,700	100.00	12,656	32.70	26,044	67.30
Wholesale and Retail Trade	2007	2,758,068	100.00	449,612	16.30	2,308,456	83.70
	2008	2,668,353	100.00	438,619	16.44	2,229,734	83.56
Transportation and Storage	2007	334,822	100.00	7,271	2.17	327,550	97.83
	2008	304,951	100.00	9,046	2.97	295,905	97.03
Accommodation and Food Services	2007	2,547	100.00	506	19.88	2,041	80.12
	2008	1,758	100.00	135	7.69	1,623	92.31

Table C-4 Export Sales Value by Industry, 2007 - 2008 (continued)

Units: NT millions; %

Industry	Size	Total		SMEs		Large enterprises	
		Total	Share	SMEs	Share	enterprises	Share
Information and Communication	2007	87,128	100.00	6,347	7.29	80,780	92.71
	2008	87,979	100.00	6,187	7.03	81,791	92.97
Finance and Insurance	2007	2,301	100.00	708	30.76	1,593	69.24
	2008	3,864	100.00	575	14.88	3,290	85.12
Real Estate	2007	3,283	100.00	285	8.67	2,998	91.33
	2008	4,393	100.00	358	8.16	4,034	91.84
Professional, Scientific and Technical Services	2007	95,533	100.00	5,839	6.11	89,695	93.89
	2008	95,943	100.00	5,876	6.12	90,067	93.88
Support Services	2007	8,503	100.00	906	10.65	7,597	89.35
	2008	5,901	100.00	1,057	17.92	4,843	82.08
Education	2007	86	100.00	0	0.41	86	99.59
	2008	125	100.00	16	12.37	110	87.63
Human Health and Social Work Services	2007	62	100.00	33	53.44	29	46.56
	2008	157	100.00	21	13.31	136	86.69
Arts, Entertainment and Recreation	2007	177	100.00	98	55.30	79	44.70
	2008	195	100.00	101	51.77	94	48.23
Other Services	2007	7,015	100.00	267	3.81	6,748	96.19
	2008	10,096	100.00	445	4.41	9,651	95.59

Note: 1. The industries are classified according to the 8th revision of Industry Classification Standard.

2. Data of Lienchiang County, a small offshore island, are included in the calculation of all figures.

Source: Ministry of Finance Tax Data Center, VAT data, 2007 and 2008.

Table C-5 Total Employment by Industry, 2007 - 2008

Units: Thousand persons; %

Industry	Size	Total		SMEs		Large enterprises		Government	
		Total	Share	SMEs	Share	Large enterprises	Share	Government	Share
Total	2007	10,294	100.00	7,939	77.12	1,424	13.83	932	9.05
	2008	10,403	100.00	7,966	76.58	1,479	14.22	958	9.21
Agriculture, Forestry, Fishing and Animal Husbandry	2007	543	100.00	538	98.99	2	0.30	4	0.71
	2008	535	100.00	529	98.82	1	0.25	5	0.93
Mining and Quarrying	2007	6	100.00	5	82.40	0	0.42	1	17.18
	2008	6	100.00	5	85.62	0	0.39	1	14.00
Manufacturing	2007	2,842	100.00	2,180	76.69	634	22.30	29	1.01
	2008	2,886	100.00	2,191	75.93	666	23.07	29	1.00
Electricity and Gas Supply	2007	28	100.00	3	9.81	3	9.85	23	80.34
	2008	28	100.00	2	7.54	3	12.34	22	80.12
Water Supply and Remediation Services	2007	65	100.00	23	34.43	2	2.54	41	63.03
	2008	71	100.00	28	39.62	2	2.91	41	57.47
Construction	2007	846	100.00	827	97.75	9	1.05	10	1.21
	2008	842	100.00	823	97.73	10	1.14	10	1.13
Wholesale and Retail Trade	2007	1,782	100.00	1,667	93.54	105	5.90	10	0.56
	2008	1,770	100.00	1,652	93.31	109	6.18	9	0.51
Transportation and Storage	2007	415	100.00	281	67.61	80	19.27	55	13.13
	2008	414	100.00	275	66.46	85	20.59	54	12.95
Accommodation and Food Services	2007	681	100.00	653	95.96	27	3.97	0	0.07
	2008	687	100.00	659	95.95	28	4.01	0	0.05

Table C-5 Total Employment by Industry, 2007 - 2008 (continued)

Units: Thousand persons; %

Industry	Size	Total		SMEs		Large enterprises		Government	
		Total	Share	SMEs	Share	Large enterprises	Share	Government	Share
Information and Communication	2007	206	100.00	116	56.20	90	43.43	1	0.37
	2008	203	100.00	119	58.68	83	40.98	1	0.34
Finance and Insurance	2007	404	100.00	223	55.20	166	41.17	15	3.63
	2008	411	100.00	228	55.50	169	41.09	14	3.41
Real Estate	2007	74	100.00	66	89.63	6	8.33	2	2.03
	2008	74	100.00	68	92.02	5	6.16	1	1.82
Professional, Scientific and Technical Services	2007	301	100.00	232	77.05	41	13.61	28	9.35
	2008	317	100.00	238	75.16	49	15.38	30	9.45
Support Services	2007	215	100.00	182	84.57	32	14.75	1	0.67
	2008	231	100.00	194	84.10	36	15.42	1	0.47
Public Administration and Defence; Compulsory Social Security	2007	332	100.00	0	0.00	0	0.00	332	100.00
	2008	343	100.00	0	0.00	0	0.00	343	100.00
Education	2007	588	100.00	210	35.63	85	14.42	294	49.95
	2008	605	100.00	208	34.47	86	14.27	310	51.26
Human Health and Social Work Services	2007	340	100.00	147	43.10	119	35.14	74	21.77
	2008	355	100.00	157	44.15	124	34.99	74	20.86
Arts, Entertainment and Recreation	2007	101	100.00	79	78.67	11	10.59	11	10.73
	2008	98	100.00	76	77.96	10	10.57	11	11.47
Other Services	2007	523	100.00	507	97.11	12	2.39	3	0.50
	2008	528	100.00	513	97.13	13	2.39	3	0.48

Note: 1. The industries are classified according to the 8th revision of Industry Classification Standard.

2. Data of Lienchiang County, a small offshore island, are included in the calculation of all figures.

Source: Ministry of Finance Tax Data Center, VAT data, 2007 and 2008.

Table C-6 Number of Paid Employees by Industry, 2007 - 2008

Units: Thousand persons; %

Industry	Size	Total		SMEs		Large enterprises		Government	
		Total	Share	SMEs	Share	Large enterprises	Share	Government	Share
Total	2007	7,735	100.00	5,383	69.60	1,420	18.36	932	12.04
	2008	7,902	100.00	5,469	69.21	1,475	18.67	958	12.12
Agriculture, Forestry, Fishing and Animal Husbandry	2007	73	100.00	68	92.52	2	2.23	4	5.25
	2008	81	100.00	75	92.20	1	1.64	5	6.16
Mining and Quarrying	2007	6	100.00	5	81.03	0	0.45	1	18.52
	2008	5	100.00	4	84.24	0	0.42	1	15.34
Manufacturing	2007	2,554	100.00	1,893	74.10	633	24.78	29	1.12
	2008	2,600	100.00	1,907	73.34	664	25.55	29	1.11
Electricity and Gas Supply	2007	28	100.00	3	9.35	3	9.90	23	80.75
	2008	28	100.00	2	7.47	3	12.35	22	80.18
Water Supply and Remediation Services	2007	59	100.00	16	27.77	2	2.79	41	69.44
	2008	65	100.00	22	34.37	2	3.16	41	62.47
Construction	2007	709	100.00	690	97.32	9	1.25	10	1.44
	2008	705	100.00	686	97.30	10	1.35	10	1.35
Wholesale and Retail Trade	2007	984	100.00	869	88.36	105	10.63	10	1.01
	2008	997	100.00	879	88.19	109	10.91	9	0.90
Transportation and Storage	2007	311	100.00	177	56.87	80	25.61	55	17.52
	2008	314	100.00	175	55.88	85	27.04	54	17.08
Accommodation and Food Services	2007	366	100.00	339	92.55	27	7.32	0	0.13
	2008	381	100.00	353	92.71	27	7.21	0	0.08

Table C-6 Number of Paid Employees by Industry, 2007 - 2008 (continued)

Units: Thousand persons; %

Industry	Size	Total		SMEs		Large enterprises		Government	
		Total	Share	SMEs	Share	Large enterprises	Share	Government	Share
Information and Communication	2007	193	100.00	102	53.18	89	46.42	1	0.40
	2008	192	100.00	108	56.32	83	43.33	1	0.36
Finance and Insurance	2007	401	100.00	220	54.82	166	41.52	15	3.66
	2008	407	100.00	224	55.08	169	41.48	14	3.44
Real Estate	2007	63	100.00	56	88.13	6	9.49	2	2.38
	2008	65	100.00	59	90.91	5	7.00	1	2.09
Professional, Scientific and Technical Services	2007	222	100.00	153	69.01	41	18.34	28	12.65
	2008	241	100.00	162	67.39	49	20.18	30	12.43
Support Services	2007	190	100.00	157	82.73	31	16.50	1	0.76
	2008	208	100.00	171	82.51	35	16.96	1	0.53
Public Administration and Defence; Compulsory Social Security	2007	332	100.00	0	0.00	0	0.00	332	100.00
	2008	343	100.00	0	0.00	0	0.00	343	100.00
Education	2007	551	100.00	173	31.42	84	15.30	294	53.28
	2008	567	100.00	171	30.15	86	15.21	310	54.63
Human Health and Social Work Services	2007	304	100.00	110	36.30	119	39.32	74	24.38
	2008	319	100.00	121	37.98	124	38.85	74	23.17
Arts, Entertainment and Recreation	2007	77	100.00	56	72.11	11	13.85	11	14.03
	2008	75	100.00	54	71.44	10	13.60	11	14.96
Other Services	2007	311	100.00	296	95.15	12	4.01	3	0.84
	2008	309	100.00	294	95.11	13	4.08	3	0.81

Note: 1. The industries are classified according to the 8th revision of Industry Classification Standard.

2. Data of Lienchiang County, a small offshore island, are included in the calculation of all figures.

Source: Ministry of Finance Tax Data Center, VAT data, 2007 and 2008.

Table C-7 Overview of Newly-established SMEs in 2008 – by Industry

Units: Number of enterprises; NT millions; %

Industry	Size	Total		SMEs		Large enterprises	
		Total	Share	Total	Share	Total	Share
Total	Number of enterprises	86,563	100.00	86,325	99.73	238	0.27
	Sales value	264,780	100.00	176,941	66.83	87,839	33.17
	Domestic value	216,250	100.00	165,219	76.40	51,031	23.60
	Export value	48,530	100.00	11,722	24.15	36,808	75.85
Agriculture, Forestry, Fishing and Animal Husbandry	Number of enterprises	340	100.00	340	100.00	0	0.00
	Sales value	311	100.00	311	100.00	0	0.00
	Domestic value	309	100.00	309	100.00	0	0.00
	Export value	1	100.00	1	100.00	0	0.00
Mining and Quarrying	Number of enterprises	108	100.00	108	100.00	0	0.00
	Sales value	347	100.00	347	100.00	0	0.00
	Domestic value	347	100.00	347	100.00	0	0.00
	Export value	0	100.00	0	0.00	0	0.00
Manufacturing	Number of enterprises	4,041	100.00	3,982	98.54	59	1.46
	Sales value	33,174	100.00	18,958	57.15	14,217	42.85
	Domestic value	19,026	100.00	15,817	83.13	3,209	16.87
	Export value	14,148	100.00	3,141	22.20	11,008	77.80
Electricity and Gas Supply	Number of enterprises	18	100.00	18	100.00	0	0.00
	Sales value	22	100.00	22	100.00	0	0.00
	Domestic value	22	100.00	22	100.00	0	0.00
	Export value	0	100.00	0	0.00	0	0.00
Water Supply and Remediation Services	Number of enterprises	718	100.00	717	99.86	1	0.14
	Sales value	2,033	100.00	1,802	88.66	231	11.34
	Domestic value	2,024	100.00	1,793	88.61	231	11.39
	Export value	9	100.00	9	100.00	0	0.00
Construction	Number of enterprises	7,472	100.00	7,467	99.93	5	0.07
	Sales value	21,777	100.00	21,771	99.97	7	0.03
	Domestic value	21,644	100.00	21,638	99.97	7	0.03
	Export value	133	100.00	133	100.00	0	0.00
Wholesale and Retail Trade	Number of enterprises	41,049	100.00	40,918	99.68	131	0.32
	Sales value	153,647	100.00	93,919	61.13	59,728	38.87
	Domestic value	122,083	100.00	85,936	70.39	36,147	29.61
	Export value	31,564	100.00	7,983	25.29	23,581	74.71
Transportation and Storage	Number of enterprises	1,137	100.00	1,132	99.56	5	0.44
	Sales value	4,477	100.00	2,992	66.85	1,484	33.15
	Domestic value	3,387	100.00	2,916	86.09	471	13.91
	Export value	1,090	100.00	77	7.03	1,013	92.97
Accommodation and Food Services	Number of enterprises	13,663	100.00	13,661	99.99	2	0.01
	Sales value	13,891	100.00	13,607	97.96	283	2.04
	Domestic value	13,891	100.00	13,607	97.96	283	2.04
	Export value	0	100.00	0	0.00	0	0.00

Table C-7 Overview of Newly-established SMEs in 2008 – by Industry (continued)

Units: Number of enterprises; NT millions; %

Industry	Size	Total	SMEs		Large enterprises		
			Share	Share	Share	Share	
Information and Communication	Number of enterprises	1,432	100.00	1,429	99.79	3	0.21
	Sales value	3,672	100.00	3,003	81.80	668	18.20
	Domestic value	3,434	100.00	2,803	81.63	631	18.37
	Export value	238	100.00	200	84.22	38	15.78
Finance and Insurance	Number of enterprises	842	100.00	824	97.86	18	2.14
	Sales value	10,902	100.00	3,411	31.28	7,492	68.72
	Domestic value	10,892	100.00	3,400	31.22	7,492	68.78
	Export value	10	100.00	10	100.00	0	0.00
Real Estate	Number of enterprises	2,243	100.00	2,234	99.60	9	0.40
	Sales value	6,689	100.00	4,471	66.84	2,218	33.16
	Domestic value	5,854	100.00	4,470	76.35	1,384	23.65
	Export value	835	100.00	1	0.16	834	99.84
Professional, Scientific and Technical Services	Number of enterprises	2,978	100.00	2,975	99.90	3	0.10
	Sales value	5,175	100.00	4,540	87.72	636	12.28
	Domestic value	5,022	100.00	4,387	87.34	636	12.66
	Export value	153	100.00	153	100.00	0	0.00
Support Services	Number of enterprises	2,472	100.00	2,471	99.96	1	0.04
	Sales value	3,252	100.00	2,585	79.51	666	20.49
	Domestic value	2,911	100.00	2,579	88.59	332	11.41
	Export value	341	100.00	7	2.02	334	97.98
Education	Number of enterprises	168	100.00	168	100.00	0	0.00
	Sales value	263	100.00	263	100.00	0	0.00
	Domestic value	263	100.00	263	100.00	0	0.00
	Export value	0	100.00	0	0.00	0	0.00
Human Health and Social Work Services	Number of enterprises	44	100.00	44	100.00	0	0.00
	Sales value	61	100.00	61	100.00	0	0.00
	Domestic value	61	100.00	61	100.00	0	0.00
	Export value	0	100.00	0	0.00	0	0.00
Arts, Entertainment and Recreation	Number of enterprises	3,065	100.00	3,064	99.97	1	0.03
	Sales value	2,353	100.00	2,144	91.11	209	8.89
	Domestic value	2,352	100.00	2,143	91.11	209	8.89
	Export value	1	100.00	1	100.00	0	0.00
Other Services	Number of enterprises	4,773	100.00	4,773	100.00	0	0.00
	Sales value	2,734	100.00	2,734	100.00	0	0.00
	Domestic value	2,728	100.00	2,728	100.00	0	0.00
	Export value	6	100.00	6	100.00	0	0.00

Note: 1. The industries are classified according to the 8th revision of Industry Classification Standard.

2. Data of Lienchiang County, a small offshore island, are included in the calculation of all figures.

Source: Ministry of Finance Tax Data Center, VAT data, 2007 and 2008.

Table C-8 Female Owned Enterprises in 2008 – Number of Enterprises and Sales Value by Industry

Units: NT\$ millions; %

Industry/Size		Number of Enterprises			Sales Value		
		Total	Women owned Enterprises	Women owned Enterprises' Share	Total	Women owned Enterprises	Women owned Enterprises' Share
Total	Total	1,255,619	444,805	35.43	32,197,930	4,412,148	13.70
	SMEs	1,228,285	439,852	35.81	10,187,150	2,321,344	22.79
	Large enterprises	27,334	4,953	18.12	22,010,781	2,090,804	9.50
Agriculture, Forestry, Fishing and Animal Husbandry	SMEs	10,956	2,442	22.29	16,246	3,570	21.98
	Large enterprises	30	6	20.00	14,290	1,942	13.59
Mining and Quarrying	SMEs	1,454	356	24.48	43,716	7,726	17.67
	Large enterprises	24	0	0.00	9,435	0	0.00
Manufacturing	SMEs	131,296	34,357	26.17	3,843,099	549,355	14.29
	Large enterprises	4,437	394	8.88	8,293,328	215,145	2.59
Electricity and Gas Supply	SMEs	259	55	21.24	3,675	509	13.86
	Large enterprises	120	13	10.83	647,404	38,850	6.00
Water Supply and Remediation Services	SMEs	6,674	2,026	30.36	53,565	15,615	29.15
	Large enterprises	287	62	21.60	111,282	18,124	16.29
Construction	SMEs	92,097	22,856	24.82	1,114,125	255,285	22.91
	Large enterprises	1,188	232	19.53	682,039	87,619	12.85
Wholesale and Retail Trade	SMEs	644,576	241,101	37.40	3,816,450	1,112,782	29.16
	Large enterprises	14,844	3,178	21.41	7,251,021	1,188,153	16.39
Transportation and Storage	SMEs	30,436	7,365	24.20	243,340	65,092	26.75
	Large enterprises	908	151	16.63	634,625	77,197	12.16
Accommodation and Food Services	SMEs	109,693	53,382	48.66	231,155	83,179	35.98
	Large enterprises	241	45	18.67	79,857	13,262	16.61

Table C-8 Female Owned Enterprises in 2008 – Number of Enterprises and Sales Value by Industry (continued)

Units: NT\$ millions; %

Industry/Size \ Item		Number of Enterprises			Sales Value		
		Total	Women owned Enterprises	Women owned Enterprises' Share	Total	Women owned Enterprises	Women owned Enterprises' Share
Information and Communication	SMEs	14,968	4,478	29.92	90,258	24,715	27.38
	Large enterprises	584	91	15.58	631,092	53,716	8.51
Finance and Insurance	SMEs	13,412	4,120	30.72	172,721	36,410	21.08
	Large enterprises	2,482	373	15.03	2,531,512	225,583	8.91
Real Estate	SMEs	19,561	5,642	28.84	146,303	36,956	25.26
	Large enterprises	1,141	238	20.86	620,839	108,187	17.43
Professional, Scientific and Technical Services	SMEs	34,856	12,146	34.85	164,655	49,145	29.85
	Large enterprises	511	95	18.59	300,207	42,203	14.06
Support Services	SMEs	26,738	10,302	38.53	104,819	34,147	32.58
	Large enterprises	265	46	17.36	114,509	12,837	11.21
Education	SMEs	655	225	34.35	3,403	821	24.12
	Large enterprises	5	0	0.00	1,765	0	0.00
Human Health and Social Work Services	SMEs	319	112	35.11	1,476	546	37.04
	Large enterprises	6	1	16.67	1,288	133	10.31
Arts, Entertainment and Recreation	SMEs	22,921	7,817	34.10	42,442	11,258	26.53
	Large enterprises	95	15	15.79	27,781	3,176	11.43
Other Services	SMEs	67,414	31,070	46.09	95,702	34,232	35.77
	Large enterprises	166	13	7.83	58,508	4,679	8.00

Note: The figure in total do not include those enterprises that owners are legal persons or foreigners for which gender cannot be identified.

Source: Ministry of Finance Tax Data Center, VAT tax data, 2007 and 2008.

Table C-9 Female Owned Enterprises in 2008 – Domestic Sales Value and Export Sales Value by Industry

Units: NT\$ millions; %

Industry/Size \ Item		Domestic Sales			Export Sales		
		Total	Women owned Enterprises	Women owned Enterprises' Share	Total	Women owned Enterprises	Women owned Enterprises' Share
Total	Total	24,068,099	3,673,718	15.26	8,129,831	738,430	9.08
	SMEs	8,655,511	2,071,307	23.93	1,531,638	250,037	16.32
	Large enterprises	15,412,588	1,602,411	10.40	6,598,193	488,394	7.40
Agriculture, Forestry, Fishing and Animal Husbandry	SMEs	14,370	3,077	21.41	1,876	493	26.30
	Large enterprises	12,780	1,800	14.09	1,511	142	9.41
Mining and Quarrying	SMEs	43,580	7,678	17.62	136	48	35.56
	Large enterprises	9,061	0	0.00	374	0	0.00
Manufacturing	SMEs	2,773,616	444,382	16.02	1,069,483	104,972	9.82
	Large enterprises	3,961,962	136,269	3.44	4,331,367	78,876	1.82
Electricity and Gas Supply	SMEs	3,615	509	14.09	60	0	0.00
	Large enterprises	634,851	38,850	6.12	12,553	0	0.00
Water Supply and Remediation Services	SMEs	51,540	14,990	29.08	2,025	625	30.85
	Large enterprises	106,643	17,554	16.46	4,638	570	12.29
Construction	SMEs	1,103,957	252,640	22.88	10,168	2,645	26.01
	Large enterprises	657,321	87,299	13.28	24,718	319	1.29
Wholesale and Retail Trade	SMEs	3,390,396	977,367	28.83	426,054	135,415	31.78
	Large enterprises	5,416,507	808,238	14.92	1,834,513	379,915	20.71
Transportation and Storage	SMEs	234,954	63,152	26.88	8,386	1,940	23.13
	Large enterprises	404,044	61,896	15.32	230,580	15,301	6.64
Accommodation and Food Services	SMEs	231,020	83,160	36.00	135	19	14.30
	Large enterprises	78,241	11,691	14.94	1,616	1,571	97.24

Table C-9 Female Owned Enterprises in 2008 – Domestic Sales Value and Export Sales Value by Industry (continued)

Units: NT\$ millions; %

Industry/Size	Item	Domestic Sales			Export Sales		
		Total	Women owned Enterprises	Women owned Enterprises' Share	Total	Women owned Enterprises	Women owned Enterprises' Share
Information and Communication	SMEs	84,645	23,357	27.59	5,613	1,357	24.18
	Large enterprises	554,706	44,278	7.98	76,386	9,438	12.36
Finance and Insurance	SMEs	172,169	36,060	20.94	552	351	63.46
	Large enterprises	2,528,510	225,520	8.92	3,001	63	2.09
Real Estate	SMEs	145,945	36,821	25.23	358	134	37.48
	Large enterprises	617,649	107,143	17.35	3,190	1,043	32.70
Professional, Scientific and Technical Services	SMEs	159,340	47,520	29.82	5,315	1,624	30.56
	Large enterprises	231,119	41,353	17.89	69,088	850	1.23
Support Services	SMEs	103,892	33,822	32.56	927	325	35.09
	Large enterprises	111,038	12,676	11.42	3,471	161	4.65
Education	SMEs	3,388	806	23.80	16	15	93.63
	Large enterprises	1,655	0	0.00	110	0	0.00
Human Health and Social Work Services	SMEs	1,455	546	37.57	21	0	0.00
	Large enterprises	1,152	130	11.29	136	3	1.98
Arts, Entertainment and Recreation	SMEs	42,341	11,241	26.55	101	18	17.52
	Large enterprises	27,687	3,085	11.14	94	91	96.48
Other Services	SMEs	95,290	34,177	35.87	413	55	13.36
	Large enterprises	57,661	4,628	8.03	847	51	6.00

Note: The figure in total do not include those enterprises that owners are legal persons or foreigners for which gender cannot be identified.

Source: Ministry of Finance Tax Data Center, VAT tax data, 2007 and 2008.

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