
Air Pollution Control Equipment in Taiwan: A Strategic Reference, 2002



Edited by

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1 INTRODUCTION & METHODOLOGY

1.1 WHAT DOES THIS REPORT COVER?

The primary audience for this report is managers involved with the highest levels of the strategic planning process and consultants who help their clients with this task. The user will not only benefit from the hundreds of hours that went into the methodology and its application, but also from its alternative perspective on strategic planning relating to air pollution control equipment in Taiwan.

As the editor of this report, I am drawing on a methodology developed at INSEAD, an international business school (www.insead.edu). For any given industry or sector, including air pollution control equipment, the methodology decomposes a country's strategic potential along four key dimensions: (1) latent demand, (2) micro-accessibility, (3) proxy operating pro-forma financials, and (4) macro-accessibility. A country may have very high latent demand, yet have low accessibility, making it a less attractive market than many smaller potential countries having higher levels of accessibility.

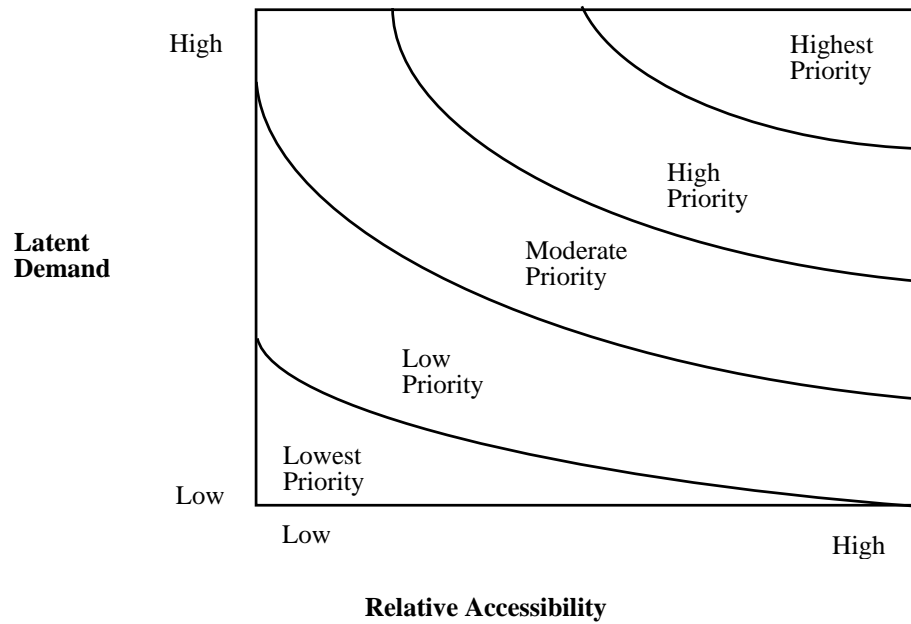
With this perspective, this report provides both a micro and a macro strategic profile of air pollution control equipment in Taiwan. It does so by compiling published information that directly relates to latent demand and accessibility, either at the micro or macro level. The reader new to Taiwan can quickly understand where Taiwan fits into a firm's strategic perspective. In Chapter 2, the report investigates latent demand and micro-accessibility for air pollution control equipment in Taiwan. In Chapters 3 and 4, the report covers proxy operating pro-forma financials and macro-accessibility in Taiwan. Macro-accessibility is a general evaluation of investment and business conditions in Taiwan.

1.2 HOW TO STRATEGICALLY EVALUATE TAIWAN

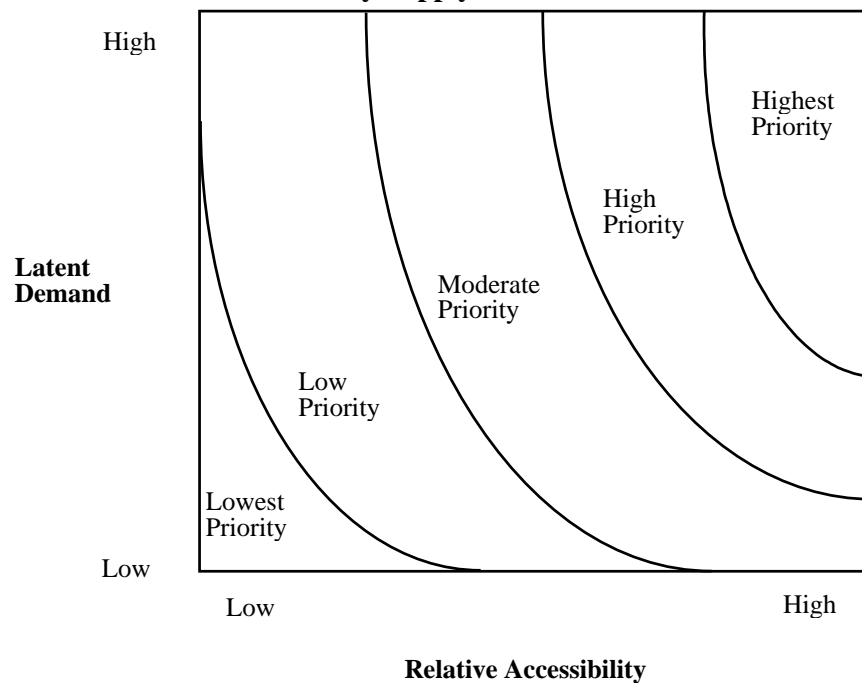
Perhaps the most efficient way of evaluating Taiwan is to consider key dimensions which themselves are composites of multiple factors. Composite portfolio approaches have long been used by strategic planners. The biggest challenge in this approach is to choose the appropriate factors that are the most relevant to international planning. The two measures of greatest relevance to air pollution control equipment are "latent demand" and "market accessibility". The figure below summarizes the key dimensions and recommendations of such an approach. Using these two composites, one can prioritize all countries of the world. Countries of high latent demand and high relative accessibility (e.g. easier entry for one firm compared to other firms) are given highest priority. The figure below shows two different scenarios. Accessibility is defined as a firm's ease of entering or supplying from or to a market (the "supply side"), and latent demand is an indicator of the potential in serving from or to the market (the "demand side").

Framework for Prioritizing Countries

Demand/Market Potential Driven Firm



Accessibility/Supply Averse Firm



In the top figure, the firm is driven by market potential, whereas the bottom figure represents a firm that is driven by costs or by an aversion to difficult markets. This report treats the reader as coming from a “generic firm” approaching the global market – neither a market-driven nor a cost-driven company. Planners must therefore augment this report with their own company-specific factors that might change the priorities (e.g. a Canadian firm may have higher accessibility in Canada than a German firm).

1.3 LATENT DEMAND AND ACCESSIBILITY IN TAIWAN

This report provides a detailed overview of factors driving latent demand and accessibility for air pollution control equipment in Taiwan. Latent demand is largely driven by economic fundamentals specific to air pollution control equipment. This topic is discussed in Chapter 2 using work carried out in Taiwan on behalf of American firms and authored by the United States government (typically commercial attachés or similar persons in local offices of the U.S. Department of State). I have included a number of edits to clarify the information provided. Latent demand only represents half of the picture. Chapter 2 also deals with micro-accessibility for air pollution control equipment in Taiwan. I use the term “micro” since the discussion is focused specifically on air pollution control equipment.

Chapter 3 is also a stand-alone report that I have authored. It covers proxy pro-forma financial indicators of firms operating in Taiwan. I use the word “proxy” because the provided figures only cover a “what if” scenario, based on actual operating results for firms in Taiwan. The numbers are only indicative of an average firm whose primary activity is in Taiwan. It covers a vertical analysis of the maximum likelihood balance sheet, income statement, and financial ratios of firms operating in Taiwan. It does so for a particular Standard Industrial Classification (SIC) code. That code covers “air and water resource and solid waste management”, as defined in Chapter 3. Again, while “air and water resource and solid waste management” does not exactly equate to “air pollution control equipment”, it nevertheless gives an indicator of how Taiwan compares to other countries for a proxy adjacent category along various dimensions.

Chapter 4 deals with macro-accessibility and covers factors that go beyond air pollution control equipment. A country may at first sight appear to be attractive due to a high latent demand, but it is often less attractive when one considers at the macro level how easy it might be to serve that entire potential and/or general business risks. While accessibility will always vary from one company to another for a given country, the following domains are typically considered when evaluating macro-accessibility in Taiwan:

- Openness to Trade in Taiwan
- Openness to Direct Investment in Taiwan
- Local Marketing and Entry Strategy Alternatives
- Local Human Resources

- Local Risks

Across these domains, a number of not-so-obvious factors can affect accessibility and risk. These are covered in the Chapter 4, which is a general overview of investment and business conditions in Taiwan. Chapter 4 is also presented from the perspective of an American firm, though is equally applicable to most firms entering Taiwan. This chapter is also authored by local offices of the U.S. government, as is Chapter 2. Likewise, I have included a number of edits to clarify the provided information as it relates to the general strategic framework mentioned earlier.

2 AIR POLLUTION CONTROL EQUIPMENT IN TAIWAN

2.1 LATENT DEMAND AND ACCESSIBILITY: BACKGROUND

The long-term prevention, control and monitoring of air pollution is Taiwan's top environmental priority. As a result, there are many opportunities for American companies manufacturing products and equipment in these fields. Small and medium-sized businesses were generally bypassed during initial air quality and emissions crackdowns during the early to mid 1990s. Current and future enforcement efforts will be aimed specifically at these enterprises, resulting in the need for cost-effective technology and small-scale equipment capable of reducing SO_x, NO_x and PM₁₀ emissions. Despite the economic downturn affecting Taiwan's economy, the tender of numerous large air quality improvement projects will continue to drive demand for foreign technologies and equipment. Additional market opportunities focus on the Taiwan Environmental Protection Administration's (TEPA) plan to upgrade the monitoring and testing equipment housed at its 72 monitoring stations throughout the island. TEPA, in cooperation with the two largest city governments of Taipei and Kaohsiung, is also working to purchase a fleet of several thousand compressed natural gas (CNG) buses between 2002-2007. TEPA and the Taiwan Central Government have aggressively promoted an electric scooter and vehicle program which has so far met with little consumer interest despite heavy subsidization.

2.2 LATENT DEMAND: ASPECTS OF INTEREST

2.2.1 Market Description

The Taiwan environmental pollution control market growth rate was at its highest between 1992 and 1996, reaching approximately 20% each year. Figures place the overall 2001 market size at NT\$ 33 billion (US\$ 970 million), up 4% from 2000, of which U.S. imports accounted for NT\$ 5 billion (US\$ 160 million). Within that dollar amount, U.S. air pollution control equipment imports accounted for NT\$ 399 million (US\$ 11.56 million), down significantly from NT\$ 1.1 billion (US\$ 32 million) in 2000. While Taiwan's 2001 economic growth is estimated to be negative, the first decline in over two decades, the environmental market will be largely insulated from this full-scale recession. The environmental protection import market will remain highly competitive between foreign companies -- primarily from the U.S., Japan and Germany -- competing with a rapidly growing and maturing group of domestic environmental companies.

2.2.2 Taiwan's Air Pollution Control Legal Framework

Major environmental legislation such as the 1992 Air Pollution Control Act and the 1998 National Environmental Protection Plan call for incremental implementation of stringent elimination, control and/ or monitoring of air pollution sources. Additional laws and amendments promulgated in 1997-1998 created a more comprehensive list of targeted air pollutants and emissions. The 1995 promulgation of Taiwan's national Pollution Control Fund created the financial mechanism through which the island will address continued and future air quality improvement programs. TEPA is modeled in function and form after the U.S. EPA, and coordinates all regulatory compliance, enforcement and implementation.

Under the Air Pollution Control Act, polluters are categorized as either mobile or stationary. Taiwan is continuing with the privatization of government-owned enterprises, utilities and industries, most of which have already

undergone or completed the process. The new owners are now working to bring the facilities up to current emissions standards. The vast majority of air pollution control products are not designed or manufactured domestically and therefore will need to be imported.

Taiwan CCC Code Categories and Descriptions for Air Pollution Control Products

CCC Code	Description
8479.89.5000-9	Equipment for prevention of air pollution, noise treatment, vibration prevention, water contamination prevention and treatment materials caused by factory wastage
8479.90.2000-3	Parts of equipment for prevention of air pollution, noise treatment vibration prevention, water contamination prevention and treatment materials caused by factory wastage

2.3 LATENT DEMAND: STATISTICAL PROFILE

Overall Taiwan Pollution Control Equipment

(US\$ Millions)

	1999 (Actual)	2000 (Actual)	2001 (Estimated)
Total Market Size	877	930	970
Total Local Production	510	675	780
Total Exports	404	533	610
Total Imports	771	788	800
Imports from the U.S.	158	159	160

Source: Taiwan Commercial Guide 2002, prepared by American Institute in Taiwan (AIT)

Import and trade authorities only gather data on environmental and pollution control imports/ exports. All types of pollution fall under one category. This in mind, the below table shows our best approximation of the air pollution market in Taiwan. All information is based on import/ export statistics, as well as meetings and correspondence with Taiwanese experts in the environmental field.

Air Pollution Control Equipment Market Size

(US\$ Millions)

	1999	2000	2001 (est.)
Total Market	197.5	283.3	133.4
Local Production	22.9	31.2	33.5
Exports	12.6	17.1	18.5
Imports	187.2	269.2	118.4
Imports from U.S.	41.9	32.0	11.6
Exchange rates	32.2	31.1	33.5

Estimated Future Inflation Rate: 1.3%

Top Foreign Sources of Imported Environmental Protection and Pollution Control Equipment

Market Share (%)	1999	2000	2001 (estimated)
Japan	37.5%	39.2%	26.4%
U.S.	22.3%	11.8%	9.7%
Germany	13.2%	15.5%	30.4%
Korea	2.4%	11.4%	11.3%
Other	24.6%	22.1%	22.2%

2.3.1 Latent Demand: Composition

Air pollution control is a major social political issue in Taiwan. Throughout the 1980s and 1990s, the Central Government cracked down hard on gross stationary polluters such as factories, petrochemical refineries, and incinerators. Around the same period, other medium to large companies began developing and implementing their own air pollution control plans. However, these initial measures are becoming quickly outpaced by the rigid enforcement of ever-stricter laws and regulations. A large percentage of air pollution control and prevention equipment is in need of replacement or retrofitting.

More significantly, TEPA and the Central Government are preparing to bring all of Taiwan's small and medium-sized businesses into compliance. Over ninety-five percent of Taiwan's businesses are small to medium-sized (under 100 employees), presenting a tremendous challenge to environmental protection authorities at the local and national levels. Many of these businesses are heavy polluters, manufacturing for the chemical, plastics and electronics industries.

Traditionally, end-users of industrial air pollution control equipment in Taiwan included both state-run enterprises and private companies. As state-run firms attempt to upgrade and modernize in tandem with privatization, they will need to procure new pollution control equipment or upgrade existing facilities to remain competitive. The largest such government-run enterprises include: the Chinese Petroleum Corporation (CPC), Taiwan Power Company (Taipower), Taiwan Sugar Corporation and Chunghua Telecom. In addition to small and medium-sized businesses, their stands to be considerable opportunity for U.S. air pollution control companies to do businesses with these companies.

TEPA's targeted list of emissions includes:

- Dioxin
- THC
- TSP
- Hydrocarbon (Non-Methane)
- O3 (Ozone)
- CO (Carbon Monoxide)
- NO2 (Nitrogen Dioxide)
- SO2 (Sulfur Dioxide)
- H2S (Hydrogen Sulfide)
- NOx

- SO_x
- Pb (Plumbum)
- CFCs (Chlorofluorocarbons)
- Particulate matter of all forms

Among these substances and the corresponding fee charge for their release under the Air Pollution Control Fund, SO_x and NO_x-reducing technologies promise to generate the most important market opportunities. The Air Pollution Control Fund, in its 6 years of operation, has stirred major market interest within the petrochemical, power, steel, cement, electronics and paper industries.

2.3.2 Air Pollution Control Policy Background

Major Laws and Legislation

As a result of rapid economic development, Taiwan's air quality worsened to seriously polluted status during the 1980's and early 1990s. The implementation of strict emissions controls on both stationary as well as mobile pollution sources has resulted in dramatic improvements over the last decade. Taiwan's Air Pollution Control Act forms the foundation upon which all air quality and protection efforts are based. First promulgated in 1975, the Act has been amended numerous times. Taiwan's Environmental Protection Administration (TEPA), however, was not created until 1987, and at that time assumed oversight of the Air Pollution Control Act. The other key piece of legislation guiding air pollution control efforts is the National Environmental Protection Plan. Passed by the Executive Yuan, Taiwan's Cabinet, in February of 1998, the Plan outlines all of Taiwan's environmental quality objectives to be achieved by 2011.

Initial air pollution control efforts in Taiwan focused on regional pollution control throughout the island and targeted specific industries or sources. Laws and regulations were enforced through fining polluters under the "polluter pays" model. The most recent Air Pollution Control Act amendments completed in 1999, changed the regional focus approach and offered a new package of economic incentives to encourage voluntary compliance. This new Total Quality Control (TQC) system also sets in place an emissions credit program under which companies will be allowed to buy or sell credit units as needed. The Total TQC Plan is expected to be put into place during the spring of 2002.

Air Pollution Control Fund

The Taiwan Environmental Protection Administration began collection of the Air Pollution Control Fund in 1995. Annually, the fund provides approximately US\$ 100 million to be used exclusively for air pollution control purposes. Funds come from fuel taxes and fees paid by large factories and businesses, and Central Government budget appropriations. Yearly, total fund income and expenditure depends exclusively on the national budget process.

Air Pollution Control Fund Yearly Budget and Expenditure Items

(US\$ Millions)

Spending Item	1996	1997	1998	1999	2000 (e)	2001	2002
Air pollution control strategy implementation	14.7	8.8	6	3.9	6.5	7.6	5.2
Stationary pollution source control	14.7	11.7	14.8	14	12.7	10.2	10.5
Mobile pollution source control	25.2	55.2	47.8	39.3	42.0	33.8	42.8
Air quality monitoring and database maintenance	1.87	0.6	0.84	0.3	0.21	0.33	0.33
Implementation of greening and implementation of air quality purification zones	60.6	25.8	24.2	11.3	15.3	18.5	14.3
Implementation of air pollution control programs	83.1	38.3	42.4	12.4	17.5	11.1	15.5
Management and general affairs	0.4	0.4	0.36	0.8	0.79	1.2	0.9
Education, training and R&D	6.6	3.6	5.6	4.4	2.9	1.2	1.4
Fixed assets, investment	0.12	0.06	0.02	0.27	0.32	0.66	0.33
Total	207.5	143.7	142.3	86.8	94.6	84.7	88.4

2.3.3 Market Profile

Between 1992-1996 Taiwan's overall environmental market grew by an average 20% annually, but that growth has since slowed to fewer than ten percent during each of the last three years. This market contraction has been due largely to a lull in regulatory compliance deadlines at the close of the 1990s extending through 2001. This situation promises to change. The TEPA effort to bring small and medium-sized businesses into greater compliance began in 2001, but will not see full deployment and implementation until 2002 and 2003. The other major air pollution control priority focuses on mobile polluters. These include: passenger vehicles, large construction vehicles, buses, motorcycles and scooters.

Below are detailed descriptions of numerous future market opportunities. The list is in no way complete, but helps to provide a profile of the type of market activities going on in Taiwan.

CNG Buses/LPG Private Vehicles

In late December 2001, TEPA's Compressed Natural Gas (CNG) Bus Program began its second phase of purchasing more clean air public buses to help improve air quality in the two major metropolitan areas of Taipei and Kaohsiung. Over the next six years, TEPA plans to purchase as many as 2,000 CNG and other alternative clean air technology buses with the goal of completely replacing the existing fleet of heavily polluting diesel models. Taipei City Government tested several different models and companies between 1999 and 2001. In 2002, TEPA plans to assist Taipei to purchase approximately 25 buses, with that number climbing into the hundreds each year after 2003 for both Taipei and Kaohsiung. Funds from the Air Pollution Control Fund and existing public transportation budgets will pay for this expansion.

The Central Government and TEPA are also working to increase the number of Liquefied Petroleum Gas (LPG) vehicles, with a special emphasis on high-mileage vehicles such as taxis and rental cars. Like many other such

programs in cities around the world, the barrier to successfully implementing Taiwan's LPG program is the high cost of switching technologies, and building the refueling and repair infrastructure to support it. To jump start the program, TEPA has developed a package of incentives that include increasing fuel subsidies, building more LPG filling stations, and subsidizing the cost of LPG vehicle purchases. Most notable among these incentives is the price per liter reduction. Standard unleaded automobile fuel costs approximately NT \$20 per liter. LPG fuel, with the subsidies, will cost only NT \$12 per liter.

When initially implemented, the LPG program faced the challenge of retrofitting vehicles with expensive equipment, much of which was imported on a limited scale. Beginning in 2002, Taiwan's largest conglomerate, Formosa Plastics, plans to begin manufacturing and selling a domestic line of LPG-powered vehicles, further expanding the market.

LPG/CNG Stations Infrastructure

As of late 2001, Taipei and Kaohsiung had a total of ten legal LPG filling stations. TEPA will build an additional 20 stations between the two cities in 2002 alone, with the intent of building dozens more as part of the six-year CNG/LPG expansion program. CNG fill-up and repair stations for buses will also be built throughout the cities. However, an exact number has not been publicly announced. A large amount of government funding has also been secured for these programs, ensuring the project is certain to move forward.

TEPA Monitoring Station Equipment Replacement and Upgrade Procurement

In early January 2002, the TEPA Monitoring and Data Management Division will begin replacing and/or upgrading the vast majority of instruments and equipment housed in 72 monitoring stations around the island. The current equipment was bought in the 1990s as part of a single large procurement aimed at quickly making the monitoring stations operational. Much of the equipment is outdated and in need of upgrade. TEPA plans to buy approximately 80 units of numerous types of monitoring and analysis equipment for these stations, specifically instruments capable of measuring SO_x, NO_x, VOC, BTX and PM₁₀. The estimated total number of desired units and parts will reach into the hundreds. Purchasing will begin in early 2002 and take place over the course of the next three years (2002-2004).

Sales to Domestic and International Engineering Consulting Companies

Numerous engineering companies working in Taiwan on a contract basis with international and domestic manufacturers to bring their facilities into regulatory compliance. A shortlist of these engineering companies includes: Faithful Standard Inc., Asia Environmental Technology Corp., Global Entech, Super Max Engineering Enterprise Co., Ltd., and Environmental Resources Management (ERM). Approaching these companies directly may result in business and trade leads, as well as the opportunity to obtain the most up-to-date market profile.

Continuous Emissions Monitoring Systems (CEMS)

TEPA's focus on the "polluter pays" model of enforcement has brought large numbers of factories under stricter monitoring protocols. Many large companies have been forced to purchase and install continuous emissions monitoring systems (CEMS) as part of their overall upgrade efforts. CEMS systems are directly connected through data networking and Internet lines to a TEPA central monitoring system. Under 100 such systems have been installed in Taiwan factories and production centers, but TEPA has been pleased with the results and plans to strongly encourage the future implementation of many more units. While costs are high, this policy priority is especially true for government-owned enterprises undergoing privatization.

Dioxin Scrubbers and Emissions Control Devices for Incinerators/Smelters

While many countries are working to end or drastically curtail the amount of municipal and medical waste incineration, Taiwan's Central Government continues to prioritize incineration as the primary means of disposal. As

a result, Dioxin emissions have become a major problem. Taiwan's steel and cement industries with manufacturing located mainly in or near residential areas, are also working to control their Dioxin emissions or face severe fines and possible business closure. Taiwan's numerous government-run incinerators and various private businesses are continuously on the lookout for cost-effective Dioxin control technologies, especially stack-mounted units.

Continued Gas Station Upgrades and Emissions Controls

Taiwan made the switch to unleaded gasoline in the early 1990s, and since then TEPA has continually pressured filling stations to upgrade their equipment and emissions controls technologies. Such efforts promise to continue indefinitely.

Electric Scooter and Car Program

Historically, efforts by TEPA and the Central Government to promote the sales of electric cars and scooters have met with little market interest. While automotive vehicle sales remain strong in Taiwan, the vast majority of people commute by scooter in their daily travel around home and work. These scooters are relatively inexpensive, reliable and very convenient. Neither an electric car nor scooter model has been able to compete in this market. Numerous alternative clean air scooter development programs are ongoing throughout the Asia region, but their efforts remain limited due to short battery life, negative performance compared with traditional scooters, and long recharge times. Technological progress in both the electronic vehicle and scooter market will undoubtedly continue, but existing models are not competitive, even with heavy subsidies. Taiwan's Central Government, TEPA, and the people of Taiwan in general are receptive to the idea of clean air vehicles, provided they are cost-effective, reliable and easily maintained.

2.3.4 Latent Demand: Leading Segments

The Industrial Development Bureau (IDB) has identified the following environmentally-related technologies as "critical" through the year 2002:

- Air flow controlling techniques
- Organic gas adsorption and desorption techniques
- Fugitive and open-space odor detecting and controlling techniques
- Dioxin control and removal devices

The specific products below correspond to the above technologies:

- Electrostatic dust collecting equipment (including parts and components)
- Semi-dry acid removal equipment
- Wet FGD equipment
- Low nitrogen oxide burning machines
- Organic gas treatment equipment
- DeNOx system equipment
- Heavy metal treatment equipment
- Static dust collector

- Gas cooling equipment
- Filtering dust collector

Generally speaking, all products and services that prevent or reduce emissions at the source will receive continued and long-term market support.

2.4 ACCESSIBILITY: THE STRUCTURE OF COMPETITION

2.4.1 Local Production

The exact clean air market percentage controlled by local companies is unknown, but professional estimates place the figure at around 20-30% and growing. The Central Government continues aggressively to promote the expansion and development of Taiwan's own environmental protection industry. President Chen and his administration have placed strong emphasis on developing Taiwan into a "Green Silicon Island." This policy goal is to make Taiwan into an Asia Region environmental leader. Taiwan has over 500 domestic companies doing business in various environmental fields. Most such firms are engaged in engineering and consulting work, but approximately 35-50 (depending on market activity) manufacture pollution control equipment.

There is little original research and development of air pollution-related equipment in Taiwan. Those companies engaged in domestic manufacturing have licensing and cooperation agreements with U.S., Japanese, and European companies. As can be expected, domestically produced equipment is less expensive than international imports, and backed by a more familiar local presence.

2.4.2 Imports

Foreign importers promise to continue their control of the market through sales of high-end equipment and products. However, much of the imported equipment and technologies require local assembly and on-site installation. Taiwan imported US\$ 118 million worth of overall pollution control equipment in 2001, down sharply from past years. This trend promises to be replaced with rising sales as TEPA begins strict enforcement of a new round of emissions and control standards to be implemented in 2002-2005. In order, the top exporting countries to Taiwan were Japan, United States, Germany, Korea and the United Kingdom. The market control of each of the top three countries has fluctuated between 10-15% over the last two years, and promises to continue to do so because of the intense competition.

Imports are expected to increase 5-10% over 2001 figures in 2002 and 2003. This percentage will further increase as purchases of low emissions CNG buses and related technologies are expanded. The continued liberalization of procurement and trade procedures as part of Taiwan's accession to the WTO should also positively affect the import market.

2.4.3 U.S. Market Position and Share

In 2000, U.S. companies sold approximately US\$ 32 million worth of air pollution control equipment to Taiwan, down from US\$ 41 million in 1999. Environmental quality control and protection products imported from the U.S. are recognized in Taiwan as the most technologically advanced leader globally. However, total U.S. imports, while ranked first throughout much of the 1990s, have fallen behind Japan and, in some product areas, Germany. International import competition promises to remain stiff in the near future, and one of the main ways U.S. importers

can remain competitive is to continue strengthening after sales service and support. Japanese companies have made major inroads throughout the Taiwan imports market due to exceptionally strong service and after sales support. Other purchasers of imported air quality equipment have expressed that some U.S. companies in recent years have shown a reluctance to sufficiently adapt their technology and products to the needs of Taiwan customers. In some other instances, U.S. products were found to be much larger than more compact and suitable Japanese and German technologies.

2.4.4 Researching and Understanding the Taiwan Market

The Central Trust of China (CTC) handles the majority of large (over NT\$ 15 million) and technically complex tenders. CTC is a quasi-government organization with procurement coordination responsibilities. Agencies wanting to purchase products notify CTC of their purchasing needs, at which time CTC announces and administers tender procedures. CTC-arranged tenders may be domestic or international, and the evaluation of all technical requirements is left to the agency/ party interested in making the purchase.

Public environmental projects concerning in the air, water and pollution control areas are most often contracted through TEPA and IDB. The research and project design responsibilities are usually contracted out to engineering firms in the private sector, or to professors and their staff from local universities working on a consulting basis.

Taiwan end users like to obtain equipment from well-known suppliers whose products have a global track record (not necessarily in Taiwan). To improve sales and visibility, U.S. firms might consider the following suggestions:

- Develop good market information. Tap formal and informal information channels. Nothing replaces market information gained firsthand from a visit to Taiwan.
- Find a local partner to establish sales and maintenance networks. Taiwan has a well-developed network of agents and engineering firms that can eagerly and effectively represent American products in Taiwan. Local representation is often much more cost effective than establishing an office. Indeed, most foreign firms enter Taiwan's environmental market through the establishment of a technical cooperation relationship with a domestic agent. While some firms are willing to act as distributors, most firms prefer the partnering aspect of an agent relationship.
- Use a local partnership or connection to gather background information on a proposed sale or project. This market intelligence is arguably one of the largest and most important ways a local partnership can assist an overseas company.
- Provide current and quality literature on all equipment. Supply potential buyers with promotional materials that have appeared in professional journals, and whose messages accurately and honestly captures the overall superiority of the product. Most importantly, if at all possible, translate these materials into Chinese (Mandarin Chinese in complex or non-simplified characters). While the English proficiency of Taiwan's engineering and technical experts is high, Chinese language materials represent a visible and tangible commitment to the market and its customers, while simultaneously allowing all decision-makers to study your product. Many high-level decision makers do not have technical backgrounds. As an added benefit, translated documents and materials can often easily be converted to simplified characters using computer software for use in the Mainland China market.
- Sponsor a site visit or demonstration. Taiwan business people travel often. Government administrations often visit the U.S. for trade delegations, conferences and seminars. The demonstration, therefore, need not be in Taiwan, as many U.S. companies have discovered. The successful visit and presentation of a company's products and/ or services and their already market-tested application is crucial to making sales.
- Apply for the Taiwan Industrial Development Bureau's (IDB) Tax Exemption Certificate. All U.S. companies importing air pollution control and quality equipment should take advantage of import duty exemptions. Forms and information can be located on IDB's Web site (<http://www.moeaidb.gov.tw/>).

2.5 ACCESSIBILITY: KEY FACTORS

2.5.1 Procurement Process Overview

The market for government procurement in Taiwan can be attractive. Taiwan fundamentally reformed the procurement regime when it enacted the Government Procurement Law (GPL) in 1999. The GPL and its related regulations govern operation of the overall procurement system. Information relating to the GPL can be obtained through the World Wide Web (<http://www.pcc.gov.tw>). Taiwan joined the World Trade Organization (WTO) and the WTO Government Procurement Agreement (GPA) as of January 1, 2002.

Any ministry or superior government body of Taiwan has the authority to supervise procurement activities of its subordinate agencies or entities. However, the following have overall procurement policy-making power:

- The Ministry of Audit, independent from the administrative system, has the authority to inspect and audit the governmental procurement of goods and construction works.
- The Public Construction Commission (PCC) has authority to review the planning and implementation of major construction projects. The PCC also develops and administers regulations under the GPL.
- The Ministry of the Interior has issued guidelines for procurements of construction projects.

Classification of Tendering Procedures

Tendering procedures are categorized into open tendering, selective tendering and single tendering procedures.

Open tendering is used when the estimated value of a proposed procurement for goods or a construction project is equal to or exceeds NT\$50 million (approximately US\$1.51 million) or NT\$5 million (approximately US\$151,515), respectively. When selective tendering is used, the procuring entity selects two or more responsible suppliers for quotations. Single tendering may be used in cases where the value of a proposed procurement is below NT\$5 million (approximately US\$151,515); only one supplier is selected for quotation.

Procurement Information

For procurements worth NT\$50 million (approximately US\$1.51 million) or more involving the purchase of goods, services or construction works, tender notices are published in local newspapers for at least two days and posted in the building of the procuring entity for at least five days. The procuring entity is also encouraged to enter the tender notice into the database operated by the PCC. The PCC will then put the data in the Government Procurement Gazette. In normal situations, the time-limit for receipt of tenders should be no less than 14 days. The time-limit should be no less than 28 days for special or complex procurements; and the time-limit for a procurement that is open to foreign tenderers shall be no less than 40 days.

Award Criteria

Contracts will, in principle, be awarded upon consideration of two criteria: either lowest price or most advantageous bid. The tender with the lowest price that is not higher than the government estimate will often be awarded the contract. A government entity may order in the tender documentation that a contract be awarded based on the most advantageous tender. In judging the most advantageous tender, criteria such as technology, quality, function, commercial terms and/or price of products and services, may be used for evaluation. Procuring entities may select the "most advantageous bid" which perhaps will not be the cheapest bid, but provide the most value. However, due to invariable complaints from losing bidders and claims of unfairness or worse in "most advantageous bid" situations, procuring entities more often choose the most defensible method: lowest price meeting the required specs.

2.5.2 Distribution Strategies

Direct Export

Selling products directly to a purchaser in Taiwan is typically the first sales method considered by foreign companies. The presence of the foreign company in Taiwan is not required to export directly to Taiwan. Direct export sales usually result from unsolicited enquires or from advertisements placed in publications distributed internationally or in Taiwan.

Agent

An alternative to direct export is the retention of a sales agent to actively solicit sales. A sales agent in Taiwan is typically an independent person or entity that receives a commission based upon sales achieved. However, Taiwan laws do not require exporters to Taiwan to employ a local sales agent. The advantages of using a sales agent, as opposed to selling directly, include having someone who knows the market, language and culture, and having a representative who can support the product locally. There are some issues and risks to be aware of in retaining a sales agent. The foreign company bears the risk of loss or damage to the product until it is delivered to the purchaser. In addition, the foreign company may be liable for the acts and representations of the sales agent. Foreign companies may be subject to foreign taxation in Taiwan if the sales agent has the authority to accept orders or conclude contracts, or otherwise engage in activities which constitute doing business.

Sales by a Distributor

Appointing a distributor in Taiwan, instead of a sales agent, provides a more significant presence. Unlike a sales agent, a distributor is an independent contractor, which purchases the product for its own account for later resale. The Taiwan Civil Code governs the relationship between the distributor and the foreign company. The distributor bears the cost of warehousing and servicing the product. The individual or company is also responsible for setting prices and obtaining and maintaining the sales and service force. Unlike an agent, a distributor in Taiwan cannot contractually commit the foreign company, and thus the foreign company will not be responsible for the distributor's actions.

2.5.3 Import Duties and Taxes

Goods imported into Taiwan are classified in accordance with a tariff schedule prepared by the government, which is based on Customs Co-operation Council Nomenclature (CCC). An updated list of dutiable commodities can be obtained from the Department of Customs, Ministry of Finance. The duty-paying value of imported goods is calculated based upon the true Cost Insurance Freight (CIF) Taiwan price. If an accurate CIF Taiwan price is not available, the wholesale, domestic market value at the port of importation will be used as the base rate upon which the import duty is calculated.

The Taiwan government does not levy a tariff on pollution prevention equipment. Items under the CCC code heading 8479.89.5000-9 (Equipment for the prevention of air pollution, etc.) and 8479.90.2000-3 (Parts thereof) are exempt from duties. Other imports may qualify for exemption as well. In all cases, a Free Tax Certificate must be obtained from IDB. There are no known non-tariff barriers imposed on U.S. imports.

2.5.4 Customs Information

Department of Customs Administration, Ministry of Finance
No. 2, Ai Kuo West Road
Taipei
Tel: (8862)-2322-8217
Fax: (8862)-2394-1497

Directorate General of Customs, Ministry of Finance
No. 13 Ta Cheng Street
Taipei
Tel: (8862)-2550-5500 ext. 1016 or 2417
Fax: (8862)-2550-8124

Board of Foreign Trade, Ministry of Economic Affairs
No. 1 Hu Kou Street
Taipei
Tel: (8862)-2397-7210 or 2397-7256
Fax: (8862)-2351-3603

2.5.5 Other Import-Related Fees

In addition to import duties, an importer of goods must pay a Harbor Construction Fee charged based on the weight and/ or quantity of the item(s) imported. As a helpful approximation, in past years the Fee was 0.1% of the value of the item(s). The newly adopted (January 1, 2002) system of fee assessment under Taiwan's entrance into the WTO has been promised to be a similar if not lesser amount. Goods that arrive by airfreight or parcel post are exempt from this fee.

2.5.6 Financial Settlement Methods

The settlement of international trade transactions with companies in the ROC is generally made in one of the following ways

- Letter of credit in foreign currency
- Documents against payment (D/P)
- Documents against acceptance (D/A)
- Consignment
- Installment
- Open account

2.6 CONTACTS

U.S. firms wishing to learn more about Taiwan's air pollution control equipment market and related opportunities are encouraged to contact the following individuals for additional information:

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American Institute in Taiwan
32F, 333, Keelung Rd., Sec. 1, Taipei, Taiwan
Tel: 886-2-2720-1550, Ext. 386
Fax: 886-2-2757-7162
E-mail: mark.lewis@mail.doc.gov

Grace Tao
American Institute in Taiwan
32F, 333, Keelung Rd., Sec. 1, Taipei, Taiwan
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Fax: 886-2-2757-7162
E-mail: grace.tao@mail.doc.gov

3 FINANCIAL INDICATORS: AIR AND WATER RESOURCE AND SOLID WASTE MANAGEMENT

3.1 OVERVIEW

Is Taiwan competitive? With the globalization of markets, the increased mobility of corporate assets, and the need for productive human resources, this question has become all the more complex to answer. The financial indicators section was prepared to tackle this question by focusing on certain fundamentals: financial performance and labor productivity. Rather than focus on the economy as a whole, the analysis presented here considers only one sector: air and water resource and solid waste management.

We are essentially interested in the degree to which firms operating in Taiwan have fundamentally different financial structures and performance compared to firms located elsewhere. With respect to this view of competitiveness, if one were to invest or operate in Taiwan, how would the firm's asset structure likely vary compared to a firm operating in some other country in Asia or average location in the world? In Taiwan, do firms typically hold more cash and other short term assets, or do they concentrate their assets in physical plant and equipment? On the liability side, do firms operating in Taiwan have a higher percent of payables compared to other firms operating in Asia, or do they hold a higher concentration of long term debt? The structure of the income statement is also telling. Do firms operating in Taiwan have relatively higher costs of goods sold, operating costs, or income taxes compared to firms located elsewhere in the region or the world in general? Are returns on equity higher in Taiwan? Are profit margins greater? Are inventories held longer? The financial indicators section was designed to answer these and similar questions that naturally affect one's decision to invest or operate in Taiwan. Again, we are particularly interested in air and water resource and solid waste management, and not the economy as a whole.

In many instances, people make all the difference. In addition to financial competitiveness, we consider the extent to which labor deployment and productivity in Taiwan differs from regional and global benchmarks. In this case, we are interested in the amount of labor required to operate a typical business in Taiwan and the likely returns on this human investment. What is the typical ratio of short-term and long-term assets to employee (employed in air and water resource and solid waste management operations)? What are typical capital-labor ratios? How different are these ratios to those in Asia in general and the world as a whole? What are the average sales and net profits per employee in Taiwan compared to regional benchmarks?

The goal of this section is to assist managers in gauging the competitive performance of Taiwan at the global level for air and water resource and solid waste management. With the globalization of markets, greater foreign competition, and the reduction of entry barriers, it becomes all the more important to benchmark Taiwan against other countries on a worldwide basis. Doing so, however, is not an obvious task.

This report generates international benchmarks and measures gaps that might be revealed from such an exercise. First, data is collected from companies across all regions of the world. For each of these firms, data are standardized into comparable categories (assets, liabilities, income and ratios), by country, region and on a worldwide basis. From there, we eliminate all currency effects by standardizing within each category. Global benchmarks are then compared to those estimated for air and water resource and solid waste management in Taiwan.

Though we heavily rely on historical performance, the figures reported are not historical but are forecasts and projections for the coming fiscal year.

3.1.1 Financial Returns and Gaps in Taiwan

The approach used in this report to evaluate operating performance for air and water resource and solid waste management in Taiwan is called "vertical analysis." For those unfamiliar with this type of analysis, frequently taught in graduate schools of business, the reader is recommended Jae K. Shim and Joel G. Siegel's recent book titled *Financial Management*.¹ In their discussion of financial statement analysis and ratios, Skim and Siegel (p. 42-43), describe common-size statement (vertical analysis) as follows:

A common-size statement is one that shows each item in percentage terms. Preparation of common-size statements is known as *vertical analysis*, in which a material financial statement item is used as a base value and all other accounts on the financial statement are compared to it. In the balance sheet, for example, total assets equal 100 percent, and each individual asset is stated as a percentage of total assets. Similarly, total liabilities and stockholders' equity are assigned a value of 100 percent and each liability or equity account is then stated as a percentage of total liabilities and stockholders' equity, respectively. ... For the income statement, a value of 100 percent is assigned to net sales, and all other revenues and expense accounts are related to it. It is possible to see at a glance how each dollar of sales is distributed among various costs, expenses, and profits.

The authors suggest that vertical analyses involve industry-based comparisons. Such a comparison "allows you to answer the question, 'How does a business fare in the industry?' You must compare the company's ratios to... industry norms." (p. 43-44) This approach is extended to country competitiveness (in this case Taiwan) for a particular sector (in this case air and water resource and solid waste management). This involves calculating country, regional and global norms. This introduction will describe the seven-stage methodology used to perform this analysis. Each stage should be seen as a working assumption behind the numbers presented in later chapters.

Stage 1. Industry Classification. This stage begins by classifying the company into an industry. For this, we have relied on a combination of the North American Industry Classification System (NAICS pronounced "Nakes"), a relatively new system for classifying business establishments, and the older Standard Industrial Classification (SIC) system. Adopted in 1997, NAICS codes are the new industry classification codes used by statistical agencies of the United States. NAICS was developed jointly by the U.S., Canada, and Mexico to provide comparability in statistics about business activity across North America. After 60 years of service, the outdated SIC system was retired on October 1, 2000, leaving only the NAICS codes for official use. The NAICS classification system adds some 350 new industries and represents a revision to over 60% of the previous SIC industries. Despite its official retirement, the SIC system is still commonly used (and often reported in firm's financial statements).

For most companies in the world, classification within either the new NAICS or older SIC systems is a rather straight forward exercise. For some, however, it can be problematic. This is true for several reasons. The first being that the SIC or NAICS classification systems are rather broad for many product and industry categories (a firm's products or services may be only a minor aspect of the classification's definition). The second is that some firms' activities span multiple codes. Finally, it is possible that a firm is classified by one source using its SIC code, and by another using its NAICS code, and by a third using both. Furthermore, some sources do not report either code, but instead use qualitative statements of the firm's activities. Nevertheless, if one wishes to pursue a vertical analysis, some classification needs to take place which selects a peer group. In making this classification, one can rely on a number of sources. In some countries, firms must "self" classify in official periodic reports (e.g. annual reports, 10Ks, etc.) to public authorities (such as the Securities and Exchange Commission). These reports are then open for public scrutiny (e.g. EDGAR filings). In other cases, commercial data vendors or private research firms provide SIC/NAICS codes for specific companies. These include:

- Bloomberg - www.bloomberg.com
- Datastream (Thomson Financial) - www.datastream.com

¹ Skim and Siegel (2000), *Financial Management* published by Barron's Educational Series, Inc. (BARON'S BUSINESS LIBRARY Series), ISBN: 0-7641-1402-6.

- **Dun & Bradstreet** - www.dnb.com
- **Hoovers** - www.hoovers.com
- **HarrisInfoSource** - www.HarrisInfo.com
- **InfoUSA** - www.infousa.com
- **Investext** (Thomson Financial) - www.investext.com
- **Kompass International Neuenschwander SA.** – www.kompass.com
- **Moody's Investors Service** - www.moody's.com
- **Primark** (Thomson Financial) - www.primark.com
- **Profound** (The Dialog Corporation – A Thomson Company) - www.profound.com
- **Reuters** - www.reuters.com
- **Standard & Poor's** - www.standardandpoors.com

It is interesting to note that commercial vendors often report different qualitative descriptions and industrial classifications from one to another. These descriptions and classifications may also be different from those reported by the firm itself. Anyone hoping to perform a benchmarking study, therefore, has to make a judgment call across these various sources in order to determine a reasonable classification. In this report, we have decided a meta-analytic process, by combining various sources (including linking a classification's keywords to qualitative descriptions of the firm's product line). In cases of inconsistency, the most recent or globally comparable available is chosen. Again, the overall goal is to classify firms, which either produce similar products, offer similar services, or are in the same stage of the value chain for a particular industrial classification. In the case of this report, the SIC code selected is: 9511 which is defined as "air and water resource and solid waste management". This classification should be seen as a working assumption. In order to obtain a more detailed discussion of this classification, the reader is referred to the Web sites developed by the U.S. Census Bureau: <http://www.census.gov/epcd/www/naics.html>. Basic definitions and descriptions are provided at: <http://www.census.gov/epcd/www/drnaics.htm#q1>. A full correspondence table between SIC and NAICS codes, and detailed definitions are given at <http://www.census.gov/epcd/www/naicstab.htm>.

Stage 2. Firm-level Data Collection. A global search was conducted across over 20,000 companies in over 40 major economies, including Taiwan, for those that report financials (balance sheet and income statements) and that are involved in air and water resource and solid waste management. It should be noted that the public-domain financials can be either historic or projections. It should also be noted that even historic figures can be modified in the future and often represent "estimates" of performance.

Stage 3. Standardization. Once collected, public domain financial figures of firms identified in Stage 2 are standardized into comparable categories (assets, liabilities, and income). Again, these are limited to firms involved in some aspect of air and water resource and solid waste management (i.e. are members of the value chain). From there, we eliminate all currency effects by standardizing within each category (creating ratios). In order to maintain comparability over time and across countries, vertical analysis is used. In the case of a firm's assets, we treat the total assets as equaling 100, irrespective of the value of the local currency. All other assets are then calculated as a percent of total assets. In this way, the structure of the firm's assets can be easily interpreted and compared with international benchmarks. For liabilities, total liabilities and equity are indexed to equal 100. For the income statement, total revenue is indexed to equal 100, and all other figures are calculated as a percent of these figures.

Stage 4. Filtering. Not all the firms selected in Stage 2 or the ratios calculated in Stage 3 are used for the country, regional or global benchmarks, as a number of companies are purposely dropped from the analysis. This is justified by the "outlier" phenomenon that plagues such analysis. The problem lies in that any given company in the benchmarking pool may be facing some exceptional event or may be organized in an exceptional way so as to make its ratios vastly different from the norm. By including such firms, the global benchmarks can be overly skewed. In many countries, firms are organized into holding groups. These groups nominally have very few employees (e.g. 4 to 25 employees), but have extremely large assets, liabilities, or revenues. As such, the inclusion or exclusion of firms having this form of management can affect the ratios and benchmarks reported. Likewise, some firms have no net sales, no assets, no liabilities, or ratios. Others have ratios that appear implausible for a normal or viable

company. In order to not allow these firms to affect the global benchmarks, only those firms with reasonable financials have been chosen. Finally, in some countries, detailed financials are not available or are not comparable to either the company in question or the global norm (e.g. various forms of depreciation). In this case, only those which exist and are comparable are reported. The details, therefore, that comprise a given ratio or set of ratios may not be reported. This may lead to the addition of several ratios, not summing to the whole.

Stage 5. Calculation of Global Norms. Once the filtering process has eliminated outliers, a final list of companies included is compiled. Based on this list, the ratios discussed in Stage 3 are calculated for every firm, and then averaged to create country, regional and global benchmarks. The world average is calculated using each country's population as a weight.

Stage 6. Projection of Deviations. The goal of this report is not only to estimate raw ratios or averages, but also to present the difference between Taiwan and projected global averages for that same ratio. Furthermore, it can be insightful to know the location of each ratio within the distribution of the countries represented in Stage 5. These deviations, in fact, can be seen as projections or likely scenarios for the future. This is often true for two reasons. First, while a company's financials change from year to year, its ratios are often stable. This is especially true for the country, regional and global benchmarks which represent averages across companies. From a purely Bayesian sense, the difference between the company's recent ratios and the benchmarks are a reasonable prior for future deviations. This is true, even if the entire industry is hit by an external or exogenous shock, such as an oil crisis or economic slowdown. In other words, we assume that the structure of the variance in the industry's financials remains stable. Second, many of the data are based on preliminary reports that might be changed in future filings. As forecasts, therefore, the numbers derived from these are also forecasts of past and future performance (with associated uncertainties). The calculation of the difference between a country's ratios and the global benchmarks is meant to yield roughly approximate forecasts, or "useful measures". Within Asia, the reliability of estimates varies from one country to another for those ratios given in tables that report national averages. This is true because reliable source statistics are not available for all countries in Asia. Countries with the highest reliability, or sample sizes after filtering in Stage 4, include Malaysia. Others are generally econometrically extrapolated using models that use country characteristics (e.g. income per capita) as independent variables (i.e. countries having similar economic structures are assumed to have similar operating ratios). Again, the forecasts are based on the assumption of relative stability. This assumption has proven extremely robust in previous applications of this methodology (i.e. today's weather is a good predictor of tomorrow's weather, but not the weather three years from now). The results reported should be viewed as those for a "proto-typical" firm operating in Taiwan whose primary activity is air and water resource and solid waste management.

Stage 7. Projection of Ranks and Percentiles. Based on the calculation of deviations, relative ranks and percentiles are calculated across the firms used in the benchmarks. The percentile estimates the percent of a representative sample of countries in the world having values of the ratio lower than Taiwan. It is important to note that a percentile being high (or low) does not mean good (or bad) past, present or future financial performance. The reader must draw this conclusion on their own. The estimates provided were created to provide managerial insight, and not a recommendation with respect to particular investments within any country.

We graphically report, for each part of the financial statement, the larger structural differences between Taiwan and the regional and global benchmarks, and provide a summary table of ranks and percentiles. These are estimates for firm which would be involved in air and water resource and solid waste management. A deviation from the global norm need not be a bad sign. Rather, it is simply a substantial difference that might merit further attention or perhaps signal a country's relative strength or weakness for the coming fiscal year.

3.1.2 Labor Productivity Gaps in Taiwan

In the case of labor productivity measures, this report maintains comparability over time and across countries by using a common currency (the US dollar) and relates each measure to a “per employee basis”. Ratios are projected using raw financial statistics and, as ratios, are therefore comparable. Given a country’s human resource ratios, the resulting figures are benchmarked across regional and global averages. The seven stage approach given above is used in a similar manner.

We then report, for each part of the financial statement, the larger labor productivity gaps that Taiwan has vis-à-vis the worldwide average (for air and water resource and solid waste management). Again, a gap need not be a bad sign. Rather, it is simply a substantial difference that might merit further attention or signal a firm’s relative incentive to invest locally. All figures are projections, so due caution is required.

3.1.3 Limitations and Extensions

Shim and Siegal (p. 60) stress that “while ratio analysis is an effective tool for assessing a company’s financial condition,” operating Taiwan or any other country, “its limitations must be recognized.” They find that (p. 59) “no single ratio or group of ratios is adequate for assessing all aspects of a company’s financial condition” operating in a particular country. The authors note the following limitations associated with ratio analyses which apply to the global benchmarking and vertical analysis presented here (p.60):

- Accounting standards or policies may limit useful comparisons across companies
- Management accounting practices across companies and countries may not be performed in the same style
- Ratios are static and do not reveal future trends
- Ratios do not indicate the quality of the components used to calculate the ratios (i.e. ratios have ambiguous interpretations)
- Reported ratios may not reflect real values
- Companies may be highly diversified, limiting the comparability of their ratios to others
- Industry averages or norms are approximate; finer industry definitions may be required for certain interpretations or comparisons
- Financial statements and resulting ratios often mean different things to different people depending on their points of view or motivations.

Again, all figures reported here are estimates, so due caution is required. The above caveats, and the fact that statements made in this report are forward-looking, requires that this point be emphasized. A number of intervening factors can have material effect on the ratios and variances forecasted. These include changes in a company’s management style, exchange rate volatility, changes in accounting standards, the lack of oversight or comparability in accounting standards, changes in economic conditions, changes in competition, changes in the global economy, changes in source data quality, and similar factors.

3.2 FINANCIAL RETURNS IN TAIWAN: ASSET STRUCTURE RATIOS

3.2.1 Overview

In this chapter we consider the asset structure of companies involved in air and water resource and solid waste management operating in Taiwan benchmarked against global averages. The chapter begins by defining relevant terms. A common-size statement, or vertical analysis of assets is then presented for companies operating in Taiwan and the average global benchmarks (total assets = 100 percent). For ratios where there are large deviations between Taiwan and the benchmarks, graphics are provided (sometimes referred to as a financial “gap” analysis). Then the distribution of ratios is presented in the form of ranks and percentiles. Certain key vertical analysis asset ratios are highlighted across countries in the comparison group.

3.2.2 Assets – Definitions of Terms

The following definitions are provided for those less familiar with the asset-side of financial statement analysis. As this chapter deals with the vertical analysis and global benchmarking of assets, only definitions covering certain terms used in this chapter’s tables and graphs are provided here. The glossary below reflects commonly accepted definitions across various countries and official sources.

- **Current Assets.** Current assets are generally defined to be resources which are available, or can readily be made available, to meet the cost of operations or to pay current liabilities.
- **Property Plant and Equipment - Net.** Net PP&E equals the original cost of property, plant, and equipment (PP&E), less accumulated depreciation, depletion and amortization (DD&A).
- **Receivables (Net).** Net receivables are defined as the net amount due to the company from private persons, businesses, agencies, funds, or governmental units which is expected to be collected in the form of moneys, goods, and/or services.
- **Total Assets.** Total assets are defined as the financial representation of economic resources, the beneficial interest in which is legally or equitably secured to a particular organization as a result of a past transaction or event.
- **Total Inventories.** Total inventories are defined as the total amount of goods on hand.

3.2.3 Asset Structure: Outlook

Using the methodology described in the introduction, the following table summarizes asset structure benchmarks for firms involved in air and water resource and solid waste management in Taiwan. To allow comparable benchmarking, a common index of Total Assets = 100 is used. All figures are current-year projections for companies operating in Taiwan based on latest financial results available.

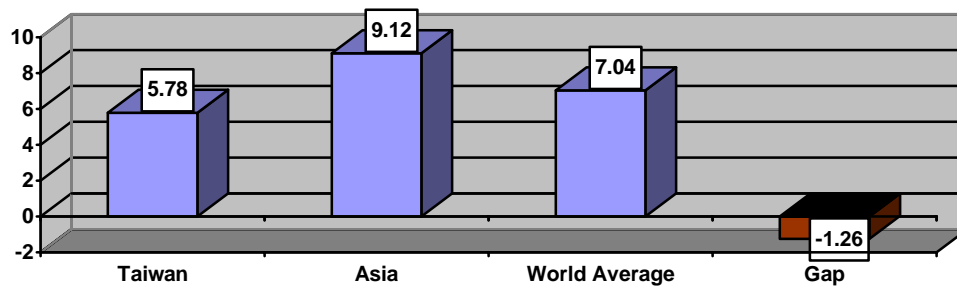
Asset Structure	Taiwan	Asia	World Avg.
Receivables (Net)	5.78	9.12	7.04
Total Inventories	0.19	2.11	1.64
Other Current Assets	0.73	0.86	0.66
Current Assets - Total	6.89	19.97	16.16
Property Plant and Equipment - Net	33.88	16.18	14.29
Total Assets	100.00	100.00	100.00

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

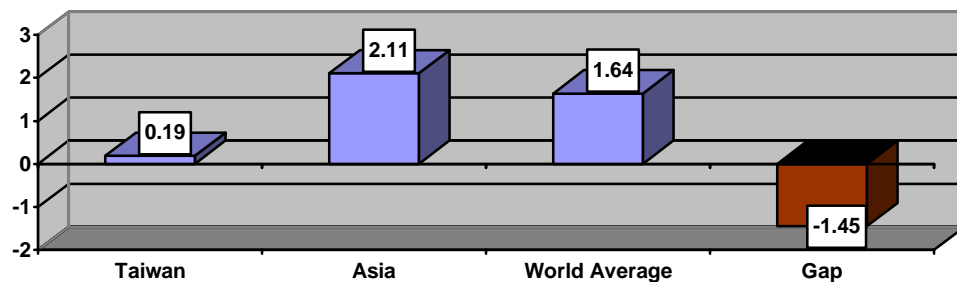
3.2.4 Large Variances: Assets

The following graphics summarize for air and water resource and solid waste management the large asset structure gaps between firms operating in Taiwan and the world average. A gap cannot necessarily be interpreted as a positive or negative reflection on performance. Gaps may signal areas of specialization, market focus, or expertise. More contextual information is required to fully interpret these gaps. The gaps highlighted here are simply those that are large.

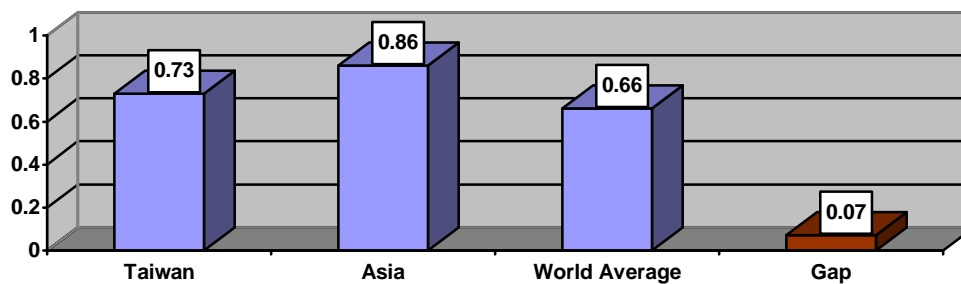
Gap: Receivables (Net)

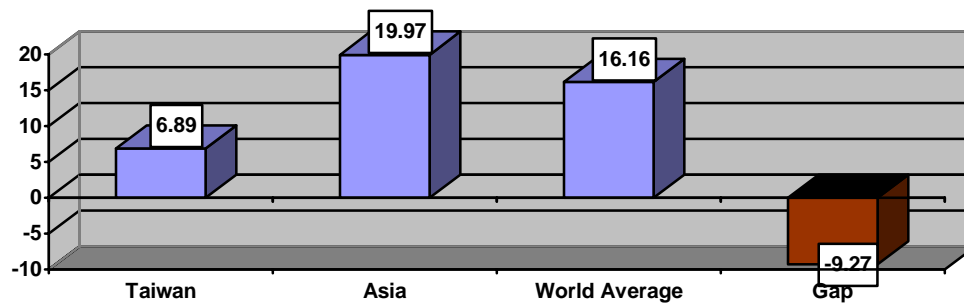
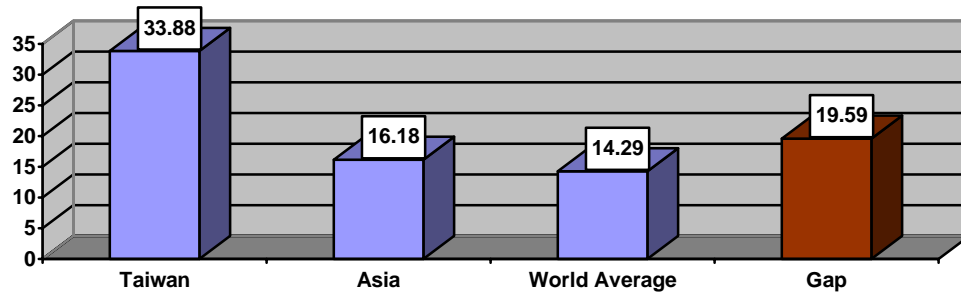
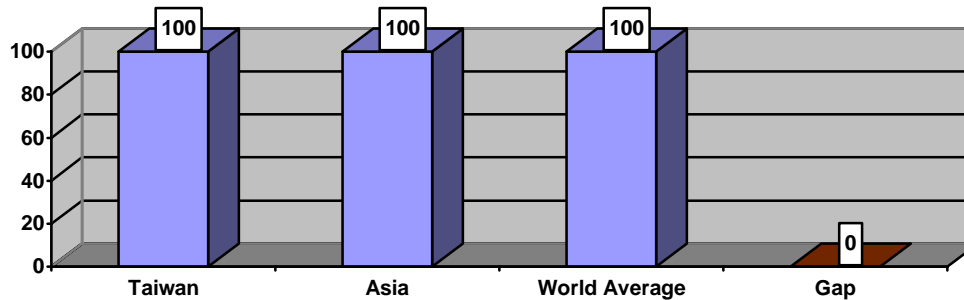


Gap: Total Inventories



Gap: Other Current Assets



Gap: Current Assets - Total**Gap: Property Plant and Equipment - Net****Gap: Total Assets**

3.2.5 Key Percentiles and Rankings

We now consider the distribution of asset ratios for air and water resource and solid waste management using ranks and percentiles. What percent of countries have a value lower or higher than Taiwan (what is the ratio's rank or percentile)? The table below answers this question with respect to the vertical analysis of asset structure. The ranks and percentiles indicate, from highest to lowest, where a value falls within the distribution of all countries considered in the global benchmark (the number of countries in the benchmark per line item may vary, as indicated in the Rank). Again, a high or low figure does not necessarily indicate good or bad performance. After the summary table below, a few key vertical asset ratios are highlighted in additional tables.

Asset Structure	Taiwan	Rank of Total	Percentile
Receivables (Net)	5.78	27 of 53	49.06
Total Inventories	0.19	41 of 53	22.64
Other Current Assets	0.73	17 of 53	67.92
Current Assets - Total	6.89	33 of 53	37.74
Property Plant and Equipment - Net	33.88	18 of 53	66.04
Total Assets	100.00		

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Receivables (Net)

Countries	Value (total assets = 100)	Rank	Percentile	Region
Norway	58.44	1	98.11	Europe
Switzerland	44.12	2	96.23	Europe
Luxembourg	38.16	3	94.34	Europe
Japan	35.74	4	92.45	Asia
Finland	34.59	5	90.57	Europe
Sweden	33.34	6	88.68	Europe
Denmark	32.39	7	86.79	Europe
USA	31.08	8	84.91	North America
Malaysia	24.47	9	83.02	Asia
South Africa	24.46	10	81.13	Africa
Brazil	22.16	11	79.25	Latin America
Chile	21.08	12	77.36	Latin America
Thailand	16.02	13	75.47	Asia
the United Kingdom	15.36	14	73.58	Europe
Singapore	15.17	15	71.70	Asia
Peru	11.84	18	66.04	Latin America
New Zealand	8.62	20	62.26	Oceania
Hong Kong	8.44	21	60.38	Asia
Spain	7.63	22	58.49	Europe
Philippines	7.11	23	56.60	Asia
Israel	7.00	24	54.72	the Middle East
Ireland	6.94	25	52.83	Europe
Taiwan	5.78	27	49.06	Asia
Indonesia	5.62	28	47.17	Asia
Portugal	5.21	30	43.40	Europe
Greece	4.74	31	41.51	Europe
Czech Republic	4.22	32	39.62	Europe
Argentina	3.93	34	35.85	Latin America
South Korea	3.84	35	33.96	Asia
Russian Federation	3.46	37	30.19	Europe
China	3.45	38	28.30	Asia
Pakistan	3.39	39	26.42	the Middle East
Hungary	3.11	40	24.53	Europe
India	3.05	41	22.64	Asia
Poland	2.54	42	20.75	Europe
Turkey	2.12	43	18.87	the Middle East
Mexico	2.12	44	16.98	Latin America
Germany	0.03	46	13.21	Europe
Canada	0.03	47	11.32	North America
France	0.03	48	9.43	Europe
Austria	0.03	49	7.55	Europe
Belgium	0.03	50	5.66	Europe
Italy	0.02	51	3.77	Europe
Netherlands	0.02	52	1.89	Europe
Australia	0.02	53	0.00	Oceania

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Receivables (Net)
(Air and Water Resource and Solid Waste Management)

Countries in Asia	Value (total assets = 100)	Rank	Percentile
Brunei	39.85	1	96.15
Japan	35.74	2	92.31
Malaysia	24.47	3	88.46
Thailand	16.02	4	84.62
Singapore	15.17	5	80.77
Mongolia	14.29	6	76.92
North Korea	11.49	7	73.08
Hong Kong	8.44	8	69.23
Papua New Guinea	8.04	9	65.38
Burma	7.14	10	61.54
Philippines	7.11	11	57.69
Taiwan	5.78	12	53.85
Indonesia	5.62	13	50.00
Maldives	5.13	14	46.15
Sri Lanka	4.04	15	42.31
Macau	3.88	16	38.46
South Korea	3.84	17	34.62
China	3.45	18	30.77
Seychelles	3.23	19	26.92
India	3.05	20	23.08
Cambodia	2.31	21	19.23
Laos	2.23	22	15.38
Vietnam	2.03	23	11.54
Bangladesh	1.74	24	7.69
Bhutan	1.65	25	3.85
Nepal	1.48	26	0.00

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Total Inventories

Countries	Value (total assets = 100)	Rank	Percentile	Region
the United Kingdom	8.31	1	98.11	Europe
Singapore	8.21	2	96.23	Asia
Malaysia	8.01	3	94.34	Asia
South Africa	8.00	4	92.45	Africa
Brazil	7.25	5	90.57	Latin America
Chile	6.90	6	88.68	Latin America
Thailand	5.24	7	86.79	Asia
Norway	4.75	8	84.91	Europe
Peru	3.87	11	79.25	Latin America
Switzerland	3.58	12	77.36	Europe
Luxembourg	3.10	13	75.47	Europe
Japan	2.90	14	73.58	Asia
Finland	2.81	16	69.81	Europe
Sweden	2.71	17	67.92	Europe
Denmark	2.63	18	66.04	Europe
USA	2.52	19	64.15	North America
Philippines	2.33	20	62.26	Asia
Indonesia	1.84	22	58.49	Asia
China	1.13	25	52.83	Asia
Pakistan	1.11	26	50.94	the Middle East
India	1.00	27	49.06	Asia
Germany	0.76	28	47.17	Europe
Canada	0.71	29	45.28	North America
France	0.70	30	43.40	Europe
Austria	0.69	31	41.51	Europe
Belgium	0.65	32	39.62	Europe
Italy	0.63	33	37.74	Europe
Netherlands	0.63	34	35.85	Europe
Australia	0.58	35	33.96	Oceania
New Zealand	0.28	36	32.08	Oceania
Hong Kong	0.28	37	30.19	Asia
Spain	0.25	38	28.30	Europe
Israel	0.23	39	26.42	the Middle East
Ireland	0.23	40	24.53	Europe
Taiwan	0.19	41	22.64	Asia
Portugal	0.17	42	20.75	Europe
Greece	0.16	43	18.87	Europe
Czech Republic	0.14	44	16.98	Europe
Argentina	0.13	45	15.09	Latin America
South Korea	0.13	46	13.21	Asia
Russian Federation	0.11	48	9.43	Europe
Hungary	0.10	49	7.55	Europe
Poland	0.08	50	5.66	Europe
Turkey	0.07	51	3.77	the Middle East
Mexico	0.07	52	1.89	Latin America

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Total Inventories
(Air and Water Resource and Solid Waste Management)

Countries in Asia	Value (total assets = 100)	Rank	Percentile
Singapore	8.21	1	96.15
Malaysia	8.01	2	92.31
Thailand	5.24	3	88.46
Mongolia	4.68	4	84.62
North Korea	3.76	5	80.77
Brunei	3.24	6	76.92
Japan	2.90	7	73.08
Papua New Guinea	2.63	8	69.23
Burma	2.34	9	65.38
Philippines	2.33	10	61.54
Indonesia	1.84	11	57.69
Maldives	1.68	12	53.85
Sri Lanka	1.32	13	50.00
China	1.13	14	46.15
India	1.00	15	42.31
Cambodia	0.76	16	38.46
Laos	0.73	17	34.62
Vietnam	0.66	18	30.77
Bangladesh	0.57	19	26.92
Bhutan	0.54	20	23.08
Nepal	0.48	21	19.23
Hong Kong	0.28	22	15.38
Taiwan	0.19	23	11.54
Macau	0.13	24	7.69
South Korea	0.13	25	3.85
Seychelles	0.11	26	0.00

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Current Assets - Total

Countries	Value (total assets = 100)	Rank	Percentile	Region
Norway	93.00	1	98.11	Europe
Switzerland	70.22	2	96.23	Europe
Malaysia	69.06	3	94.34	Asia
South Africa	69.01	4	92.45	Africa
Brazil	62.53	5	90.57	Latin America
Luxembourg	60.73	6	88.68	Europe
Chile	59.50	7	86.79	Latin America
Japan	56.88	8	84.91	Asia
Finland	55.04	9	83.02	Europe
Sweden	53.05	10	81.13	Europe
Denmark	51.55	11	79.25	Europe
USA	49.46	12	77.36	North America
Thailand	45.22	13	75.47	Asia
Peru	33.41	16	69.81	Latin America
the United Kingdom	26.94	17	67.92	Europe
Singapore	26.61	18	66.04	Asia
Philippines	20.07	20	62.26	Asia
Indonesia	15.87	22	58.49	Asia
New Zealand	10.27	25	52.83	Oceania
Hong Kong	10.06	26	50.94	Asia
China	9.73	27	49.06	Asia
Pakistan	9.57	28	47.17	the Middle East
Spain	9.10	29	45.28	Europe
India	8.61	30	43.40	Asia
Israel	8.34	31	41.51	the Middle East
Ireland	8.27	32	39.62	Europe
Taiwan	6.89	33	37.74	Asia
Portugal	6.20	34	35.85	Europe
Greece	5.65	35	33.96	Europe
Czech Republic	5.03	36	32.08	Europe
Argentina	4.69	37	30.19	Latin America
South Korea	4.58	38	28.30	Asia
Germany	4.46	39	26.42	Europe
Canada	4.15	41	22.64	North America
Russian Federation	4.13	42	20.75	Europe
France	4.08	43	18.87	Europe
Austria	4.04	44	16.98	Europe
Belgium	3.84	45	15.09	Europe
Italy	3.71	46	13.21	Europe
Hungary	3.71	47	11.32	Europe
Netherlands	3.67	48	9.43	Europe
Australia	3.40	49	7.55	Oceania
Poland	3.03	50	5.66	Europe
Turkey	2.53	51	3.77	the Middle East
Mexico	2.52	52	1.89	Latin America

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Current Assets - Total
(Air and Water Resource and Solid Waste Management)

Countries in Asia	Value (total assets = 100)	Rank	Percentile
Malaysia	69.06	1	96.15
Brunei	63.41	2	92.31
Japan	56.88	3	88.46
Thailand	45.22	4	84.62
Mongolia	40.34	5	80.77
North Korea	32.43	6	76.92
Singapore	26.61	7	73.08
Papua New Guinea	22.68	8	69.23
Burma	20.14	9	65.38
Philippines	20.07	10	61.54
Indonesia	15.87	11	57.69
Maldives	14.47	12	53.85
Sri Lanka	11.41	13	50.00
Hong Kong	10.06	14	46.15
China	9.73	15	42.31
India	8.61	16	38.46
Taiwan	6.89	17	34.62
Cambodia	6.53	18	30.77
Laos	6.30	19	26.92
Vietnam	5.72	20	23.08
Bangladesh	4.90	21	19.23
Bhutan	4.67	22	15.38
Macau	4.62	23	11.54
South Korea	4.58	24	7.69
Nepal	4.18	25	3.85
Seychelles	3.85	26	0.00

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Property Plant and Equipment - Net

Countries	Value (total assets = 100)	Rank	Percentile	Region
Germany	95.30	1	98.11	Europe
Canada	88.63	2	96.23	North America
France	87.16	3	94.34	Europe
Austria	86.22	4	92.45	Europe
Belgium	81.98	5	90.57	Europe
Italy	79.21	6	88.68	Europe
Netherlands	78.32	7	86.79	Europe
Australia	72.59	8	84.91	Oceania
the United Kingdom	70.15	9	83.02	Europe
Singapore	69.30	10	81.13	Asia
New Zealand	50.48	11	79.25	Oceania
Hong Kong	49.46	12	77.36	Asia
Norway	48.16	13	75.47	Europe
Spain	44.72	14	73.58	Europe
Israel	40.99	15	71.70	the Middle East
Ireland	40.65	16	69.81	Europe
Switzerland	36.36	17	67.92	Europe
Taiwan	33.88	18	66.04	Asia
Luxembourg	31.45	19	64.15	Europe
Portugal	30.49	20	62.26	Europe
Japan	29.46	21	60.38	Asia
Malaysia	28.56	22	58.49	Asia
South Africa	28.54	23	56.60	Africa
Finland	28.50	24	54.72	Europe
Greece	27.78	25	52.83	Europe
Sweden	27.47	26	50.94	Europe
Denmark	26.70	27	49.06	Europe
Brazil	25.86	28	47.17	Latin America
USA	25.61	29	45.28	North America
Czech Republic	24.73	30	43.40	Europe
Chile	24.61	31	41.51	Latin America
Argentina	23.04	32	39.62	Latin America
South Korea	22.51	33	37.74	Asia
Russian Federation	20.29	35	33.96	Europe
Thailand	18.70	36	32.08	Asia
Hungary	18.23	37	30.19	Europe
Poland	14.91	39	26.42	Europe
Peru	13.82	41	22.64	Latin America
Turkey	12.43	42	20.75	the Middle East
Mexico	12.40	43	18.87	Latin America
Philippines	8.30	46	13.21	Asia
Indonesia	6.56	48	9.43	Asia
China	4.02	51	3.77	Asia
Pakistan	3.96	52	1.89	the Middle East
India	3.56	53	0.00	Asia

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Property Plant and Equipment - Net
(Air and Water Resource and Solid Waste Management)

Countries in Asia	Value (total assets = 100)	Rank	Percentile
Singapore	69.30	1	96.15
Hong Kong	49.46	2	92.31
Taiwan	33.88	3	88.46
Brunei	32.84	4	84.62
Japan	29.46	5	80.77
Malaysia	28.56	6	76.92
Macau	22.70	7	73.08
South Korea	22.51	8	69.23
Seychelles	18.93	9	65.38
Thailand	18.70	10	61.54
Mongolia	16.68	11	57.69
North Korea	13.41	12	53.85
Papua New Guinea	9.38	13	50.00
Burma	8.33	14	46.15
Philippines	8.30	15	42.31
Indonesia	6.56	16	38.46
Maldives	5.98	17	34.62
Sri Lanka	4.72	18	30.77
China	4.02	19	26.92
India	3.56	20	23.08
Cambodia	2.70	21	19.23
Laos	2.61	22	15.38
Vietnam	2.36	23	11.54
Bangladesh	2.03	24	7.69
Bhutan	1.93	25	3.85
Nepal	1.73	26	0.00

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

3.3 FINANCIAL RETURNS IN TAIWAN: LIABILITY STRUCTURE RATIOS

3.3.1 Overview

In this chapter we consider the liability structure of firms operating in Taiwan benchmarked against global averages. The chapter begins by defining relevant terms. A common-size statement, or vertical analysis of liabilities and shareholder equity is then presented for the proto-typical firm operating in Taiwan and the average global benchmarks (sometimes referred to as a financial “gap” analysis). The figure reflect firms involved in air and water resource and solid waste management in Taiwan. For ratios where there are large deviations between Taiwan and the benchmarks, graphics are provided (total liabilities and equity = 100 percent). Then the distribution of ratios is presented in the form of ranks and percentiles. Certain key vertical analysis liability ratios are highlighted.

3.3.2 Liabilities and Equity – Definitions of Terms

The following definitions are provided for those less familiar with the liability-side of financial statement analysis. As this chapter deals with the vertical analysis and global benchmarking of liabilities and equity, only definitions covering certain terms used in this chapter’s tables and graphs are provided here. The glossary below reflects commonly accepted definitions across various countries and official sources.

- **Common Equity.** Common equity is defined to equal the company's net worth. It typically comprises capital stock, capital surplus, retained earnings, and, in some cases, net worth reserves. Common equity is the portion of total net worth belonging to the common stockholders. Synonyms which are often used for common equity are “common stock” and “net worth”.
- **Current Liabilities - Total.** Total current liabilities are defined as the total amount of obligations which would require the use of current assets or other current liabilities to pay.
- **Current Portion of Long Term Debt.** The current proportion of long term debt is typically defined as debt which is payable in more than one year.
- **Deferred Taxes.** Deferred taxes are compulsory charges from a previous accounting period which are yet unpaid.
- **Long Term Debt.** Long-term debt is defined to be due in a period exceeding one year or one operating cycle, whichever is longer. Long-term debt can have an extended repayment period such as a many-year mortgage on land and buildings, or debt that's intended to be permanent such as bonds issued to investors.
- **Long Term Debt Excluding Capitalized Leases.** Long term debt excluding capitalized leases is defined as debt which is typically due in a period exceeding one year or one operating cycle, whichever is longer, less capitalized leases (see Long Term Debt for exceptions). Capital leases are generally recorded as assets with liability at the current value of the lease payment.
- **Retained Earnings.** Retained earnings is an equity account reflecting the accumulated earnings of proprietary funds.
- **Shareholders Equity.** Shareholders equity is commonly defined to be the amount of total equity reserved for common and preferred shareholders.

- **Short Term Debt.** Short term debt is generally defined as debt payable within one year.
- **Total Liabilities.** Total liabilities are generally defined to include all the claims against a corporation. Liabilities include accounts and wages and salaries payable, dividends declared payable, accrued taxes payable, fixed or long-term liabilities such as mortgage bonds, debentures, and bank loans.

3.3.3 Liability Structure: Outlook

Using the methodology described in the introduction, the following table summarizes liability and equity structure benchmarks for firms involved in air and water resource and solid waste management in Taiwan. To allow comparable benchmarking, a common index of Total Liabilities & Shareholders Equity = 100 is used. All figures are current-year projections for companies operating in Taiwan based on latest financial results available.

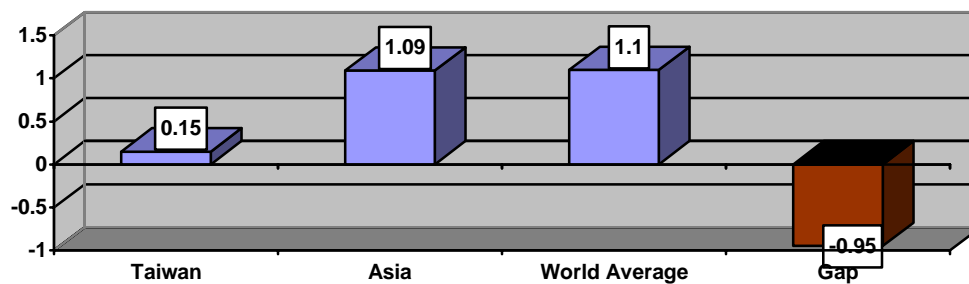
Liability Structure	Taiwan	Asia	World Avg.
Short Term Debt & Current Portion of Long Term Debt	0.15	1.09	1.10
Other Current Liabilities	2.59	5.31	4.42
Current Liabilities - Total	6.40	10.09	8.19
Long Term Debt	12.90	4.68	4.32
Long Term Debt Excluding Capitalized Leases	12.90	4.08	3.94
Deferred Taxes	3.38	0.73	0.38
Total Liabilities	24.06	17.04	14.05
Common Equity	43.05	25.83	20.16
Retained Earnings	10.60	4.85	3.47
Total Liabilities & Shareholders Equity	100.00	100.00	100.00

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

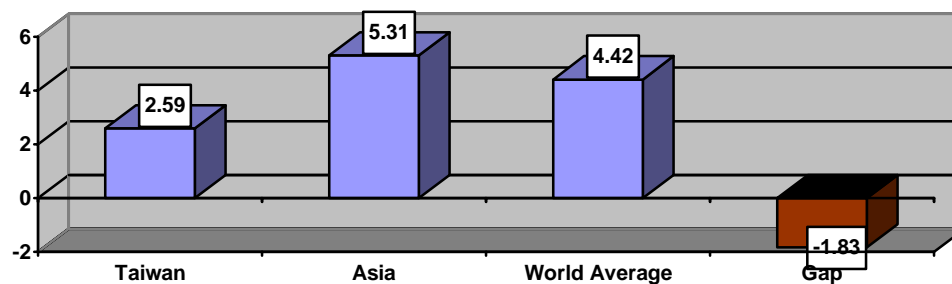
3.3.4 Large Variances: Liabilities

The following graphics summarize for air and water resource and solid waste management the large liability structure gaps between firms operating in Taiwan and the world average. A gap cannot necessarily be interpreted as a positive or negative reflection on performance. Gaps may signal areas of specialization, market focus, or expertise. More contextual information is required to fully interpret these gaps. The gaps highlighted here are simply those that are large.

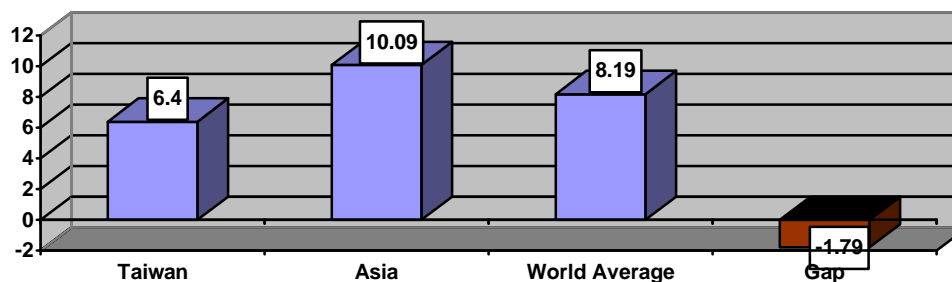
Gap: Short Term Debt & Current Portion of Long Term Debt

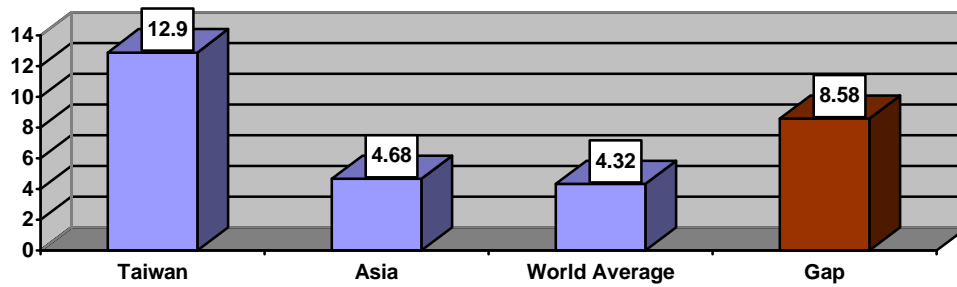
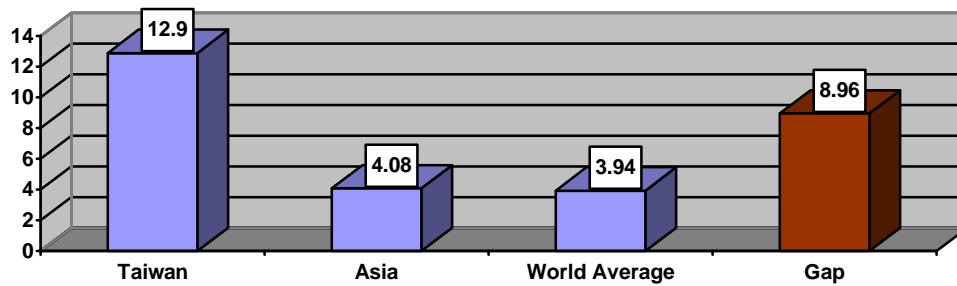
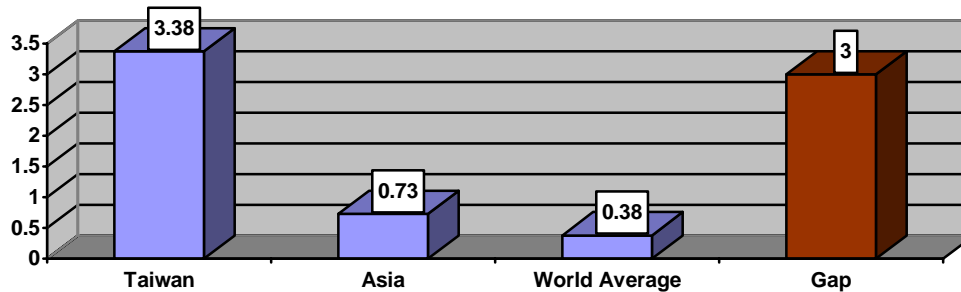
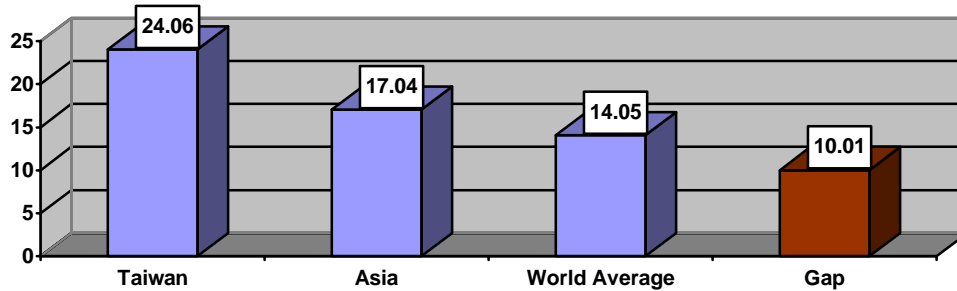


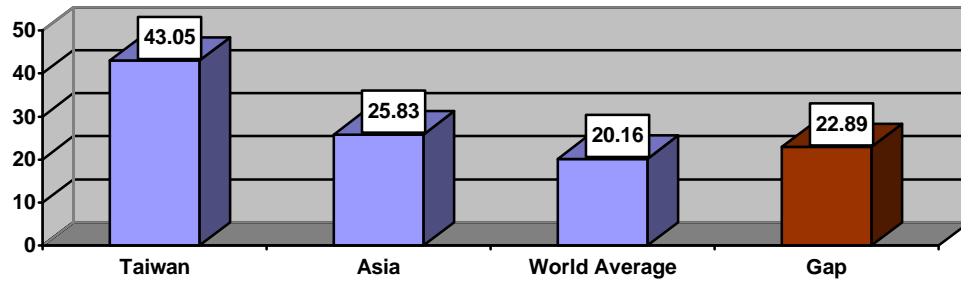
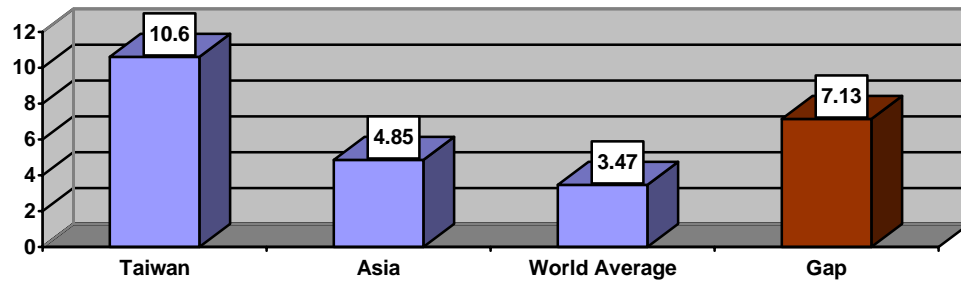
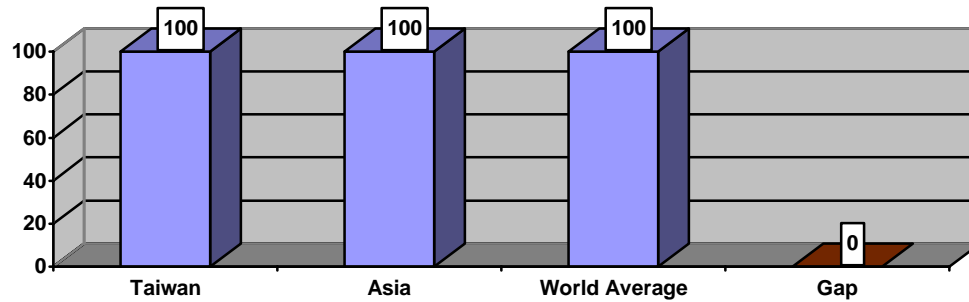
Gap: Other Current Liabilities



Gap: Current Liabilities - Total



Gap: Long Term Debt**Gap: Long Term Debt Excluding Capitalized Leases****Gap: Deferred Taxes****Gap: Total Liabilities**

Gap: Common Equity**Gap: Retained Earnings****Gap: Total Liabilities & Shareholders Equity**

3.3.5 Key Percentiles and Rankings

We now consider the distribution of liability ratios for air and water resource and solid waste management using ranks and percentiles. What percent of countries have a value lower or higher than Taiwan (what is the ratio's rank or percentile)? The table below answers this question with respect to the vertical analysis of liability. The ranks and percentiles indicate, from highest to lowest, where a value falls within the distribution of all countries considered in the global benchmark (the number of countries in the benchmark per line item may vary, as indicated in the Rank). Again, a high or low figure does not necessarily indicate good or bad performance. After the summary table below, a few key vertical liability ratios are highlighted in additional tables.

Liability Structure	Taiwan	Rank of Total	Percentile
Short Term Debt & Current Portion of Long Term Debt	0.15	41 of 53	22.64
Other Current Liabilities	2.59	38 of 53	28.30
Current Liabilities - Total	6.40	35 of 53	33.96
Long Term Debt	12.90	18 of 53	66.04
Long Term Debt Excluding Capitalized Leases	12.90	18 of 53	66.04
Deferred Taxes	3.38	6 of 53	88.68
Total Liabilities	24.06	28 of 53	47.17
Common Equity	43.05	17 of 53	67.92
Retained Earnings	10.60	14 of 53	73.58
Total Liabilities & Shareholders Equity	100.00		

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Current Liabilities - Total

Countries	Value (total liabilities & equity = 100)	Rank	Percentile	Region
Norway	58.92	1	98.11	Europe
Switzerland	44.48	2	96.23	Europe
Luxembourg	38.47	3	94.34	Europe
Japan	36.04	4	92.45	Asia
Finland	34.87	5	90.57	Europe
Sweden	33.61	6	88.68	Europe
Denmark	32.66	7	86.79	Europe
USA	31.33	8	84.91	North America
Malaysia	27.47	9	83.02	Asia
South Africa	27.45	10	81.13	Africa
Brazil	24.87	11	79.25	Latin America
Chile	23.67	12	77.36	Latin America
the United Kingdom	22.32	13	75.47	Europe
Singapore	22.05	14	73.58	Asia
Thailand	17.99	15	71.70	Asia
Peru	13.29	18	66.04	Latin America
Germany	12.14	19	64.15	Europe
Canada	11.29	20	62.26	North America
France	11.10	21	60.38	Europe
Austria	10.98	22	58.49	Europe
Belgium	10.44	23	56.60	Europe
Italy	10.09	24	54.72	Europe
Netherlands	9.98	25	52.83	Europe
New Zealand	9.53	27	49.06	Oceania
Hong Kong	9.34	28	47.17	Asia
Australia	9.25	29	45.28	Oceania
Spain	8.44	30	43.40	Europe
Philippines	7.98	31	41.51	Asia
Israel	7.74	32	39.62	the Middle East
Ireland	7.68	33	37.74	Europe
Taiwan	6.40	35	33.96	Asia
Indonesia	6.31	36	32.08	Asia
Portugal	5.76	38	28.30	Europe
Greece	5.25	39	26.42	Europe
Czech Republic	4.67	40	24.53	Europe
Argentina	4.35	42	20.75	Latin America
South Korea	4.25	43	18.87	Asia
China	3.87	45	15.09	Asia
Russian Federation	3.83	46	13.21	Europe
Pakistan	3.81	47	11.32	the Middle East
Hungary	3.44	48	9.43	Europe
India	3.42	49	7.55	Asia
Poland	2.81	50	5.66	Europe
Turkey	2.35	51	3.77	the Middle East
Mexico	2.34	52	1.89	Latin America

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Current Liabilities - Total
(Air and Water Resource and Solid Waste Management)

Countries in Asia	Value (total liabilities & equity = 100)	Rank	Percentile
Brunei	40.17	1	96.15
Japan	36.04	2	92.31
Malaysia	27.47	3	88.46
Singapore	22.05	4	84.62
Thailand	17.99	5	80.77
Mongolia	16.05	6	76.92
North Korea	12.90	7	73.08
Hong Kong	9.34	8	69.23
Papua New Guinea	9.02	9	65.38
Burma	8.01	10	61.54
Philippines	7.98	11	57.69
Taiwan	6.40	12	53.85
Indonesia	6.31	13	50.00
Maldives	5.75	14	46.15
Sri Lanka	4.54	15	42.31
Macau	4.29	16	38.46
South Korea	4.25	17	34.62
China	3.87	18	30.77
Seychelles	3.57	19	26.92
India	3.42	20	23.08
Cambodia	2.60	21	19.23
Laos	2.51	22	15.38
Vietnam	2.27	23	11.54
Bangladesh	1.95	24	7.69
Bhutan	1.86	25	3.85
Nepal	1.66	26	0.00

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Long Term Debt

Countries	Value (total liabilities & equity = 100)	Rank	Percentile	Region
Germany	41.66	1	98.11	Europe
Canada	38.74	2	96.23	North America
France	38.10	3	94.34	Europe
Austria	37.68	4	92.45	Europe
Belgium	35.83	5	90.57	Europe
Italy	34.62	6	88.68	Europe
Netherlands	34.23	7	86.79	Europe
Australia	31.73	8	84.91	Oceania
the United Kingdom	29.97	9	83.02	Europe
Singapore	29.60	10	81.13	Asia
New Zealand	19.22	11	79.25	Oceania
Norway	18.89	12	77.36	Europe
Hong Kong	18.83	13	75.47	Asia
Spain	17.03	14	73.58	Europe
Israel	15.61	15	71.70	the Middle East
Ireland	15.48	16	69.81	Europe
Switzerland	14.26	17	67.92	Europe
Taiwan	12.90	18	66.04	Asia
Luxembourg	12.34	19	64.15	Europe
Portugal	11.61	20	62.26	Europe
Japan	11.55	21	60.38	Asia
Finland	11.18	22	58.49	Europe
Sweden	10.78	23	56.60	Europe
Greece	10.58	24	54.72	Europe
Denmark	10.47	25	52.83	Europe
USA	10.05	26	50.94	North America
Czech Republic	9.42	27	49.06	Europe
Argentina	8.77	28	47.17	Latin America
South Korea	8.57	29	45.28	Asia
Russian Federation	7.72	31	41.51	Europe
Hungary	6.94	32	39.62	Europe
Poland	5.68	33	37.74	Europe
Turkey	4.73	34	35.85	the Middle East
Mexico	4.72	35	33.96	Latin America
Malaysia	2.32	37	30.19	Asia
South Africa	2.32	38	28.30	Africa
Brazil	2.10	39	26.42	Latin America
Chile	2.00	40	24.53	Latin America
Thailand	1.52	41	22.64	Asia
Peru	1.12	44	16.98	Latin America
Philippines	0.67	46	13.21	Asia
Indonesia	0.53	48	9.43	Asia
China	0.33	51	3.77	Asia
Pakistan	0.32	52	1.89	the Middle East
India	0.29	53	0.00	Asia

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Long Term Debt (Air and Water Resource and Solid Waste Management)

Countries in Asia	Value (total liabilities & equity = 100)	Rank	Percentile
Singapore	29.60	1	96.15
Hong Kong	18.83	2	92.31
Taiwan	12.90	3	88.46
Brunei	12.88	4	84.62
Japan	11.55	5	80.77
Macau	8.64	6	76.92
South Korea	8.57	7	73.08
Seychelles	7.21	8	69.23
Malaysia	2.32	9	65.38
Thailand	1.52	10	61.54
Mongolia	1.35	11	57.69
North Korea	1.09	12	53.85
Papua New Guinea	0.76	13	50.00
Burma	0.68	14	46.15
Philippines	0.67	15	42.31
Indonesia	0.53	16	38.46
Maldives	0.49	17	34.62
Sri Lanka	0.38	18	30.77
China	0.33	19	26.92
India	0.29	20	23.08
Cambodia	0.22	21	19.23
Laos	0.21	22	15.38
Vietnam	0.19	23	11.54
Bangladesh	0.16	24	7.69
Bhutan	0.16	25	3.85
Nepal	0.14	26	0.00

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Total Liabilities

Countries	Value (total liabilities & equity = 100)	Rank	Percentile	Region
Norway	102.93	1	98.11	Europe
Switzerland	77.71	2	96.23	Europe
Luxembourg	67.21	3	94.34	Europe
Japan	62.95	4	92.45	Asia
Finland	60.91	5	90.57	Europe
Sweden	58.72	6	88.68	Europe
the United Kingdom	57.07	7	86.79	Europe
Denmark	57.05	8	84.91	Europe
Singapore	56.38	9	83.02	Asia
USA	54.74	10	81.13	North America
Germany	54.73	11	79.25	Europe
Canada	50.90	12	77.36	North America
France	50.06	13	75.47	Europe
Austria	49.51	14	73.58	Europe
Belgium	47.08	15	71.70	Europe
Italy	45.49	16	69.81	Europe
Netherlands	44.98	17	67.92	Europe
Australia	41.69	18	66.04	Oceania
New Zealand	35.85	19	64.15	Oceania
Hong Kong	35.13	20	62.26	Asia
Spain	31.76	21	60.38	Europe
Malaysia	30.04	22	58.49	Asia
South Africa	30.02	23	56.60	Africa
Israel	29.11	24	54.72	the Middle East
Ireland	28.87	25	52.83	Europe
Brazil	27.19	26	50.94	Latin America
Chile	25.88	27	49.06	Latin America
Taiwan	24.06	28	47.17	Asia
Portugal	21.65	29	45.28	Europe
Greece	19.73	30	43.40	Europe
Thailand	19.67	31	41.51	Asia
Czech Republic	17.56	32	39.62	Europe
Argentina	16.36	34	35.85	Latin America
South Korea	15.99	35	33.96	Asia
Peru	14.53	38	28.30	Latin America
Russian Federation	14.41	39	26.42	Europe
Hungary	12.94	40	24.53	Europe
Poland	10.59	42	20.75	Europe
Turkey	8.83	43	18.87	the Middle East
Mexico	8.81	44	16.98	Latin America
Philippines	8.73	45	15.09	Asia
Indonesia	6.90	48	9.43	Asia
China	4.23	51	3.77	Asia
Pakistan	4.16	52	1.89	the Middle East
India	3.74	53	0.00	Asia

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Total Liabilities
(Air and Water Resource and Solid Waste Management)

Countries in Asia	Value (total liabilities & equity = 100)	Rank	Percentile
Brunei	70.18	1	96.15
Japan	62.95	2	92.31
Singapore	56.38	3	88.46
Hong Kong	35.13	4	84.62
Malaysia	30.04	5	80.77
Taiwan	24.06	6	76.92
Thailand	19.67	7	73.08
Mongolia	17.54	8	69.23
Macau	16.12	9	65.38
South Korea	15.99	10	61.54
North Korea	14.10	11	57.69
Seychelles	13.44	12	53.85
Papua New Guinea	9.86	13	50.00
Burma	8.76	14	46.15
Philippines	8.73	15	42.31
Indonesia	6.90	16	38.46
Maldives	6.29	17	34.62
Sri Lanka	4.96	18	30.77
China	4.23	19	26.92
India	3.74	20	23.08
Cambodia	2.84	21	19.23
Laos	2.74	22	15.38
Vietnam	2.49	23	11.54
Bangladesh	2.13	24	7.69
Bhutan	2.03	25	3.85
Nepal	1.82	26	0.00

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Common Equity

Countries	Value (total liabilities & equity = 100)	Rank	Percentile	Region
Norway	76.06	1	98.11	Europe
Malaysia	69.26	2	96.23	Asia
South Africa	69.22	3	94.34	Africa
New Zealand	64.15	4	92.45	Oceania
Hong Kong	62.86	5	90.57	Asia
Brazil	62.71	6	88.68	Latin America
Chile	59.67	7	86.79	Latin America
Switzerland	57.43	8	84.91	Europe
Spain	56.83	9	83.02	Europe
Israel	52.10	10	81.13	the Middle East
Ireland	51.67	11	79.25	Europe
Luxembourg	49.67	12	77.36	Europe
Japan	46.52	13	75.47	Asia
Thailand	45.35	14	73.58	Asia
Finland	45.02	15	71.70	Europe
Sweden	43.39	16	69.81	Europe
Taiwan	43.05	17	67.92	Asia
the United Kingdom	42.90	18	66.04	Europe
Singapore	42.39	19	64.15	Asia
Denmark	42.16	20	62.26	Europe
USA	40.45	21	60.38	North America
Portugal	38.75	22	58.49	Europe
Germany	37.83	24	54.72	Europe
Greece	35.30	25	52.83	Europe
Canada	35.18	26	50.94	North America
France	34.60	28	47.17	Europe
Austria	34.23	29	45.28	Europe
Peru	33.51	30	43.40	Latin America
Belgium	32.54	31	41.51	Europe
Italy	31.44	32	39.62	Europe
Czech Republic	31.43	33	37.74	Europe
Netherlands	31.09	34	35.85	Europe
Argentina	29.28	35	33.96	Latin America
Australia	28.81	36	32.08	Oceania
South Korea	28.61	37	30.19	Asia
Russian Federation	25.78	39	26.42	Europe
Hungary	23.16	41	22.64	Europe
Philippines	20.12	42	20.75	Asia
Poland	18.94	43	18.87	Europe
Indonesia	15.91	45	15.09	Asia
Turkey	15.80	46	13.21	the Middle East
Mexico	15.76	47	11.32	Latin America
China	9.76	51	3.77	Asia
Pakistan	9.59	52	1.89	the Middle East
India	8.63	53	0.00	Asia

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Common Equity
(Air and Water Resource and Solid Waste Management)

Countries in Asia	Value (total liabilities & equity = 100)	Rank	Percentile
Malaysia	69.26	1	96.15
Hong Kong	62.86	2	92.31
Brunei	51.86	3	88.46
Japan	46.52	4	84.62
Thailand	45.35	5	80.77
Taiwan	43.05	6	76.92
Singapore	42.39	7	73.08
Mongolia	40.46	8	69.23
North Korea	32.53	9	65.38
Macau	28.85	10	61.54
South Korea	28.61	11	57.69
Seychelles	24.06	12	53.85
Papua New Guinea	22.74	13	50.00
Burma	20.19	14	46.15
Philippines	20.12	15	42.31
Indonesia	15.91	16	38.46
Maldives	14.51	17	34.62
Sri Lanka	11.44	18	30.77
China	9.76	19	26.92
India	8.63	20	23.08
Cambodia	6.55	21	19.23
Laos	6.32	22	15.38
Vietnam	5.73	23	11.54
Bangladesh	4.91	24	7.69
Bhutan	4.68	25	3.85
Nepal	4.19	26	0.00

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Retained Earnings

Countries	Value (total liabilities & equity = 100)	Rank	Percentile	Region
Norway	32.29	1	98.11	Europe
Switzerland	24.38	2	96.23	Europe
Luxembourg	21.09	3	94.34	Europe
Japan	19.75	4	92.45	Asia
Finland	19.11	5	90.57	Europe
Sweden	18.42	6	88.68	Europe
Denmark	17.90	7	86.79	Europe
USA	17.17	8	84.91	North America
New Zealand	15.80	9	83.02	Oceania
Hong Kong	15.48	10	81.13	Asia
Spain	14.00	11	79.25	Europe
Israel	12.83	12	77.36	the Middle East
Ireland	12.72	13	75.47	Europe
Taiwan	10.60	14	73.58	Asia
Portugal	9.54	15	71.70	Europe
Greece	8.69	16	69.81	Europe
Czech Republic	7.74	17	67.92	Europe
Argentina	7.21	18	66.04	Latin America
South Korea	7.05	19	64.15	Asia
the United Kingdom	6.85	20	62.26	Europe
Singapore	6.76	21	60.38	Asia
Russian Federation	6.35	23	56.60	Europe
Malaysia	6.33	24	54.72	Asia
South Africa	6.32	25	52.83	Africa
Brazil	5.73	26	50.94	Latin America
Hungary	5.70	27	49.06	Europe
Chile	5.45	28	47.17	Latin America
Poland	4.67	29	45.28	Europe
Thailand	4.14	30	43.40	Asia
Turkey	3.89	31	41.51	the Middle East
Mexico	3.88	32	39.62	Latin America
Germany	3.53	34	35.85	Europe
Canada	3.28	36	32.08	North America
France	3.23	37	30.19	Europe
Austria	3.19	39	26.42	Europe
Peru	3.06	40	24.53	Latin America
Belgium	3.04	41	22.64	Europe
Italy	2.93	42	20.75	Europe
Netherlands	2.90	43	18.87	Europe
Australia	2.69	44	16.98	Oceania
Philippines	1.84	46	13.21	Asia
Indonesia	1.45	48	9.43	Asia
China	0.89	51	3.77	Asia
Pakistan	0.88	52	1.89	the Middle East
India	0.79	53	0.00	Asia

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Retained Earnings
(Air and Water Resource and Solid Waste Management)

Countries in Asia	Value (total liabilities & equity = 100)	Rank	Percentile
Brunei	22.02	1	96.15
Japan	19.75	2	92.31
Hong Kong	15.48	3	88.46
Taiwan	10.60	4	84.62
Macau	7.10	5	80.77
South Korea	7.05	6	76.92
Singapore	6.76	7	73.08
Malaysia	6.33	8	69.23
Seychelles	5.92	9	65.38
Thailand	4.14	10	61.54
Mongolia	3.70	11	57.69
North Korea	2.97	12	53.85
Papua New Guinea	2.08	13	50.00
Burma	1.84	14	46.15
Philippines	1.84	15	42.31
Indonesia	1.45	16	38.46
Maldives	1.33	17	34.62
Sri Lanka	1.05	18	30.77
China	0.89	19	26.92
India	0.79	20	23.08
Cambodia	0.60	21	19.23
Laos	0.58	22	15.38
Vietnam	0.52	23	11.54
Bangladesh	0.45	24	7.69
Bhutan	0.43	25	3.85
Nepal	0.38	26	0.00

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

3.4 FINANCIAL RETURNS IN TAIWAN: INCOME STRUCTURE RATIOS

3.4.1 Overview

In this chapter we consider the income structure of companies operating in Taiwan benchmarked against global averages. The chapter begins by defining relevant terms. A common-size statement, or vertical analysis of income is then presented for the proto-typical firm involved in air and water resource and solid waste management operating in Taiwan and the average global benchmarks (total revenue = 100 percent). For ratios where there are large deviations between Taiwan and the benchmarks, graphics are provided. Then the distribution of ratios is presented in the form of ranks and percentiles. Certain key vertical analysis income ratios are highlighted across countries in the comparison group.

3.4.2 Income Statements – Definitions of Terms

The following definitions are provided for those less familiar with the income-side of financial statement analysis. As this chapter deals with the vertical analysis and global benchmarking of income, only definitions covering certain terms used in this chapter's tables and graphs are provided here. The glossary below reflects commonly accepted definitions across various countries and official sources.

- **Amortization.** Amortization generally refers to the depreciation, depletion, or charge-off to expense of intangible and tangible assets over a period of time. Amortization is commonly understood to be the taking as an expense (writing off) of the loss of value of an intangible asset such as a copyright, a patent, or a mailing list, in an accounting period.
- **Depletion.** Depletion is commonly defined to be included as one of the elements of amortization, and is understood to be the portion of the carrying value (other than the portion associated with tangible assets) prorated in each accounting period for financial reporting purposes.
- **Depreciation.** Depreciation generally is defined as the expiration in the service life of fixed assets, other than depletable assets, attributable to wear and tear, deterioration, action of the physical elements, inadequacy and obsolescence. Depreciation is commonly defined as the portion of the cost of a fixed asset charged as an expense during a particular period. In accounting for depreciation, the cost of a fixed asset, less any salvage value, is prorated over the estimated service life of such an asset, and each period is charged with a portion of such cost. Through this process, the cost of the asset is ultimately charged off as an expense.
- **Earnings Before Interest and Taxes (EBIT).** EBIT is a financial measure defined as revenues less cost of goods sold and selling, general, and administrative expenses. In other words, operating and non-operating profit before the deduction of interest and income taxes.
- **Interest Expense on Debt.** Interest expenses on debt are those which are spent on current debt and added to the net income so avoid underestimating interest coverage.
- **Net Income Available to Common.** Net income available to common is defined as the net income available to common stockholders.

-
- **Net Income Before Preferred Dividends.** Net income before preferred dividends is generally calculated as the difference between total revenues and total expense prior to the granting of preferred dividends.
 - **Net Sales or Revenues.** Revenues or net sales are defined as payments made to and received by an entity. May take the form of taxes, user fees, fines, fees for service, and so on.
 - **Operating Income.** Operating income is generally defined to equal operating revenues less operating expenses. It typically excludes items of other revenue and expense such as equity in earnings of unconsolidated companies, dividends, interest income and expense, income taxes, extraordinary items, and cumulative effect of accounting changes.
 - **Pretax Income.** Pretax income is generally defined as income before tax deductions.

3.4.3 Income Structure: Outlook

Using the methodology described in the introduction, the following table summarizes income structure benchmarks for firms involved in air and water resource and solid waste management in Taiwan. To allow comparable benchmarking, a common index of Net Sales or Revenues = 100 is used. All figures are current-year projections for companies operating in Taiwan based on latest financial results available.

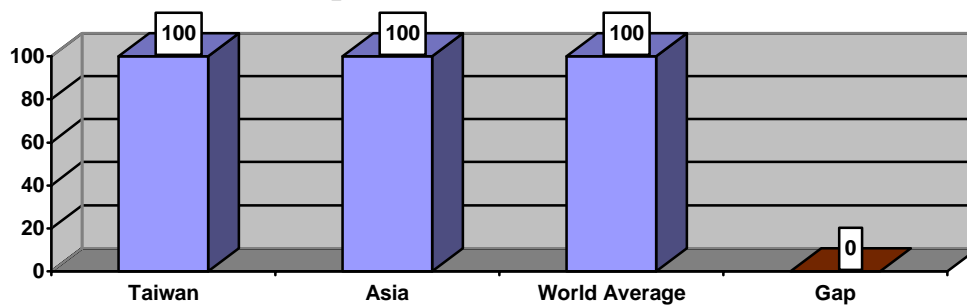
Income Structure	Taiwan	Asia	World Avg.
Net Sales or Revenues	100.00	100.00	100.00
Depreciation, Depletion & Amortization	9.15	2.89	2.48
Operating Income	12.07	6.09	4.51
Other Income/Expense Net	0.05	0.21	0.19
Earnings Before Interest and Taxes (EBIT)	12.13	6.44	4.82
Interest Expense on Debt	1.62	0.60	0.51
Pretax Income	10.51	5.85	4.32
Net Income Before Extra Items/Prefer Dividends	6.19	3.72	2.76
Net Income Before Preferred Dividends	6.19	3.72	2.76
Net Income Available to Common	6.19	3.72	2.76

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

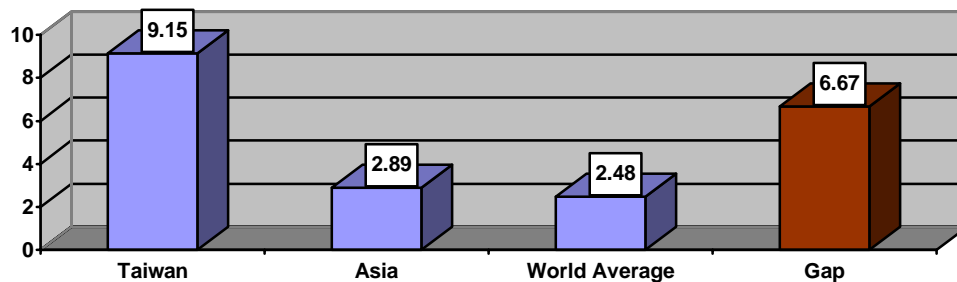
3.4.4 Large Variances: Income

The following graphics summarize for air and water resource and solid waste management the large income structure gaps between firms operating in Taiwan and the world average. A gap cannot necessarily be interpreted as a positive or negative reflection on performance. Gaps may signal areas of specialization, market focus, or expertise. More contextual information is required to fully interpret these gaps. The gaps highlighted here are simply those that are large.

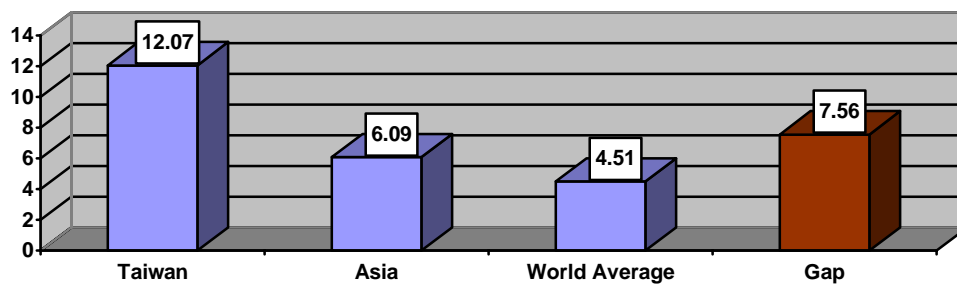
Gap: Net Sales or Revenues

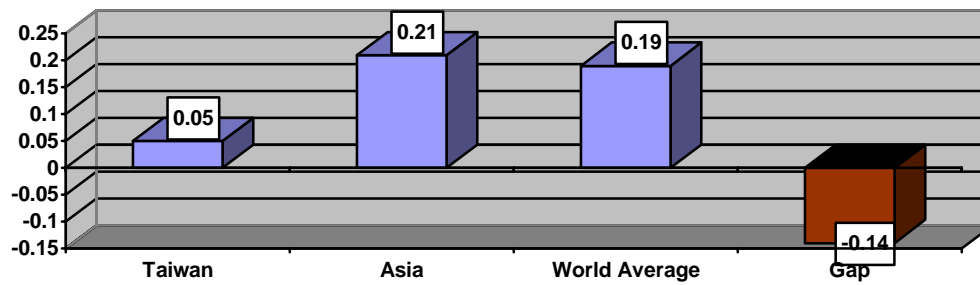
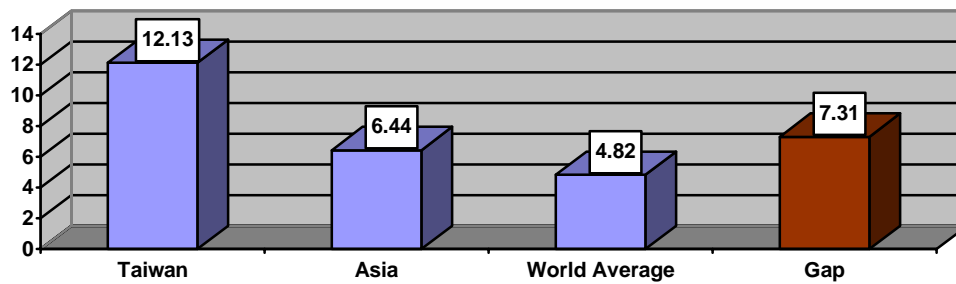
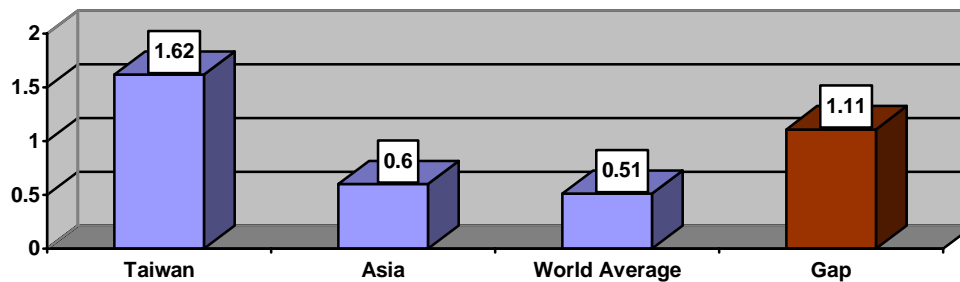
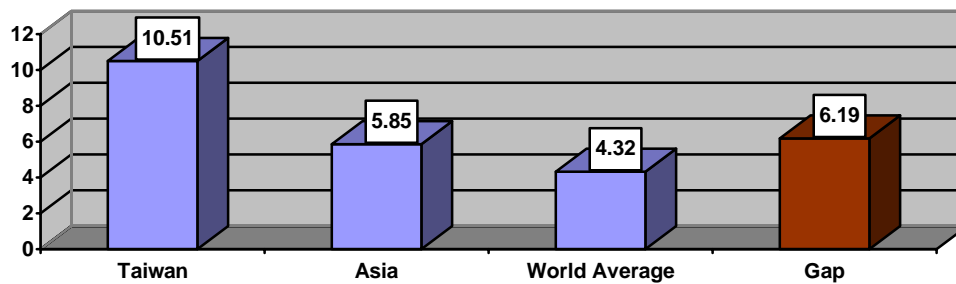


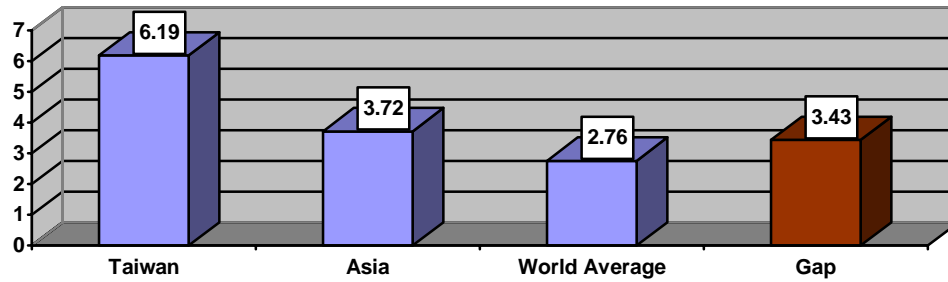
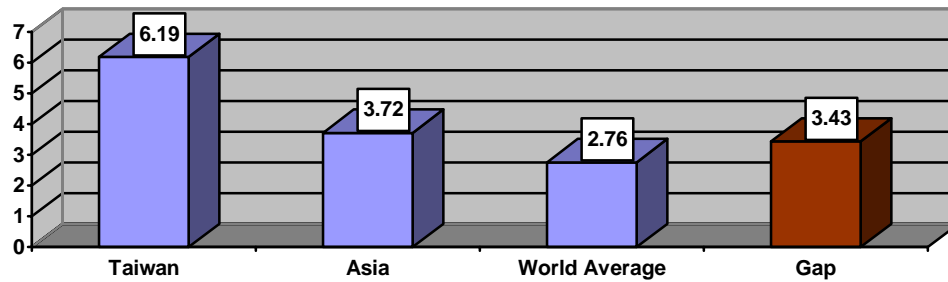
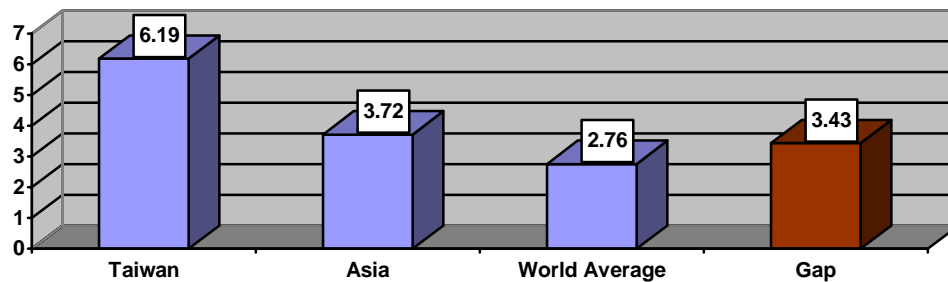
Gap: Depreciation, Depletion & Amortization



Gap: Operating Income



Gap: Other Income/Expense Net**Gap: Earnings Before Interest and Taxes (EBIT)****Gap: Interest Expense on Debt****Gap: Pretax Income**

Gap: Net Income Before Extra Items/Prefer Dividends**Gap: Net Income Before Preferred Dividends****Gap: Net Income Available to Common**

3.4.5 Key Percentiles and Rankings

We now consider the distribution of income ratios for air and water resource and solid waste management using ranks and percentiles. What percent of countries have a value lower or higher than Taiwan (what is the ratio's rank or percentile)? The table below answers this question with respect to the vertical analysis of income structure. The ranks and percentiles indicate, from highest to lowest, where a value falls within the distribution of all countries considered in the global benchmark (the number of countries in the benchmark per line item may vary, as indicated in the Rank). Again, a high or low figure does not necessarily indicate good or bad performance. After the summary table below, a few key vertical income ratios are highlighted in additional tables.

Income Structure	Taiwan	Rank of Total	Percentile
Net Sales or Revenues	100.00		
Depreciation, Depletion & Amortization	9.15	16 of 53	69.81
Operating Income	12.07	11 of 53	79.25
Other Income/Expense Net	0.05	33 of 53	37.74
Earnings Before Interest and Taxes (EBIT)	12.13	11 of 53	79.25
Interest Expense on Debt	1.62	17 of 53	67.92
Pretax Income	10.51	12 of 53	77.36
Net Income Before Extra Items/Prefer Dividends	6.19	13 of 53	75.47
Net Income Before Preferred Dividends	6.19	13 of 53	75.47
Net Income Available to Common	6.19	13 of 53	75.47

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Operating Income

Countries	Value (total revenue = 100)	Rank	Percentile	Region
New Zealand	17.98	1	98.11	Oceania
Hong Kong	17.62	2	96.23	Asia
Malaysia	16.16	3	94.34	Asia
South Africa	16.15	4	92.45	Africa
Spain	15.93	5	90.57	Europe
Brazil	14.63	6	88.68	Latin America
Israel	14.60	7	86.79	the Middle East
Ireland	14.48	8	84.91	Europe
Chile	13.92	9	83.02	Latin America
Norway	12.29	10	81.13	Europe
Taiwan	12.07	11	79.25	Asia
Portugal	10.86	12	77.36	Europe
Thailand	10.58	13	75.47	Asia
Greece	9.90	14	73.58	Europe
the United Kingdom	9.83	15	71.70	Europe
Singapore	9.71	16	69.81	Asia
Switzerland	9.28	17	67.92	Europe
Czech Republic	8.81	19	64.15	Europe
Argentina	8.21	20	62.26	Latin America
Luxembourg	8.03	22	58.49	Europe
South Korea	8.02	23	56.60	Asia
Peru	7.82	24	54.72	Latin America
Japan	7.52	25	52.83	Asia
Finland	7.28	27	49.06	Europe
Russian Federation	7.23	28	47.17	Europe
Sweden	7.01	29	45.28	Europe
Denmark	6.81	30	43.40	Europe
USA	6.54	31	41.51	North America
Hungary	6.49	32	39.62	Europe
Germany	5.53	34	35.85	Europe
Poland	5.31	35	33.96	Europe
Canada	5.14	36	32.08	North America
France	5.06	37	30.19	Europe
Austria	5.00	38	28.30	Europe
Belgium	4.76	39	26.42	Europe
Philippines	4.69	40	24.53	Asia
Italy	4.60	41	22.64	Europe
Netherlands	4.55	42	20.75	Europe
Turkey	4.43	43	18.87	the Middle East
Mexico	4.42	44	16.98	Latin America
Australia	4.21	45	15.09	Oceania
Indonesia	3.71	48	9.43	Asia
China	2.28	51	3.77	Asia
Pakistan	2.24	52	1.89	the Middle East
India	2.01	53	0.00	Asia

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Operating Income (Air and Water Resource and Solid Waste Management)

Countries in Asia	Value (total revenue = 100)	Rank	Percentile
Hong Kong	17.62	1	96.15
Malaysia	16.16	2	92.31
Taiwan	12.07	3	88.46
Thailand	10.58	4	84.62
Singapore	9.71	5	80.77
Mongolia	9.44	6	76.92
Brunei	8.38	7	73.08
Macau	8.09	8	69.23
South Korea	8.02	9	65.38
North Korea	7.59	10	61.54
Japan	7.52	11	57.69
Seychelles	6.74	12	53.85
Papua New Guinea	5.31	13	50.00
Burma	4.71	14	46.15
Philippines	4.69	15	42.31
Indonesia	3.71	16	38.46
Maldives	3.38	17	34.62
Sri Lanka	2.67	18	30.77
China	2.28	19	26.92
India	2.01	20	23.08
Cambodia	1.53	21	19.23
Laos	1.47	22	15.38
Vietnam	1.34	23	11.54
Bangladesh	1.15	24	7.69
Bhutan	1.09	25	3.85
Nepal	0.98	26	0.00

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Earnings Before Interest and Taxes (EBIT)

Countries	Value (total revenue = 100)	Rank	Percentile	Region
New Zealand	18.08	1	98.11	Oceania
Malaysia	17.84	2	96.23	Asia
South Africa	17.83	3	94.34	Africa
Hong Kong	17.72	4	92.45	Asia
Brazil	16.15	5	90.57	Latin America
Spain	16.02	6	88.68	Europe
Chile	15.37	7	86.79	Latin America
Israel	14.68	8	84.91	the Middle East
Ireland	14.56	9	83.02	Europe
Norway	12.57	10	81.13	Europe
Taiwan	12.13	11	79.25	Asia
Thailand	11.68	12	77.36	Asia
Portugal	10.92	13	75.47	Europe
the United Kingdom	10.11	14	73.58	Europe
Singapore	9.99	15	71.70	Asia
Greece	9.95	16	69.81	Europe
Switzerland	9.49	18	66.04	Europe
Czech Republic	8.86	20	62.26	Europe
Peru	8.63	21	60.38	Latin America
Argentina	8.25	22	58.49	Latin America
Luxembourg	8.20	23	56.60	Europe
South Korea	8.06	24	54.72	Asia
Japan	7.69	25	52.83	Asia
Finland	7.44	26	50.94	Europe
Russian Federation	7.27	28	47.17	Europe
Sweden	7.17	29	45.28	Europe
Denmark	6.96	30	43.40	Europe
USA	6.68	31	41.51	North America
Hungary	6.53	32	39.62	Europe
Germany	5.78	34	35.85	Europe
Canada	5.38	35	33.96	North America
Poland	5.34	36	32.08	Europe
France	5.29	37	30.19	Europe
Austria	5.23	38	28.30	Europe
Philippines	5.18	39	26.42	Asia
Belgium	4.97	40	24.53	Europe
Italy	4.81	41	22.64	Europe
Netherlands	4.75	42	20.75	Europe
Turkey	4.45	43	18.87	the Middle East
Mexico	4.44	44	16.98	Latin America
Australia	4.40	45	15.09	Oceania
Indonesia	4.10	48	9.43	Asia
China	2.51	51	3.77	Asia
Pakistan	2.47	52	1.89	the Middle East
India	2.22	53	0.00	Asia

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Earnings Before Interest and Taxes (EBIT)
(Air and Water Resource and Solid Waste Management)

Countries in Asia	Value (total revenue = 100)	Rank	Percentile
Malaysia	17.84	1	96.15
Hong Kong	17.72	2	92.31
Taiwan	12.13	3	88.46
Thailand	11.68	4	84.62
Mongolia	10.42	5	80.77
Singapore	9.99	6	76.92
Brunei	8.57	7	73.08
North Korea	8.38	8	69.23
Macau	8.13	9	65.38
South Korea	8.06	10	61.54
Japan	7.69	11	57.69
Seychelles	6.78	12	53.85
Papua New Guinea	5.86	13	50.00
Burma	5.20	14	46.15
Philippines	5.18	15	42.31
Indonesia	4.10	16	38.46
Maldives	3.74	17	34.62
Sri Lanka	2.95	18	30.77
China	2.51	19	26.92
India	2.22	20	23.08
Cambodia	1.69	21	19.23
Laos	1.63	22	15.38
Vietnam	1.48	23	11.54
Bangladesh	1.27	24	7.69
Bhutan	1.21	25	3.85
Nepal	1.08	26	0.00

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Pretax Income

Countries	Value (total revenue = 100)	Rank	Percentile	Region
Malaysia	17.41	1	98.11	Asia
South Africa	17.40	2	96.23	Africa
Brazil	15.76	3	94.34	Latin America
New Zealand	15.66	4	92.45	Oceania
Hong Kong	15.35	5	90.57	Asia
Chile	15.00	6	88.68	Latin America
Spain	13.88	7	86.79	Europe
Israel	12.72	8	84.91	the Middle East
Ireland	12.61	9	83.02	Europe
Thailand	11.40	10	81.13	Asia
Norway	10.78	11	79.25	Europe
Taiwan	10.51	12	77.36	Asia
Portugal	9.46	14	73.58	Europe
Greece	8.62	16	69.81	Europe
Peru	8.42	17	67.92	Latin America
Switzerland	8.14	18	66.04	Europe
Czech Republic	7.67	19	64.15	Europe
Argentina	7.15	20	62.26	Latin America
Luxembourg	7.04	21	60.38	Europe
South Korea	6.99	22	58.49	Asia
Japan	6.59	23	56.60	Asia
Finland	6.38	25	52.83	Europe
Russian Federation	6.29	26	50.94	Europe
Sweden	6.15	28	47.17	Europe
the United Kingdom	6.06	29	45.28	Europe
Singapore	5.99	30	43.40	Asia
Denmark	5.97	31	41.51	Europe
USA	5.73	32	39.62	North America
Hungary	5.66	33	37.74	Europe
Philippines	5.06	34	35.85	Asia
Poland	4.63	35	33.96	Europe
Indonesia	4.00	37	30.19	Asia
Turkey	3.86	38	28.30	the Middle East
Mexico	3.85	39	26.42	Latin America
China	2.45	43	18.87	Asia
Pakistan	2.41	44	16.98	the Middle East
India	2.17	45	15.09	Asia
Germany	1.49	46	13.21	Europe
Canada	1.38	47	11.32	North America
France	1.36	48	9.43	Europe
Austria	1.34	49	7.55	Europe
Belgium	1.28	50	5.66	Europe
Italy	1.23	51	3.77	Europe
Netherlands	1.22	52	1.89	Europe
Australia	1.13	53	0.00	Oceania

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Pretax Income
(Air and Water Resource and Solid Waste Management)

Countries in Asia	Value (total revenue = 100)	Rank	Percentile
Malaysia	17.41	1	96.15
Hong Kong	15.35	2	92.31
Thailand	11.40	3	88.46
Taiwan	10.51	4	84.62
Mongolia	10.17	5	80.77
North Korea	8.18	6	76.92
Brunei	7.35	7	73.08
Macau	7.04	8	69.23
South Korea	6.99	9	65.38
Japan	6.59	10	61.54
Singapore	5.99	11	57.69
Seychelles	5.87	12	53.85
Papua New Guinea	5.72	13	50.00
Burma	5.08	14	46.15
Philippines	5.06	15	42.31
Indonesia	4.00	16	38.46
Maldives	3.65	17	34.62
Sri Lanka	2.88	18	30.77
China	2.45	19	26.92
India	2.17	20	23.08
Cambodia	1.65	21	19.23
Laos	1.59	22	15.38
Vietnam	1.44	23	11.54
Bangladesh	1.24	24	7.69
Bhutan	1.18	25	3.85
Nepal	1.05	26	0.00

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

3.5 FINANCIAL RETURNS IN TAIWAN: PROFITABILITY RATIOS

3.5.1 Overview

In this chapter we consider additional financial ratios estimated for firms involved in air and water resource and solid waste management operating in Taiwan benchmarked against global averages. The chapter begins by defining relevant terms. Estimates are then presented for the proto-typical firm operating in Taiwan compared to average global benchmarks. For ratios where there are large deviations between the average firm in Taiwan and the benchmarks, graphics are provided. Then the distribution of ratios is presented in the form of ranks and percentiles. Certain key ratios are highlighted across countries in the comparison group.

3.5.2 Ratios – Definitions of Terms

The following definitions are provided for those less familiar with financial ratio analysis. As this chapter deals with the global benchmarking of ratios, only definitions covering certain terms used in this chapter's tables and graphs are provided here. The glossary below reflects commonly accepted definitions across various countries and official sources.

- **Cash Flow.** Cash flow is generally defined as being equal to the company's net income plus the charge-off amounts for depreciation, depletion, amortization, extraordinary charges to reserves. These are bookkeeping deductions which are not paid out as cash.
- **Current Ratio.** The current ratio is generally defined as a ratio of liquidity measuring the ability of a business to pay its current obligations when due. The current ratio is generally calculated by dividing total current assets by total current liabilities. Managers and lenders often want the current ratio to be 2.00 or greater. This ratio is often seen as an indication of short-term debt-paying ability. The higher the ratio, the more liquid the company.
- **Fixed Charge Coverage Ratio.** The fixed charge coverage ratio is generally seen as an indication of the company's ability to cover its fixed charges. This ratio is typically determined by dividing recurring earnings excluding interest expense, tax expense, equity earnings, and minority earnings plus interest from rentals by interest expense including capitalized interest and interest from rentals.
- **Net Margin (%).** The net margin is the ratio of net income dollars generated by each dollar of sales.
- **Operating Profit Margin (%).** Operating profit margin percent is the ratio of operating profit to net sales. Operating profit (loss) is income or loss before taxes calculated by the difference between total revenues and total expense disregarding the effects of any extraordinary transactions.
- **Quick Ratio.** The quick ratio, also commonly known as the "acid test ratio", is a refined current ratio and is often seen as a more conservative measure of liquidity. The quick ratio is generally determined by dividing cash and equivalents plus trade receivables by total current liabilities. The ratio shows the degree to which a company's current liabilities can be covered by the most liquid current assets. Financial management texts generally conclude that any value of less than 1 to 1 implies a reciprocal dependency on inventory or other current assets to liquidate short-term debt.
- **Working Capital.** Net working capital equals the difference between total current assets and total current liabilities. Working capital often reflects a company's ability to expand volume and meet obligations. Since growth is usually one goal, the amount of working capital on this year's balance sheet should be greater than

that of the previous year's. This is an efficiency, or turnover, ratio which benchmarks the rate at which current assets less current liabilities are used by the company in making sales. A low ratio can indicate a less profitable use of working capital in making sales. On the other hand, a very high ratio can indicate the company is wasting current assets which could be more efficiently deployed in production and in increasing sales and profits; or that the company may be undercapitalized, and thus vulnerable to liquidity problems in a period of weak business conditions.

3.5.3 Ratio Structure: Outlook

Using the methodology described in the introduction, the following table summarizes ratio structure benchmarks for firms involved in air and water resource and solid waste management in Taiwan. All figures are current-year projections for companies operating in Taiwan based on latest financial results available.

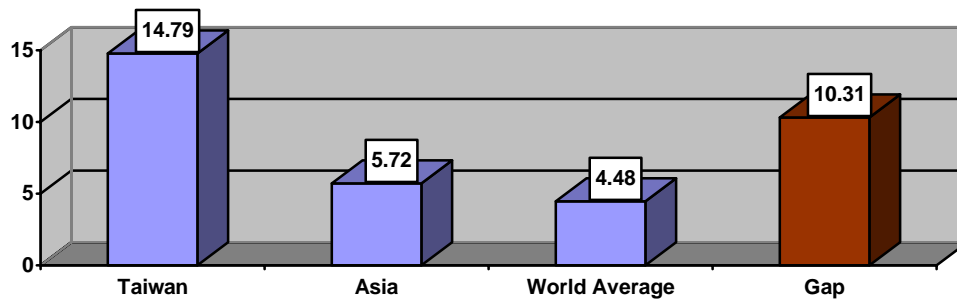
Ratios	Taiwan	Asia	World Avg.
Profitability			
Cash Flow % Sales	14.79	5.72	4.48
Operating Profit Margin (%)	12.07	6.09	4.51
Pretax Margin (%)	10.51	5.85	4.32
Net Margin (%)	6.19	3.72	2.76
Total Asset Turnover (X) th USD	0.40	0.36	0.28
Asset Utilization			
Net Sales % Working Capital	54.31	9.38	4.27
Capital Expenditure % Total Assets	5.35	1.98	1.66
Capital Expenditure % Total Sales	8.95	3.41	3.00
Leverage			
Total Debt % Total Capital	15.61	7.69	6.80
Long Term Debt % Total Capital	15.47	6.53	5.73
Equity % Total Capital	51.64	35.81	28.01
Total Debt % Total Assets	13.05	5.57	5.27
Common Equity % Total Assets	43.05	25.83	20.16
Total Capital % Assets	55.95	31.09	25.28
Fixed Charge Coverage Ratio	5.02	25.80	21.70
Fixed Assets % Common Equity	52.81	29.97	29.35
Working Capital % Total Capital	0.59	14.25	11.60
Liquidity			
Quick Ratio	0.61	0.98	0.80
Current Ratio	0.72	1.15	0.93
Receivables % Total Current Assets	56.32	24.24	16.00
Inventories % Total Current Assets	1.85	4.34	3.62

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

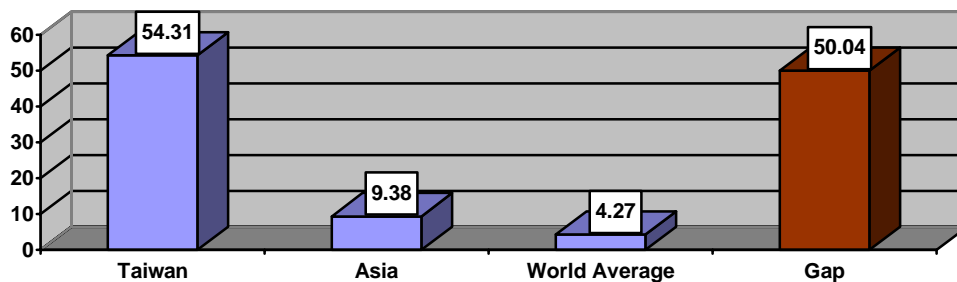
3.5.4 Large Variances: Ratios

The following graphics summarize for air and water resource and solid waste management the large ratio structure gaps between firms operating in Taiwan and the world average. A gap cannot necessarily be interpreted as a positive or negative reflection on performance. Gaps may signal areas of specialization, market focus, or expertise. More contextual information is required to fully interpret these gaps. The gaps highlighted here are simply those that are large.

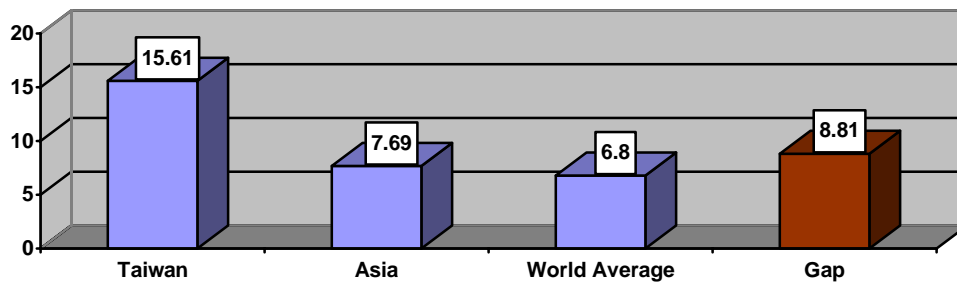
Gap: Cash Flow % Sales

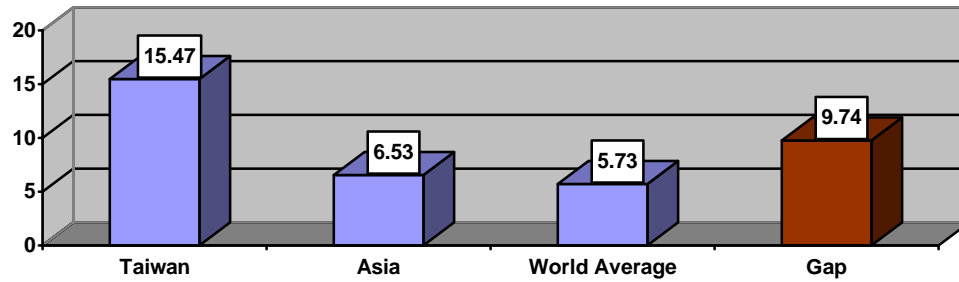
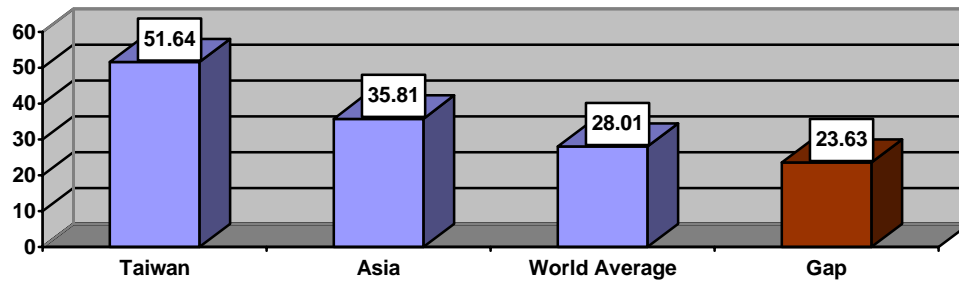
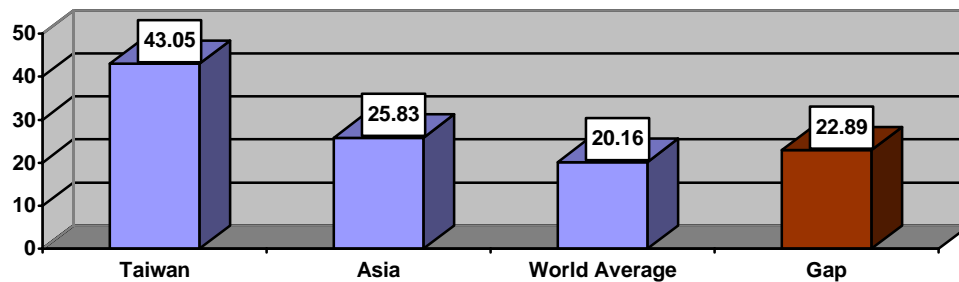
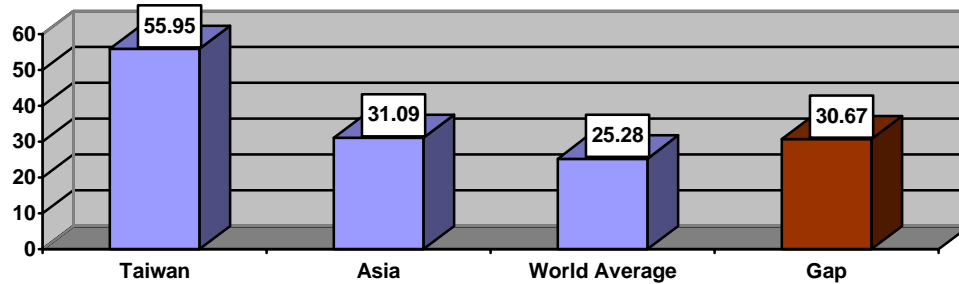


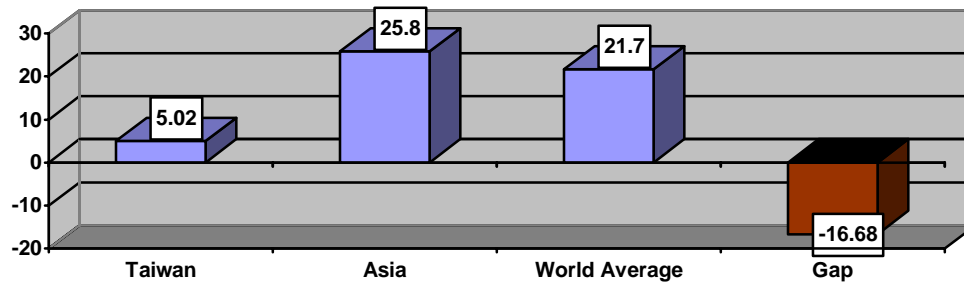
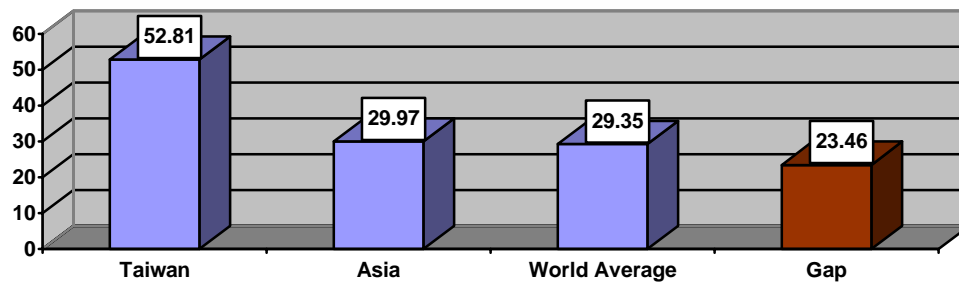
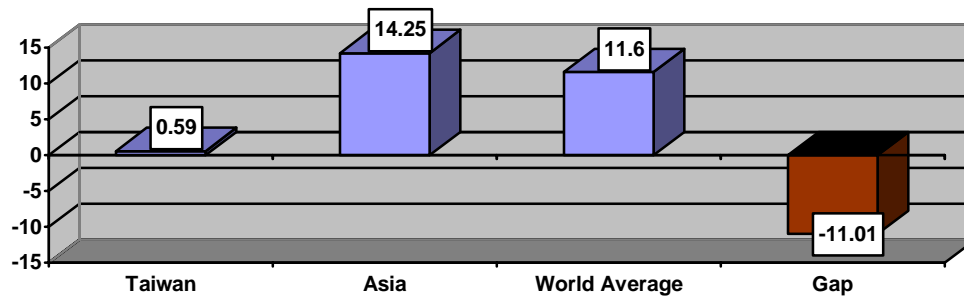
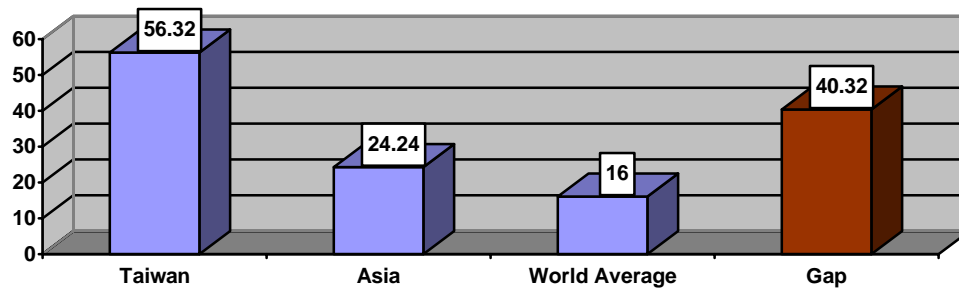
Gap: Net Sales % Working Capital



Gap: Total Debt % Total Capital



Gap: Long Term Debt % Total Capital**Gap: Equity % Total Capital****Gap: Common Equity % Total Assets****Gap: Total Capital % Assets**

Gap: Fixed Charge Coverage Ratio**Gap: Fixed Assets % Common Equity****Gap: Working Capital % Total Capital****Gap: Receivables % Total Current Assets**

3.5.5 Key Percentiles and Rankings

We now consider the distribution of financial ratios for air and water resource and solid waste management using ranks and percentiles. What percent of countries have a value lower or higher than Taiwan (what is the ratio's rank or percentile)? The table below answers this question with respect to financial ratios. The ranks and percentiles indicate, from highest to lowest, where a value falls within the distribution of all countries considered in the global benchmark (the number of countries in the benchmark per line item may vary, as indicated in the Rank). Again, a high or low figure does not necessarily indicate good or bad performance. After the summary table below, a few key financial ratios are highlighted in additional tables.

Ratios	Taiwan	Rank of Total	Percentile
Profitability			
Cash Flow % Sales	14.79	17 of 53	67.92
Operating Profit Margin (%)	12.07	11 of 53	79.25
Pretax Margin (%)	10.51	12 of 53	77.36
Net Margin (%)	6.19	13 of 53	75.47
Total Asset Turnover (X) th USD	0.40	31 of 53	41.51
Asset Utilization			
Net Sales % Working Capital	54.31	6 of 53	88.68
Capital Expenditure % Total Assets	5.35	16 of 53	69.81
Capital Expenditure % Total Sales	8.95	16 of 53	69.81
Leverage			
Total Debt % Total Capital	15.61	24 of 53	54.72
Long Term Debt % Total Capital	15.47	24 of 53	54.72
Equity % Total Capital	51.64	22 of 53	58.49
Total Debt % Total Assets	13.05	21 of 53	60.38
Common Equity % Total Assets	43.05	17 of 53	67.92
Total Capital % Assets	55.95	27 of 53	49.06
Fixed Charge Coverage Ratio	5.02	31 of 53	41.51
Fixed Assets % Common Equity	52.81	24 of 53	54.72
Working Capital % Total Capital	0.59	33 of 53	37.74
Liquidity			
Quick Ratio	0.61	30 of 53	43.40
Current Ratio	0.72	29 of 53	45.28
Receivables % Total Current Assets	56.32	16 of 53	69.81
Inventories % Total Current Assets	1.85	37 of 53	30.19

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Pretax Margin (%)

Countries	Value	Rank	Percentile	Region
Malaysia	17.41	1	98.11	Asia
South Africa	17.40	2	96.23	Africa
Brazil	15.76	3	94.34	Latin America
New Zealand	15.66	4	92.45	Oceania
Hong Kong	15.35	5	90.57	Asia
Chile	15.00	6	88.68	Latin America
Spain	13.88	7	86.79	Europe
Israel	12.72	8	84.91	the Middle East
Ireland	12.61	9	83.02	Europe
Thailand	11.40	10	81.13	Asia
Norway	10.78	11	79.25	Europe
Taiwan	10.51	12	77.36	Asia
Portugal	9.46	14	73.58	Europe
Greece	8.62	16	69.81	Europe
Peru	8.42	17	67.92	Latin America
Switzerland	8.14	18	66.04	Europe
Czech Republic	7.67	19	64.15	Europe
Argentina	7.15	20	62.26	Latin America
Luxembourg	7.04	21	60.38	Europe
South Korea	6.99	22	58.49	Asia
Japan	6.59	23	56.60	Asia
Finland	6.38	25	52.83	Europe
Russian Federation	6.29	26	50.94	Europe
Sweden	6.15	28	47.17	Europe
the United Kingdom	6.06	29	45.28	Europe
Singapore	5.99	30	43.40	Asia
Denmark	5.97	31	41.51	Europe
USA	5.73	32	39.62	North America
Hungary	5.66	33	37.74	Europe
Philippines	5.06	34	35.85	Asia
Poland	4.63	35	33.96	Europe
Indonesia	4.00	37	30.19	Asia
Turkey	3.86	38	28.30	the Middle East
Mexico	3.85	39	26.42	Latin America
China	2.45	43	18.87	Asia
Pakistan	2.41	44	16.98	the Middle East
India	2.17	45	15.09	Asia
Germany	1.49	46	13.21	Europe
Canada	1.38	47	11.32	North America
France	1.36	48	9.43	Europe
Austria	1.34	49	7.55	Europe
Belgium	1.28	50	5.66	Europe
Italy	1.23	51	3.77	Europe
Netherlands	1.22	52	1.89	Europe
Australia	1.13	53	0.00	Oceania

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Pretax Margin (%)
(Air and Water Resource and Solid Waste Management)

Countries in Asia	Value	Rank	Percentile
Malaysia	17.41	1	96.15
Hong Kong	15.35	2	92.31
Thailand	11.40	3	88.46
Taiwan	10.51	4	84.62
Mongolia	10.17	5	80.77
North Korea	8.18	6	76.92
Brunei	7.35	7	73.08
Macau	7.04	8	69.23
South Korea	6.99	9	65.38
Japan	6.59	10	61.54
Singapore	5.99	11	57.69
Seychelles	5.87	12	53.85
Papua New Guinea	5.72	13	50.00
Burma	5.08	14	46.15
Philippines	5.06	15	42.31
Indonesia	4.00	16	38.46
Maldives	3.65	17	34.62
Sri Lanka	2.88	18	30.77
China	2.45	19	26.92
India	2.17	20	23.08
Cambodia	1.65	21	19.23
Laos	1.59	22	15.38
Vietnam	1.44	23	11.54
Bangladesh	1.24	24	7.69
Bhutan	1.18	25	3.85
Nepal	1.05	26	0.00

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Quick Ratio

Countries	Value	Rank	Percentile	Region
Malaysia	3.78	1	98.11	Asia
South Africa	3.77	2	96.23	Africa
Brazil	3.42	3	94.34	Latin America
Chile	3.25	4	92.45	Latin America
Norway	2.63	5	90.57	Europe
Thailand	2.47	6	88.68	Asia
Switzerland	1.99	8	84.91	Europe
Peru	1.83	10	81.13	Latin America
Luxembourg	1.72	11	79.25	Europe
Japan	1.61	12	77.36	Asia
Finland	1.56	13	75.47	Europe
Sweden	1.50	14	73.58	Europe
Denmark	1.46	15	71.70	Europe
USA	1.40	16	69.81	North America
Philippines	1.10	18	66.04	Asia
New Zealand	0.90	20	62.26	Oceania
Hong Kong	0.89	21	60.38	Asia
Indonesia	0.87	22	58.49	Asia
Spain	0.80	24	54.72	Europe
the United Kingdom	0.75	25	52.83	Europe
Singapore	0.74	26	50.94	Asia
Israel	0.73	27	49.06	the Middle East
Ireland	0.73	28	47.17	Europe
Taiwan	0.61	30	43.40	Asia
Portugal	0.55	31	41.51	Europe
China	0.53	32	39.62	Asia
Pakistan	0.52	33	37.74	the Middle East
Greece	0.50	34	35.85	Europe
India	0.47	35	33.96	Asia
Czech Republic	0.44	36	32.08	Europe
Argentina	0.41	37	30.19	Latin America
South Korea	0.40	38	28.30	Asia
Russian Federation	0.36	40	24.53	Europe
Hungary	0.33	41	22.64	Europe
Poland	0.27	42	20.75	Europe
Germany	0.24	43	18.87	Europe
Canada	0.23	44	16.98	North America
France	0.22	45	15.09	Europe
Turkey	0.22	46	13.21	the Middle East
Mexico	0.22	47	11.32	Latin America
Austria	0.22	48	9.43	Europe
Belgium	0.21	49	7.55	Europe
Italy	0.20	51	3.77	Europe
Netherlands	0.20	52	1.89	Europe
Australia	0.19	53	0.00	Oceania

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Quick Ratio (Air and Water Resource and Solid Waste Management)

Countries in Asia	Value	Rank	Percentile
Malaysia	3.78	1	96.15
Thailand	2.47	2	92.31
Mongolia	2.21	3	88.46
Brunei	1.79	4	84.62
North Korea	1.77	5	80.77
Japan	1.61	6	76.92
Papua New Guinea	1.24	7	73.08
Burma	1.10	8	69.23
Philippines	1.10	9	65.38
Hong Kong	0.89	10	61.54
Indonesia	0.87	11	57.69
Maldives	0.79	12	53.85
Singapore	0.74	13	50.00
Sri Lanka	0.62	14	46.15
Taiwan	0.61	15	42.31
China	0.53	16	38.46
India	0.47	17	34.62
Macau	0.41	18	30.77
South Korea	0.40	19	26.92
Cambodia	0.36	20	23.08
Laos	0.34	21	19.23
Seychelles	0.34	22	15.38
Vietnam	0.31	23	11.54
Bangladesh	0.27	24	7.69
Bhutan	0.26	25	3.85
Nepal	0.23	26	0.00

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Current Ratio

Countries	Value	Rank	Percentile	Region
Malaysia	4.32	1	98.11	Asia
South Africa	4.32	2	96.23	Africa
Brazil	3.91	3	94.34	Latin America
Chile	3.72	4	92.45	Latin America
Norway	3.21	5	90.57	Europe
Thailand	2.83	6	88.68	Asia
Switzerland	2.43	7	86.79	Europe
Luxembourg	2.10	10	81.13	Europe
Peru	2.09	11	79.25	Latin America
Japan	1.97	12	77.36	Asia
Finland	1.90	13	75.47	Europe
Sweden	1.83	14	73.58	Europe
Denmark	1.78	15	71.70	Europe
USA	1.71	16	69.81	North America
Philippines	1.26	18	66.04	Asia
the United Kingdom	1.21	19	64.15	Europe
Singapore	1.19	20	62.26	Asia
New Zealand	1.08	21	60.38	Oceania
Hong Kong	1.06	23	56.60	Asia
Indonesia	0.99	24	54.72	Asia
Spain	0.95	25	52.83	Europe
Israel	0.88	27	49.06	the Middle East
Ireland	0.87	28	47.17	Europe
Taiwan	0.72	29	45.28	Asia
Portugal	0.65	31	41.51	Europe
China	0.61	32	39.62	Asia
Pakistan	0.60	33	37.74	the Middle East
Greece	0.59	34	35.85	Europe
India	0.54	35	33.96	Asia
Czech Republic	0.53	36	32.08	Europe
Argentina	0.49	37	30.19	Latin America
South Korea	0.48	38	28.30	Asia
Russian Federation	0.43	40	24.53	Europe
Hungary	0.39	41	22.64	Europe
Germany	0.37	42	20.75	Europe
Canada	0.34	43	18.87	North America
France	0.34	44	16.98	Europe
Austria	0.33	45	15.09	Europe
Poland	0.32	46	13.21	Europe
Belgium	0.32	47	11.32	Europe
Italy	0.31	48	9.43	Europe
Netherlands	0.30	49	7.55	Europe
Australia	0.28	50	5.66	Oceania
Turkey	0.27	51	3.77	the Middle East
Mexico	0.26	52	1.89	Latin America

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Current Ratio
(Air and Water Resource and Solid Waste Management)

Countries in Asia	Value	Rank	Percentile
Malaysia	4.32	1	96.15
Thailand	2.83	2	92.31
Mongolia	2.52	3	88.46
Brunei	2.19	4	84.62
North Korea	2.03	5	80.77
Japan	1.97	6	76.92
Papua New Guinea	1.42	7	73.08
Burma	1.26	8	69.23
Philippines	1.26	9	65.38
Singapore	1.19	10	61.54
Hong Kong	1.06	11	57.69
Indonesia	0.99	12	53.85
Maldives	0.90	13	50.00
Taiwan	0.72	14	46.15
Sri Lanka	0.71	15	42.31
China	0.61	16	38.46
India	0.54	17	34.62
Macau	0.48	18	30.77
South Korea	0.48	19	26.92
Cambodia	0.41	20	23.08
Seychelles	0.40	21	19.23
Laos	0.39	22	15.38
Vietnam	0.36	23	11.54
Bangladesh	0.31	24	7.69
Bhutan	0.29	25	3.85
Nepal	0.26	26	0.00

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Inventories % Total Current Assets

Countries	Value	Rank	Percentile	Region
the United Kingdom	30.86	1	98.11	Europe
Singapore	30.49	2	96.23	Asia
Germany	17.04	3	94.34	Europe
Norway	16.12	4	92.45	Europe
Canada	15.85	5	90.57	North America
France	15.58	6	88.68	Europe
Austria	15.41	7	86.79	Europe
Belgium	14.66	8	84.91	Europe
Italy	14.16	9	83.02	Europe
Netherlands	14.00	10	81.13	Europe
Australia	12.98	11	79.25	Oceania
Switzerland	12.17	12	77.36	Europe
Malaysia	10.77	13	75.47	Asia
South Africa	10.77	14	73.58	Africa
Luxembourg	10.53	15	71.70	Europe
Japan	9.86	16	69.81	Asia
Brazil	9.75	17	67.92	Latin America
Finland	9.54	18	66.04	Europe
Chile	9.28	19	64.15	Latin America
Sweden	9.20	20	62.26	Europe
Denmark	8.94	21	60.38	Europe
USA	8.58	22	58.49	North America
Thailand	7.05	23	56.60	Asia
Peru	5.21	26	50.94	Latin America
Philippines	3.13	28	47.17	Asia
New Zealand	2.76	29	45.28	Oceania
Hong Kong	2.70	30	43.40	Asia
Indonesia	2.47	32	39.62	Asia
Spain	2.44	33	37.74	Europe
Israel	2.24	35	33.96	the Middle East
Ireland	2.22	36	32.08	Europe
Taiwan	1.85	37	30.19	Asia
Portugal	1.66	39	26.42	Europe
China	1.52	40	24.53	Asia
Greece	1.52	41	22.64	Europe
Pakistan	1.49	42	20.75	the Middle East
Czech Republic	1.35	43	18.87	Europe
India	1.34	44	16.98	Asia
Argentina	1.26	45	15.09	Latin America
South Korea	1.23	46	13.21	Asia
Russian Federation	1.11	48	9.43	Europe
Hungary	0.99	49	7.55	Europe
Poland	0.81	50	5.66	Europe
Turkey	0.68	51	3.77	the Middle East
Mexico	0.68	52	1.89	Latin America

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Inventories % Total Current Assets
(Air and Water Resource and Solid Waste Management)

Countries in Asia	Value	Rank	Percentile
Singapore	30.49	1	96.15
Brunei	10.99	2	92.31
Malaysia	10.77	3	88.46
Japan	9.86	4	84.62
Thailand	7.05	5	80.77
Mongolia	6.29	6	76.92
North Korea	5.06	7	73.08
Papua New Guinea	3.54	8	69.23
Burma	3.14	9	65.38
Philippines	3.13	10	61.54
Hong Kong	2.70	11	57.69
Indonesia	2.47	12	53.85
Maldives	2.26	13	50.00
Taiwan	1.85	14	46.15
Sri Lanka	1.78	15	42.31
China	1.52	16	38.46
India	1.34	17	34.62
Macau	1.24	18	30.77
South Korea	1.23	19	26.92
Seychelles	1.03	20	23.08
Cambodia	1.02	21	19.23
Laos	0.98	22	15.38
Vietnam	0.89	23	11.54
Bangladesh	0.76	24	7.69
Bhutan	0.73	25	3.85
Nepal	0.65	26	0.00

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

3.6 PRODUCTIVITY IN TAIWAN: ASSET-LABOR RATIOS

3.6.1 Overview

In this chapter, we consider numerous asset-labor ratios for air and water resource and solid waste management in Taiwan benchmarked against global averages. Productivity and utilization ratios are presented for companies operating in Taiwan and the average global benchmarks for air and water resource and solid waste management. For ratios where there are large deviations between Taiwan and the benchmarks, graphics are provided (sometimes referred to as a “gap” analysis). Then the distribution of ratios is presented in the form of ranks and percentiles. Certain asset-labor ratios are highlighted across countries in the comparison group.

In the case of asset-labor ratios, this report maintains comparability over time and across countries by using a common currency (the US dollar) and relates each measure to a “per employee basis”. Ratios are projected using raw financial statistics and, as ratios, are therefore comparable. Given a country’s human resource ratios, the resulting figures are benchmarked across regional and global averages.

We then report the larger asset-labor ratio gaps for air and water resource and solid waste management that Taiwan has vis-à-vis the worldwide average. Again, a gap need not be a bad sign. Rather, it is simply a substantial difference that might merit further attention or signal a firm’s relative incentive to invest locally. All figures are projections, so due caution is required.

3.6.2 Asset to Labor: Outlook

The following tables and graphs are prepared using the methodology described at the beginning of this section. All units are in thousands of US dollars per employee. All figures are current-year projections for air and water resource and solid waste management in Taiwan based on latest financial results available.

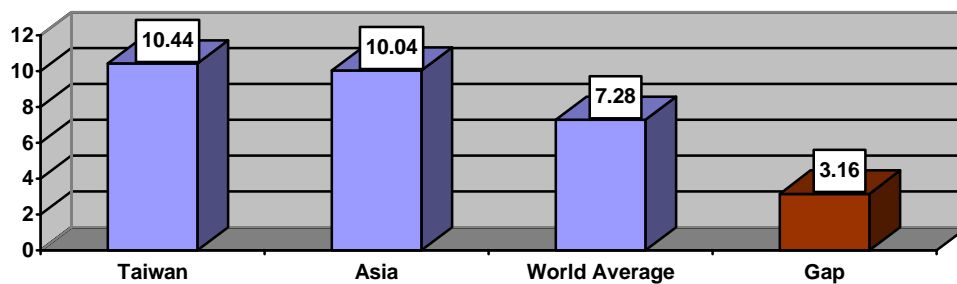
Labor-asset Ratios (\$k/employee)	Taiwan	Asia	World Avg.
Receivables (Net)	10.44	10.04	7.28
Total Inventories	0.34	2.49	1.83
Other Current Assets	1.32	1.09	0.79
Current Assets - Total	12.44	18.73	14.35
Property Plant and Equipment - Net	61.14	19.87	15.61
Total Assets	121.11	51.54	37.98

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

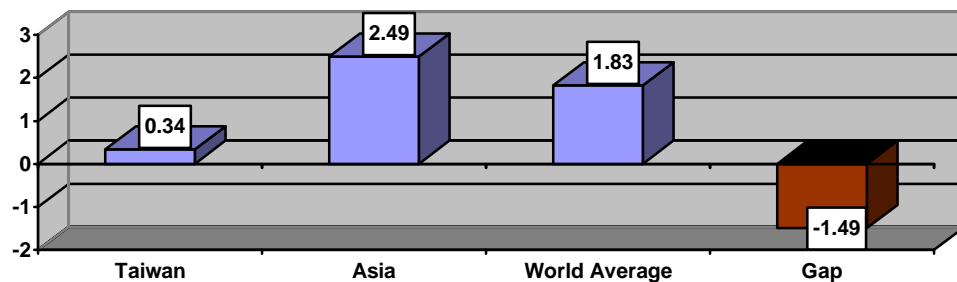
3.6.3 Asset to Labor: International Gaps

The following graphics summarize for air and water resource and solid waste management the large labor-asset gaps between firms operating in Taiwan and the world average. A gap cannot necessarily be interpreted as a positive or negative reflection on performance. Gaps may signal areas of specialization, market focus, or expertise. More contextual information is required to fully interpret these gaps. The gaps highlighted here are simply those that are large.

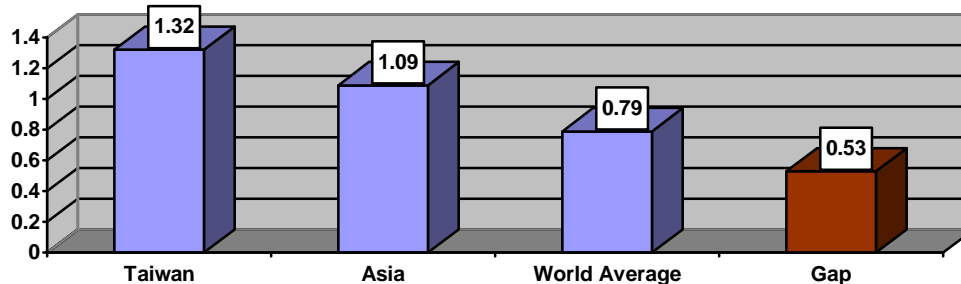
Gap: Receivables (Net) (\$k/employee)

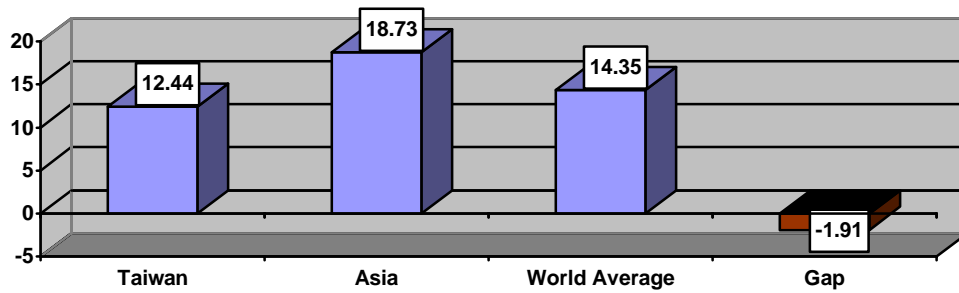
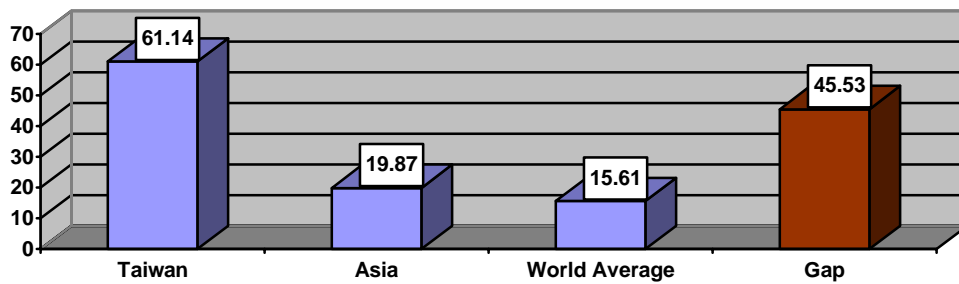
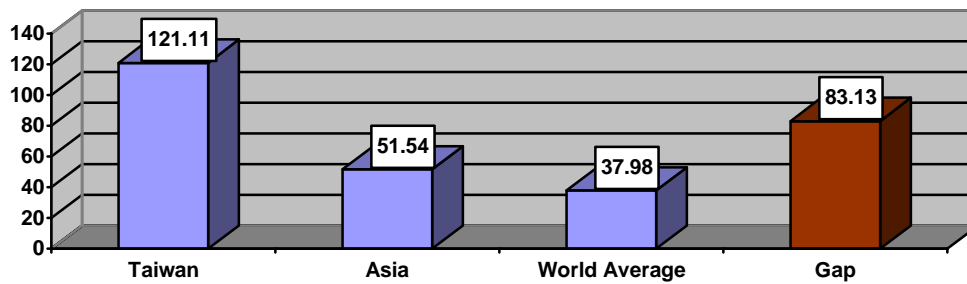


Gap: Total Inventories (\$k/employee)



Gap: Other Current Assets (\$k/employee)



Gap: Current Assets - Total (\$k/employee)**Gap: Property Plant and Equipment - Net (\$k/employee)****Gap: Total Assets (\$k/employee)**

3.6.4 Key Percentiles and Rankings

We now consider the distribution of asset-labor ratios using ranks and percentiles across . What percent of countries have a productivity indicator lower or higher than Taiwan (what is the indicator's rank or percentile)? The table below answers this question with respect to asset-labor structure. The ranks and percentiles indicate, from highest to lowest, where a value falls within the distribution of all countries considered in the global benchmark (the number of countries in the benchmark per line item may vary, as indicated in the Rank). Again, a high or low figure does not necessarily indicate good or bad performance or productivity. After the summary table below, a few key asset-labor ratios are highlighted in additional tables.

Asset Structure (\$k/employee)	Taiwan	Rank of Total	Percentile
Receivables (Net)	10.44	22 of 53	58.49
Total Inventories	0.34	41 of 53	22.64
Other Current Assets	1.32	16 of 53	69.81
Current Assets - Total	12.44	26 of 53	50.94
Property Plant and Equipment - Net	61.14	17 of 53	67.92
Total Assets	121.11	17 of 53	67.92

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Receivables (Net)

Countries	Value (\$K/employee)	Rank	Percentile	Region
Norway	73.40	1	98.11	Europe
Switzerland	55.42	2	96.23	Europe
Luxembourg	47.93	3	94.34	Europe
Japan	44.90	4	92.45	Asia
Finland	43.44	5	90.57	Europe
Sweden	41.87	6	88.68	Europe
Denmark	40.69	7	86.79	Europe
USA	39.04	8	84.91	North America
the United Kingdom	25.69	9	83.02	Europe
Singapore	25.38	10	81.13	Asia
Malaysia	19.22	11	79.25	Asia
South Africa	19.21	12	77.36	Africa
Brazil	17.40	13	75.47	Latin America
Chile	16.56	14	73.58	Latin America
New Zealand	15.55	15	71.70	Oceania
Hong Kong	15.24	16	69.81	Asia
Spain	13.78	17	67.92	Europe
Israel	12.63	18	66.04	the Middle East
Thailand	12.59	19	64.15	Asia
Ireland	12.52	20	62.26	Europe
Taiwan	10.44	22	58.49	Asia
Portugal	9.39	24	54.72	Europe
Peru	9.30	25	52.83	Latin America
Greece	8.56	26	50.94	Europe
Czech Republic	7.62	27	49.06	Europe
Argentina	7.10	28	47.17	Latin America
South Korea	6.94	29	45.28	Asia
Russian Federation	6.25	32	39.62	Europe
Hungary	5.62	33	37.74	Europe
Philippines	5.59	34	35.85	Asia
Poland	4.59	36	32.08	Europe
Indonesia	4.42	37	30.19	Asia
Turkey	3.83	39	26.42	the Middle East
Mexico	3.82	40	24.53	Latin America
China	2.71	43	18.87	Asia
Pakistan	2.66	44	16.98	the Middle East
India	2.40	45	15.09	Asia
Germany	0.04	46	13.21	Europe
Canada	0.03	47	11.32	North America
France	0.03	48	9.43	Europe
Austria	0.03	49	7.55	Europe
Belgium	0.03	50	5.66	Europe
Italy	0.03	51	3.77	Europe
Netherlands	0.03	52	1.89	Europe
Australia	0.03	53	0.00	Oceania

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Receivables (Net)
(Air and Water Resource and Solid Waste Management)

Countries in Asia	Value (\$K/employee)	Rank	Percentile
Brunei	50.05	1	96.15
Japan	44.90	2	92.31
Singapore	25.38	3	88.46
Malaysia	19.22	4	84.62
Hong Kong	15.24	5	80.77
Thailand	12.59	6	76.92
Mongolia	11.23	7	73.08
Taiwan	10.44	8	69.23
North Korea	9.03	9	65.38
Macau	6.99	10	61.54
South Korea	6.94	11	57.69
Papua New Guinea	6.31	12	53.85
Seychelles	5.83	13	50.00
Burma	5.60	14	46.15
Philippines	5.59	15	42.31
Indonesia	4.42	16	38.46
Maldives	4.03	17	34.62
Sri Lanka	3.18	18	30.77
China	2.71	19	26.92
India	2.40	20	23.08
Cambodia	1.82	21	19.23
Laos	1.75	22	15.38
Vietnam	1.59	23	11.54
Bangladesh	1.36	24	7.69
Bhutan	1.30	25	3.85
Nepal	1.16	26	0.00

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Total Inventories

Countries	Value (\$K/employee)	Rank	Percentile	Region
the United Kingdom	13.91	1	98.11	Europe
Singapore	13.74	2	96.23	Asia
Norway	9.33	3	94.34	Europe
Malaysia	7.57	4	92.45	Asia
South Africa	7.56	5	90.57	Africa
Switzerland	7.04	6	88.68	Europe
Brazil	6.85	7	86.79	Latin America
Chile	6.52	8	84.91	Latin America
Luxembourg	6.09	9	83.02	Europe
Japan	5.71	10	81.13	Asia
Finland	5.52	11	79.25	Europe
Sweden	5.32	12	77.36	Europe
Denmark	5.17	13	75.47	Europe
USA	4.96	14	73.58	North America
Thailand	4.96	15	71.70	Asia
Peru	3.66	18	66.04	Latin America
Philippines	2.20	20	62.26	Asia
Indonesia	1.74	22	58.49	Asia
China	1.07	25	52.83	Asia
Pakistan	1.05	26	50.94	the Middle East
India	0.94	27	49.06	Asia
Germany	0.92	28	47.17	Europe
Canada	0.86	29	45.28	North America
France	0.85	30	43.40	Europe
Austria	0.84	31	41.51	Europe
Belgium	0.79	32	39.62	Europe
Italy	0.77	33	37.74	Europe
Netherlands	0.76	34	35.85	Europe
Australia	0.70	35	33.96	Oceania
New Zealand	0.51	36	32.08	Oceania
Hong Kong	0.50	37	30.19	Asia
Spain	0.45	38	28.30	Europe
Israel	0.41	39	26.42	the Middle East
Ireland	0.41	40	24.53	Europe
Taiwan	0.34	41	22.64	Asia
Portugal	0.31	42	20.75	Europe
Greece	0.28	43	18.87	Europe
Czech Republic	0.25	44	16.98	Europe
Argentina	0.23	45	15.09	Latin America
South Korea	0.23	46	13.21	Asia
Russian Federation	0.21	48	9.43	Europe
Hungary	0.18	49	7.55	Europe
Poland	0.15	50	5.66	Europe
Turkey	0.13	51	3.77	the Middle East
Mexico	0.13	52	1.89	Latin America

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Total Inventories
(Air and Water Resource and Solid Waste Management)

Countries in Asia	Value (\$K/employee)	Rank	Percentile
Singapore	13.74	1	96.15
Malaysia	7.57	2	92.31
Brunei	6.36	3	88.46
Japan	5.71	4	84.62
Thailand	4.96	5	80.77
Mongolia	4.42	6	76.92
North Korea	3.55	7	73.08
Papua New Guinea	2.49	8	69.23
Burma	2.21	9	65.38
Philippines	2.20	10	61.54
Indonesia	1.74	11	57.69
Maldives	1.59	12	53.85
Sri Lanka	1.25	13	50.00
China	1.07	14	46.15
India	0.94	15	42.31
Cambodia	0.72	16	38.46
Laos	0.69	17	34.62
Vietnam	0.63	18	30.77
Bangladesh	0.54	19	26.92
Bhutan	0.51	20	23.08
Hong Kong	0.50	21	19.23
Nepal	0.46	22	15.38
Taiwan	0.34	23	11.54
Macau	0.23	24	7.69
South Korea	0.23	25	3.85
Seychelles	0.19	26	0.00

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Current Assets - Total

Countries	Value (\$K/employee)	Rank	Percentile	Region
Norway	113.85	1	98.11	Europe
Switzerland	85.96	2	96.23	Europe
Luxembourg	74.34	3	94.34	Europe
Japan	69.64	4	92.45	Asia
Finland	67.38	5	90.57	Europe
Sweden	64.95	6	88.68	Europe
Denmark	63.11	7	86.79	Europe
USA	60.55	8	84.91	North America
Malaysia	48.63	9	83.02	Asia
South Africa	48.60	10	81.13	Africa
the United Kingdom	45.07	11	79.25	Europe
Singapore	44.52	12	77.36	Asia
Brazil	44.03	13	75.47	Latin America
Chile	41.90	14	73.58	Latin America
Thailand	31.84	15	71.70	Asia
Peru	23.53	18	66.04	Latin America
New Zealand	18.53	19	64.15	Oceania
Hong Kong	18.16	20	62.26	Asia
Spain	16.42	22	58.49	Europe
Israel	15.05	23	56.60	the Middle East
Ireland	14.93	24	54.72	Europe
Philippines	14.13	25	52.83	Asia
Taiwan	12.44	26	50.94	Asia
Portugal	11.19	28	47.17	Europe
Indonesia	11.17	29	45.28	Asia
Greece	10.20	31	41.51	Europe
Czech Republic	9.08	32	39.62	Europe
Argentina	8.46	33	37.74	Latin America
South Korea	8.26	34	35.85	Asia
Russian Federation	7.45	37	30.19	Europe
China	6.85	38	28.30	Asia
Pakistan	6.74	39	26.42	the Middle East
Hungary	6.69	40	24.53	Europe
India	6.06	41	22.64	Asia
Poland	5.47	42	20.75	Europe
Germany	5.42	43	18.87	Europe
Canada	5.04	44	16.98	North America
France	4.96	45	15.09	Europe
Austria	4.91	46	13.21	Europe
Belgium	4.67	47	11.32	Europe
Turkey	4.56	48	9.43	the Middle East
Mexico	4.55	49	7.55	Latin America
Italy	4.51	50	5.66	Europe
Netherlands	4.46	51	3.77	Europe
Australia	4.13	53	0.00	Oceania

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Current Assets - Total
(Air and Water Resource and Solid Waste Management)

Countries in Asia	Value (\$K/employee)	Rank	Percentile
Brunei	77.63	1	96.15
Japan	69.64	2	92.31
Malaysia	48.63	3	88.46
Singapore	44.52	4	84.62
Thailand	31.84	5	80.77
Mongolia	28.41	6	76.92
North Korea	22.84	7	73.08
Hong Kong	18.16	8	69.23
Papua New Guinea	15.97	9	65.38
Burma	14.18	10	61.54
Philippines	14.13	11	57.69
Taiwan	12.44	12	53.85
Indonesia	11.17	13	50.00
Maldives	10.19	14	46.15
Macau	8.33	15	42.31
South Korea	8.26	16	38.46
Sri Lanka	8.03	17	34.62
Seychelles	6.95	18	30.77
China	6.85	19	26.92
India	6.06	20	23.08
Cambodia	4.60	21	19.23
Laos	4.44	22	15.38
Vietnam	4.03	23	11.54
Bangladesh	3.45	24	7.69
Bhutan	3.29	25	3.85
Nepal	2.94	26	0.00

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Property Plant and Equipment - Net

Countries	Value (\$K/employee)	Rank	Percentile	Region
the United Kingdom	117.35	1	98.11	Europe
Singapore	115.93	2	96.23	Asia
Germany	115.79	3	94.34	Europe
Canada	107.68	4	92.45	North America
France	105.90	5	90.57	Europe
Austria	104.75	6	88.68	Europe
Belgium	99.60	7	86.79	Europe
Italy	96.23	8	84.91	Europe
Netherlands	95.15	9	83.02	Europe
New Zealand	91.10	10	81.13	Oceania
Hong Kong	89.26	11	79.25	Asia
Australia	88.19	12	77.36	Oceania
Spain	80.70	13	75.47	Europe
Israel	73.98	14	73.58	the Middle East
Ireland	73.37	15	71.70	Europe
Norway	70.89	16	69.81	Europe
Taiwan	61.14	17	67.92	Asia
Portugal	55.02	18	66.04	Europe
Switzerland	53.53	19	64.15	Europe
Greece	50.13	20	62.26	Europe
Luxembourg	46.29	21	60.38	Europe
Czech Republic	44.63	22	58.49	Europe
Japan	43.36	23	56.60	Asia
Finland	41.96	24	54.72	Europe
Argentina	41.57	25	52.83	Latin America
South Korea	40.63	26	50.94	Asia
Sweden	40.44	27	49.06	Europe
Denmark	39.29	28	47.17	Europe
USA	37.70	29	45.28	North America
Russian Federation	36.61	31	41.51	Europe
Hungary	32.89	32	39.62	Europe
Poland	26.90	33	37.74	Europe
Turkey	22.44	34	35.85	the Middle East
Mexico	22.38	35	33.96	Latin America
Malaysia	8.66	37	30.19	Asia
South Africa	8.65	38	28.30	Africa
Brazil	7.84	39	26.42	Latin America
Chile	7.46	40	24.53	Latin America
Thailand	5.67	41	22.64	Asia
Peru	4.19	44	16.98	Latin America
Philippines	2.51	46	13.21	Asia
Indonesia	1.99	48	9.43	Asia
China	1.22	51	3.77	Asia
Pakistan	1.20	52	1.89	the Middle East
India	1.08	53	0.00	Asia

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Property Plant and Equipment - Net
(Air and Water Resource and Solid Waste Management)

Countries in Asia	Value (\$K/employee)	Rank	Percentile
Singapore	115.93	1	96.15
Hong Kong	89.26	2	92.31
Taiwan	61.14	3	88.46
Brunei	48.34	4	84.62
Japan	43.36	5	80.77
Macau	40.96	6	76.92
South Korea	40.63	7	73.08
Seychelles	34.16	8	69.23
Malaysia	8.66	9	65.38
Thailand	5.67	10	61.54
Mongolia	5.06	11	57.69
North Korea	4.06	12	53.85
Papua New Guinea	2.84	13	50.00
Burma	2.52	14	46.15
Philippines	2.51	15	42.31
Indonesia	1.99	16	38.46
Maldives	1.81	17	34.62
Sri Lanka	1.43	18	30.77
China	1.22	19	26.92
India	1.08	20	23.08
Cambodia	0.82	21	19.23
Laos	0.79	22	15.38
Vietnam	0.72	23	11.54
Bangladesh	0.61	24	7.69
Bhutan	0.58	25	3.85
Nepal	0.52	26	0.00

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

3.7 PRODUCTIVITY IN TAIWAN: LIABILITY-LABOR RATIOS

3.7.1 Overview

In this chapter we consider the liability-labor ratios of companies operating in Taiwan benchmarked against global averages for air and water resource and solid waste management. For ratios where there are large deviations between Taiwan and the benchmarks, graphics are provided (sometimes referred to as a “gap” analysis). Then the distribution of productivity ratios is presented in the form of ranks and percentiles. Certain key liability-labor ratios are highlighted for air and water resource and solid waste management across countries in the comparison group. Definitions of liability statement terms are given in Chapter 3.

In the case of liability-labor ratios, this report maintains comparability over time and across countries by using a common currency (the US dollar) and relates each measure to a “per employee basis”. Ratios are projected using raw financial statistics and, as ratios, are therefore comparable. Given a country’s human resource ratios, the resulting figures are benchmarked across regional and global averages.

I then report the larger liability-labor ratio gaps for air and water resource and solid waste management that Taiwan has vis-à-vis the worldwide average. Again, a gap need not be a bad sign. Rather, it is simply a substantial difference that might merit further attention or signal a firm’s relative incentive to invest locally. All figures are projections, so due caution is required.

3.7.2 Liability to Labor: Outlook

The following tables and graphs are prepared using the methodology described at the beginning of this section. All units are in thousands of US dollars per employee. All figures are current-year projections for air and water resource and solid waste management in Taiwan based on latest financial results available.

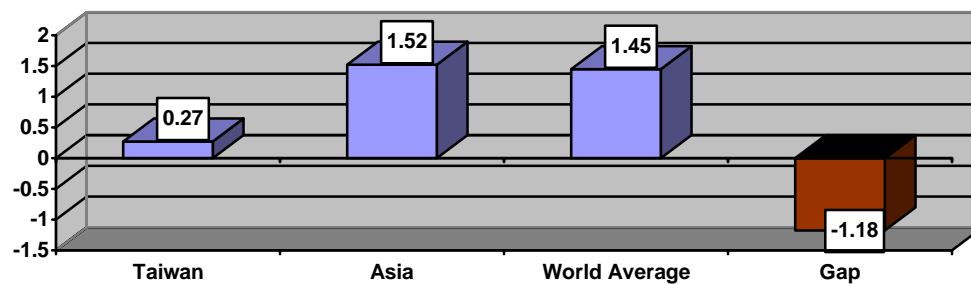
Labor-liability Ratios (\$k/employee)	Taiwan	Asia	World Avg.
Short Term Debt & Current Portion of Long Term Debt	0.27	1.52	1.45
Other Current Liabilities	4.67	7.12	5.75
Current Liabilities - Total	11.54	13.14	10.21
Long Term Debt	23.28	7.66	6.15
Long Term Debt Excluding Capitalized Leases	23.28	7.24	6.03
Deferred Taxes	6.11	1.24	0.62
Total Liabilities	43.42	24.37	18.70
Common Equity	77.70	26.25	18.13
Retained Earnings	19.13	5.58	3.53
Total Liabilities & Shareholders Equity	121.11	51.54	37.98

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

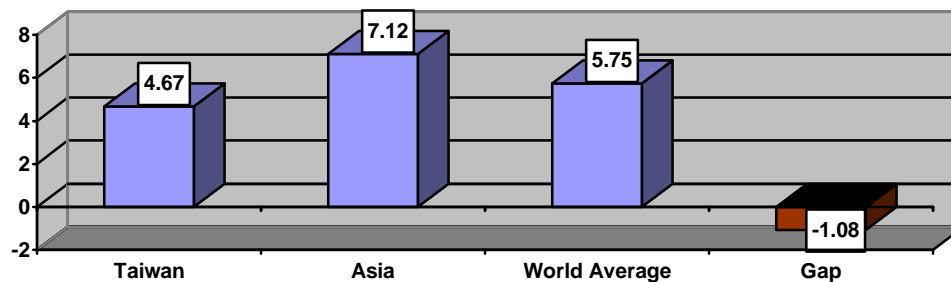
3.7.3 Liability and Equity to Labor: International Gaps

The following graphics summarize for air and water resource and solid waste management the large labor-liability gaps between firms operating in Taiwan and the world average. A gap cannot necessarily be interpreted as a positive or negative reflection on performance. Gaps may signal areas of specialization, market focus, or expertise. More contextual information is required to fully interpret these gaps. The gaps highlighted here are simply those that are large.

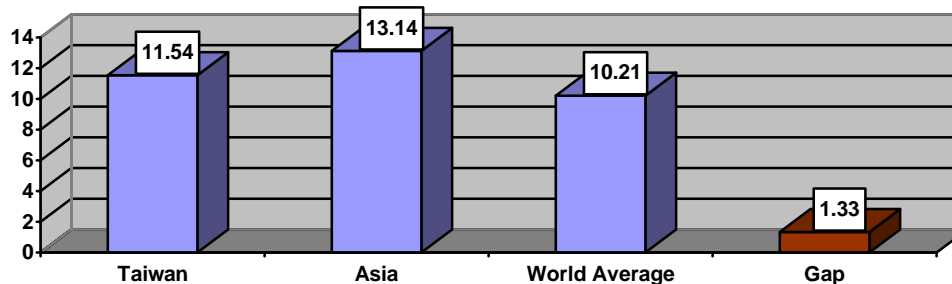
Gap: Short Term Debt & Current Portion of Long Term Debt (\$k/employee)

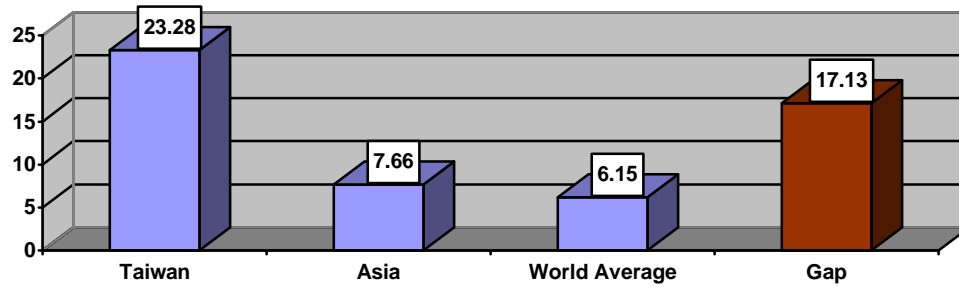
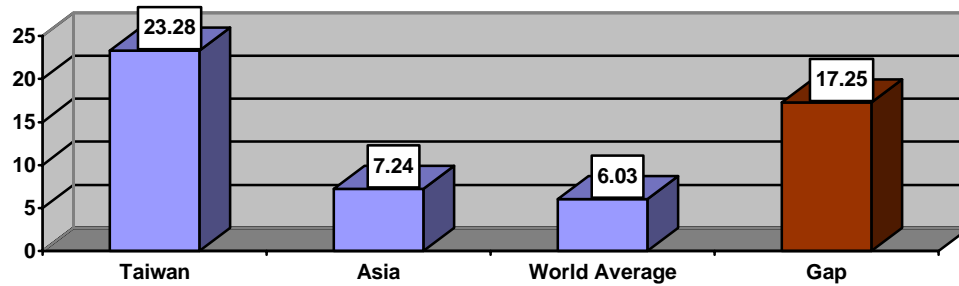
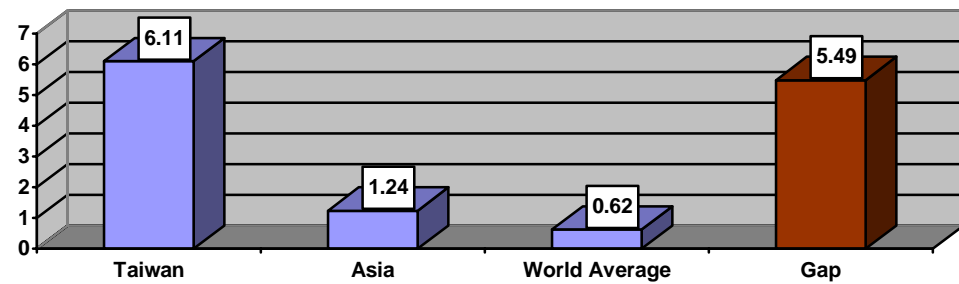
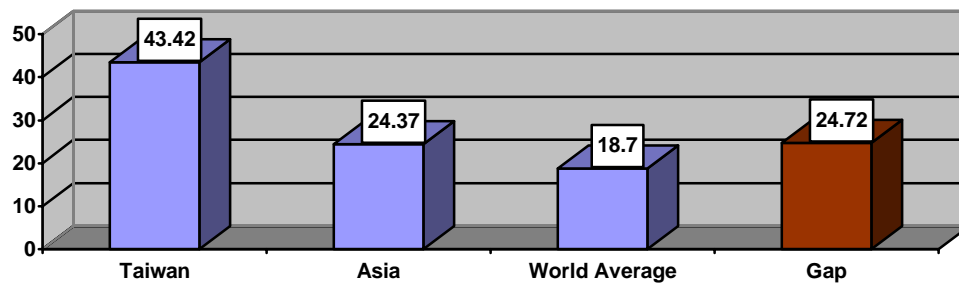


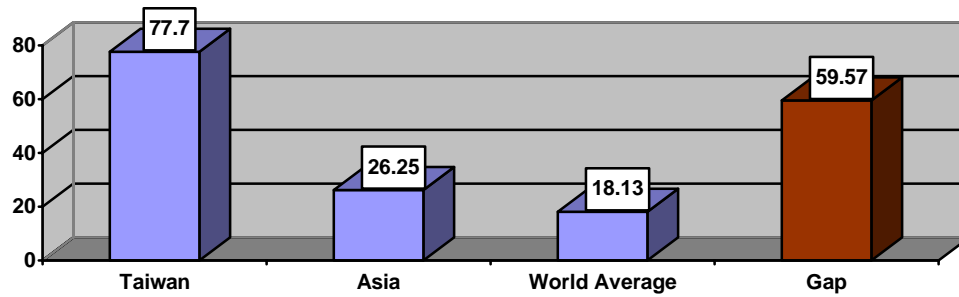
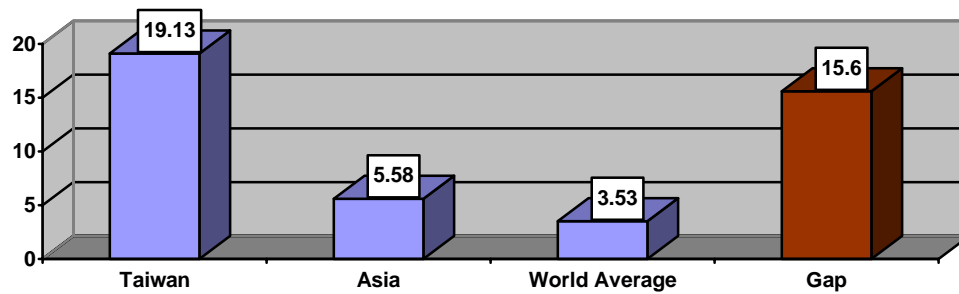
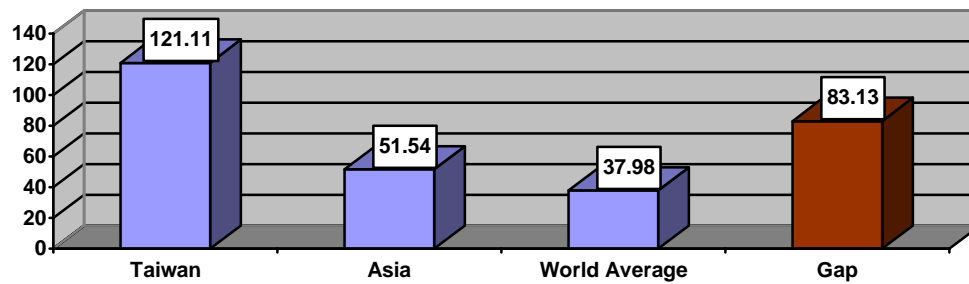
Gap: Other Current Liabilities (\$k/employee)



Gap: Current Liabilities - Total (\$k/employee)



Gap: Long Term Debt (\$k/employee)**Gap: Long Term Debt Excluding Capitalized Leases (\$k/employee)****Gap: Deferred Taxes (\$k/employee)****Gap: Total Liabilities (\$k/employee)**

Gap: Common Equity (\$k/employee)**Gap: Retained Earnings (\$k/employee)****Gap: Total Liabilities & Shareholders Equity (\$k/employee)**

3.7.4 Key Percentiles and Rankings

We now consider the distribution of liability-labor ratios using ranks and percentiles across . What percent of countries have a value lower or higher than Taiwan (what is the indicator's rank or percentile)? The table below answers this question with respect to liability-labor ratios. The ranks and percentiles indicate, from highest to lowest, where a value falls within the distribution of all countries considered in the global benchmark (the number of countries in the benchmark per line item may vary, as indicated in the Rank). Again, a high or low figure does not necessarily indicate good or bad performance or productivity. After the summary table below, a few key liability-labor ratios are highlighted in additional tables.

Liability Structure (\$k/employee)	Taiwan	Rank of Total	Percentile
Short Term Debt & Current Portion of Long Term Debt	0.27	41 of 53	22.64
Other Current Liabilities	4.67	34 of 53	35.85
Current Liabilities - Total	11.54	31 of 53	41.51
Long Term Debt	23.28	19 of 53	64.15
Long Term Debt Excluding Capitalized Leases	23.28	19 of 53	64.15
Deferred Taxes	6.11	6 of 53	88.68
Total Liabilities	43.42	24 of 53	54.72
Common Equity	77.70	7 of 53	86.79
Retained Earnings	19.13	8 of 53	84.91
Total Liabilities & Shareholders Equity	121.11	17 of 53	67.92

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Current Liabilities - Total

Countries	Value (\$K/employee)	Rank	Percentile	Region
Norway	89.29	1	98.11	Europe
Switzerland	67.42	2	96.23	Europe
Luxembourg	58.30	3	94.34	Europe
Japan	54.61	4	92.45	Asia
Finland	52.84	5	90.57	Europe
Sweden	50.94	6	88.68	Europe
Denmark	49.49	7	86.79	Europe
USA	47.49	8	84.91	North America
the United Kingdom	37.34	9	83.02	Europe
Singapore	36.89	10	81.13	Asia
Malaysia	28.03	11	79.25	Asia
South Africa	28.01	12	77.36	Africa
Brazil	25.38	13	75.47	Latin America
Chile	24.15	14	73.58	Latin America
Thailand	18.35	15	71.70	Asia
New Zealand	17.20	16	69.81	Oceania
Hong Kong	16.85	17	67.92	Asia
Spain	15.24	19	64.15	Europe
Germany	14.75	20	62.26	Europe
Israel	13.97	22	58.49	the Middle East
Ireland	13.85	23	56.60	Europe
Canada	13.72	24	54.72	North America
Peru	13.56	25	52.83	Latin America
France	13.49	26	50.94	Europe
Austria	13.35	27	49.06	Europe
Belgium	12.69	28	47.17	Europe
Italy	12.26	29	45.28	Europe
Netherlands	12.12	30	43.40	Europe
Taiwan	11.54	31	41.51	Asia
Australia	11.24	32	39.62	Oceania
Portugal	10.39	33	37.74	Europe
Greece	9.47	35	33.96	Europe
Czech Republic	8.43	36	32.08	Europe
Philippines	8.14	37	30.19	Asia
Argentina	7.85	38	28.30	Latin America
South Korea	7.67	39	26.42	Asia
Russian Federation	6.91	42	20.75	Europe
Indonesia	6.44	43	18.87	Asia
Hungary	6.21	44	16.98	Europe
Poland	5.08	46	13.21	Europe
Turkey	4.24	48	9.43	the Middle East
Mexico	4.22	49	7.55	Latin America
China	3.95	50	5.66	Asia
Pakistan	3.88	52	1.89	the Middle East
India	3.49	53	0.00	Asia

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Current Liabilities - Total
(Air and Water Resource and Solid Waste Management)

Countries in Asia	Value (\$K/employee)	Rank	Percentile
Brunei	60.88	1	96.15
Japan	54.61	2	92.31
Singapore	36.89	3	88.46
Malaysia	28.03	4	84.62
Thailand	18.35	5	80.77
Hong Kong	16.85	6	76.92
Mongolia	16.37	7	73.08
North Korea	13.16	8	69.23
Taiwan	11.54	9	65.38
Papua New Guinea	9.20	10	61.54
Burma	8.17	11	57.69
Philippines	8.14	12	53.85
Macau	7.73	13	50.00
South Korea	7.67	14	46.15
Seychelles	6.45	15	42.31
Indonesia	6.44	16	38.46
Maldives	5.87	17	34.62
Sri Lanka	4.63	18	30.77
China	3.95	19	26.92
India	3.49	20	23.08
Cambodia	2.65	21	19.23
Laos	2.56	22	15.38
Vietnam	2.32	23	11.54
Bangladesh	1.99	24	7.69
Bhutan	1.89	25	3.85
Nepal	1.70	26	0.00

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Long Term Debt

Countries	Value (\$K/employee)	Rank	Percentile	Region
Germany	50.61	1	98.11	Europe
the United Kingdom	50.13	2	96.23	Europe
Singapore	49.53	3	94.34	Asia
Canada	47.07	4	92.45	North America
France	46.29	5	90.57	Europe
Austria	45.78	6	88.68	Europe
Belgium	43.53	7	86.79	Europe
Italy	42.06	8	84.91	Europe
Netherlands	41.59	9	83.02	Europe
Australia	38.55	10	81.13	Oceania
Norway	37.14	11	79.25	Europe
New Zealand	34.68	12	77.36	Oceania
Hong Kong	33.99	13	75.47	Asia
Spain	30.73	14	73.58	Europe
Israel	28.17	15	71.70	the Middle East
Switzerland	28.04	16	69.81	Europe
Ireland	27.93	17	67.92	Europe
Luxembourg	24.25	18	66.04	Europe
Taiwan	23.28	19	64.15	Asia
Japan	22.71	20	62.26	Asia
Finland	21.98	21	60.38	Europe
Sweden	21.18	22	58.49	Europe
Portugal	20.95	23	56.60	Europe
Denmark	20.58	24	54.72	Europe
USA	19.75	25	52.83	North America
Greece	19.09	26	50.94	Europe
Czech Republic	16.99	27	49.06	Europe
Argentina	15.83	28	47.17	Latin America
South Korea	15.47	29	45.28	Asia
Russian Federation	13.94	31	41.51	Europe
Hungary	12.52	32	39.62	Europe
Poland	10.24	33	37.74	Europe
Turkey	8.54	34	35.85	the Middle East
Mexico	8.52	35	33.96	Latin America
Malaysia	0.04	37	30.19	Asia
South Africa	0.04	38	28.30	Africa
Brazil	0.04	39	26.42	Latin America
Chile	0.04	40	24.53	Latin America
Thailand	0.03	41	22.64	Asia
Peru	0.02	44	16.98	Latin America
Philippines	0.01	46	13.21	Asia
Indonesia	0.01	48	9.43	Asia
China	0.01	51	3.77	Asia
Pakistan	0.01	52	1.89	the Middle East
India	0.01	53	0.00	Asia

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Long Term Debt (Air and Water Resource and Solid Waste Management)

Countries in Asia	Value (\$K/employee)	Rank	Percentile
Singapore	49.53	1	96.15
Hong Kong	33.99	2	92.31
Brunei	25.32	3	88.46
Taiwan	23.28	4	84.62
Japan	22.71	5	80.77
Macau	15.60	6	76.92
South Korea	15.47	7	73.08
Seychelles	13.01	8	69.23
Malaysia	0.04	9	65.38
Thailand	0.03	10	61.54
Mongolia	0.02	11	57.69
North Korea	0.02	12	53.85
Papua New Guinea	0.01	13	50.00
Burma	0.01	14	46.15
Philippines	0.01	15	42.31
Indonesia	0.01	16	38.46
Maldives	0.01	17	34.62
Sri Lanka	0.01	18	30.77
China	0.01	19	26.92
India	0.01	20	23.08
Cambodia	0.00	21	19.23
Laos	0.00	22	15.38
Vietnam	0.00	23	11.54
Bangladesh	0.00	24	7.69
Bhutan	0.00	25	3.85
Nepal	0.00	26	0.00

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Total Liabilities

Countries	Value (\$K/employee)	Rank	Percentile	Region
Norway	163.39	1	98.11	Europe
Switzerland	123.37	2	96.23	Europe
Luxembourg	106.69	3	94.34	Europe
Japan	99.94	4	92.45	Asia
Finland	96.70	5	90.57	Europe
the United Kingdom	95.48	6	88.68	Europe
Singapore	94.32	7	86.79	Asia
Sweden	93.21	8	84.91	Europe
Denmark	90.57	9	83.02	Europe
USA	86.90	10	81.13	North America
Germany	66.49	11	79.25	Europe
New Zealand	64.69	12	77.36	Oceania
Hong Kong	63.39	13	75.47	Asia
Canada	61.84	14	73.58	North America
France	60.82	15	71.70	Europe
Austria	60.15	16	69.81	Europe
Spain	57.31	17	67.92	Europe
Belgium	57.20	18	66.04	Europe
Italy	55.26	19	64.15	Europe
Netherlands	54.64	20	62.26	Europe
Israel	52.54	21	60.38	the Middle East
Ireland	52.10	22	58.49	Europe
Australia	50.65	23	56.60	Oceania
Taiwan	43.42	24	54.72	Asia
Portugal	39.08	25	52.83	Europe
Greece	35.60	26	50.94	Europe
Czech Republic	31.70	27	49.06	Europe
Argentina	29.52	28	47.17	Latin America
South Korea	28.85	29	45.28	Asia
Malaysia	28.01	30	43.40	Asia
South Africa	28.00	31	41.51	Africa
Russian Federation	26.00	33	37.74	Europe
Brazil	25.36	34	35.85	Latin America
Chile	24.13	35	33.96	Latin America
Hungary	23.36	36	32.08	Europe
Poland	19.10	37	30.19	Europe
Thailand	18.34	38	28.30	Asia
Turkey	15.93	39	26.42	the Middle East
Mexico	15.89	40	24.53	Latin America
Peru	13.55	44	16.98	Latin America
Philippines	8.14	46	13.21	Asia
Indonesia	6.44	48	9.43	Asia
China	3.95	51	3.77	Asia
Pakistan	3.88	52	1.89	the Middle East
India	3.49	53	0.00	Asia

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Total Liabilities
(Air and Water Resource and Solid Waste Management)

Countries in Asia	Value (\$K/employee)	Rank	Percentile
Brunei	111.41	1	96.15
Japan	99.94	2	92.31
Singapore	94.32	3	88.46
Hong Kong	63.39	4	84.62
Taiwan	43.42	5	80.77
Macau	29.09	6	76.92
South Korea	28.85	7	73.08
Malaysia	28.01	8	69.23
Seychelles	24.26	9	65.38
Thailand	18.34	10	61.54
Mongolia	16.36	11	57.69
North Korea	13.16	12	53.85
Papua New Guinea	9.20	13	50.00
Burma	8.17	14	46.15
Philippines	8.14	15	42.31
Indonesia	6.44	16	38.46
Maldives	5.87	17	34.62
Sri Lanka	4.63	18	30.77
China	3.95	19	26.92
India	3.49	20	23.08
Cambodia	2.65	21	19.23
Laos	2.56	22	15.38
Vietnam	2.32	23	11.54
Bangladesh	1.99	24	7.69
Bhutan	1.89	25	3.85
Nepal	1.69	26	0.00

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Common Equity

Countries	Value (\$K/employee)	Rank	Percentile	Region
New Zealand	115.77	1	98.11	Oceania
Hong Kong	113.44	2	96.23	Asia
Spain	102.56	3	94.34	Europe
Israel	94.01	4	92.45	the Middle East
Ireland	93.24	5	90.57	Europe
Norway	91.62	6	88.68	Europe
Taiwan	77.70	7	86.79	Asia
the United Kingdom	71.78	8	84.91	Europe
Singapore	70.91	9	83.02	Asia
Portugal	69.93	10	81.13	Europe
Switzerland	69.18	11	79.25	Europe
Greece	63.71	12	77.36	Europe
Luxembourg	59.82	13	75.47	Europe
Czech Republic	56.72	14	73.58	Europe
Japan	56.04	15	71.70	Asia
Finland	54.22	16	69.81	Europe
Argentina	52.83	17	67.92	Latin America
Sweden	52.27	18	66.04	Europe
South Korea	51.63	19	64.15	Asia
Denmark	50.78	20	62.26	Europe
USA	48.73	21	60.38	North America
Russian Federation	46.52	23	56.60	Europe
Germany	45.96	24	54.72	Europe
Canada	42.75	25	52.83	North America
France	42.04	26	50.94	Europe
Hungary	41.80	27	49.06	Europe
Austria	41.58	28	47.17	Europe
Belgium	39.54	29	45.28	Europe
Italy	38.20	30	43.40	Europe
Netherlands	37.77	31	41.51	Europe
Australia	35.01	32	39.62	Oceania
Poland	34.19	33	37.74	Europe
Malaysia	31.25	34	35.85	Asia
South Africa	31.23	35	33.96	Africa
Turkey	28.51	36	32.08	the Middle East
Mexico	28.44	37	30.19	Latin America
Brazil	28.29	38	28.30	Latin America
Chile	26.92	39	26.42	Latin America
Thailand	20.46	41	22.64	Asia
Peru	15.12	44	16.98	Latin America
Philippines	9.08	46	13.21	Asia
Indonesia	7.18	48	9.43	Asia
China	4.40	51	3.77	Asia
Pakistan	4.33	52	1.89	the Middle East
India	3.90	53	0.00	Asia

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Common Equity
(Air and Water Resource and Solid Waste Management)

Countries in Asia	Value (\$K/employee)	Rank	Percentile
Hong Kong	113.44	1	96.15
Taiwan	77.70	2	92.31
Singapore	70.91	3	88.46
Brunei	62.47	4	84.62
Japan	56.04	5	80.77
Macau	52.06	6	76.92
South Korea	51.63	7	73.08
Seychelles	43.42	8	69.23
Malaysia	31.25	9	65.38
Thailand	20.46	10	61.54
Mongolia	18.25	11	57.69
North Korea	14.67	12	53.85
Papua New Guinea	10.26	13	50.00
Burma	9.11	14	46.15
Philippines	9.08	15	42.31
Indonesia	7.18	16	38.46
Maldives	6.54	17	34.62
Sri Lanka	5.16	18	30.77
China	4.40	19	26.92
India	3.90	20	23.08
Cambodia	2.96	21	19.23
Laos	2.85	22	15.38
Vietnam	2.59	23	11.54
Bangladesh	2.22	24	7.69
Bhutan	2.11	25	3.85
Nepal	1.89	26	0.00

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Retained Earnings

Countries	Value (\$K/employee)	Rank	Percentile	Region
New Zealand	28.51	1	98.11	Oceania
Hong Kong	27.94	2	96.23	Asia
Norway	26.23	3	94.34	Europe
Spain	25.26	4	92.45	Europe
Israel	23.15	5	90.57	the Middle East
Ireland	22.96	6	88.68	Europe
Switzerland	19.80	7	86.79	Europe
Taiwan	19.13	8	84.91	Asia
Portugal	17.22	9	83.02	Europe
Luxembourg	17.12	10	81.13	Europe
Japan	16.04	11	79.25	Asia
Greece	15.69	12	77.36	Europe
Finland	15.52	13	75.47	Europe
Sweden	14.96	14	73.58	Europe
Denmark	14.54	15	71.70	Europe
Czech Republic	13.97	16	69.81	Europe
USA	13.95	17	67.92	North America
Argentina	13.01	18	66.04	Latin America
South Korea	12.71	19	64.15	Asia
Russian Federation	11.46	21	60.38	Europe
the United Kingdom	11.45	22	58.49	Europe
Singapore	11.32	23	56.60	Asia
Hungary	10.29	24	54.72	Europe
Poland	8.42	25	52.83	Europe
Turkey	7.02	26	50.94	the Middle East
Mexico	7.00	27	49.06	Latin America
Germany	4.29	29	45.28	Europe
Canada	3.99	30	43.40	North America
France	3.92	31	41.51	Europe
Austria	3.88	32	39.62	Europe
Belgium	3.69	33	37.74	Europe
Italy	3.56	34	35.85	Europe
Netherlands	3.52	35	33.96	Europe
Malaysia	3.35	36	32.08	Asia
South Africa	3.34	37	30.19	Africa
Australia	3.27	38	28.30	Oceania
Brazil	3.03	39	26.42	Latin America
Chile	2.88	40	24.53	Latin America
Thailand	2.19	41	22.64	Asia
Peru	1.62	44	16.98	Latin America
Philippines	0.97	46	13.21	Asia
Indonesia	0.77	48	9.43	Asia
China	0.47	51	3.77	Asia
Pakistan	0.46	52	1.89	the Middle East
India	0.42	53	0.00	Asia

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Retained Earnings
(Air and Water Resource and Solid Waste Management)

Countries in Asia	Value (\$K/employee)	Rank	Percentile
Hong Kong	27.94	1	96.15
Taiwan	19.13	2	92.31
Brunei	17.88	3	88.46
Japan	16.04	4	84.62
Macau	12.82	5	80.77
South Korea	12.71	6	76.92
Singapore	11.32	7	73.08
Seychelles	10.69	8	69.23
Malaysia	3.35	9	65.38
Thailand	2.19	10	61.54
Mongolia	1.96	11	57.69
North Korea	1.57	12	53.85
Papua New Guinea	1.10	13	50.00
Burma	0.98	14	46.15
Philippines	0.97	15	42.31
Indonesia	0.77	16	38.46
Maldives	0.70	17	34.62
Sri Lanka	0.55	18	30.77
China	0.47	19	26.92
India	0.42	20	23.08
Cambodia	0.32	21	19.23
Laos	0.31	22	15.38
Vietnam	0.28	23	11.54
Bangladesh	0.24	24	7.69
Bhutan	0.23	25	3.85
Nepal	0.20	26	0.00

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

3.8 PRODUCTIVITY IN TAIWAN: INCOME-LABOR RATIOS

3.8.1 Overview

In this chapter we consider the income-labor ratios for air and water resource and solid waste management in Taiwan benchmarked against global averages. For ratios where there are large deviations between the average firm operating in Taiwan and the benchmarks, graphics are provided (sometimes referred to as a “gap” analysis). Then the distribution of ratios is presented in the form of ranks and percentiles. Certain key income-labor ratios are highlighted across countries in the comparison group.

In the case of income-labor ratios, this report maintains comparability over time and across countries by using a common currency (the US dollar) and relates each measure to a “per employee basis”. Ratios are projected using raw financial statistics and, as ratios, are therefore comparable. Given a country’s human resource ratios, the resulting figures are benchmarked across regional and global averages.

We then report the larger income-labor ratio gaps for air and water resource and solid waste management that Taiwan has vis-à-vis the worldwide average. Again, a gap need not be a bad sign. Rather, it is simply a substantial difference that might merit further attention or signal a firm’s relative incentive to invest locally. All figures are projections, so due caution is required.

3.8.2 Income to Labor: Outlook

The following tables and graphs are prepared using the methodology described at the beginning of this section. All units are in thousands of US dollars per employee. All figures are current-year projections for air and water resource and solid waste management in Taiwan based on latest financial results available.

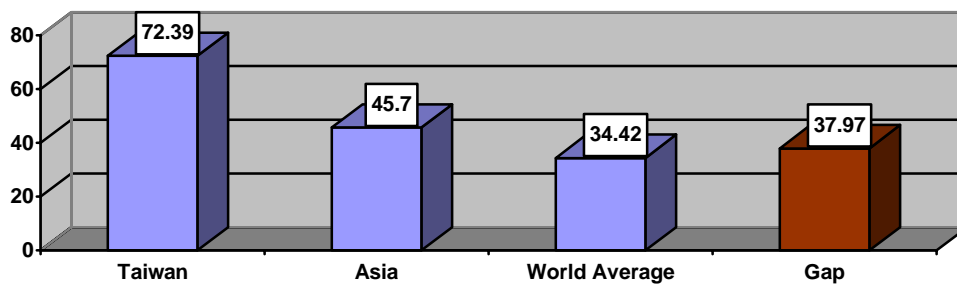
Labor-income Ratios (\$k/employee)	Taiwan	Asia	World Avg.
Net Sales or Revenues	72.39	45.70	34.42
Depreciation, Depletion & Amortization	9.87	2.91	2.08
Operating Income	13.02	3.94	2.46
Other Income/Expense Net	0.06	0.14	0.12
Earnings Before Interest and Taxes (EBIT)	13.09	4.09	2.58
Interest Expense on Debt	1.75	0.67	0.48
Pretax Income	11.34	3.42	2.10
Net Income Before Extra Items/Prefer Dividends	6.67	1.89	1.11
Net Income Before Preferred Dividends	6.67	1.89	1.11
Net Income Available to Common	6.67	1.89	1.11

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

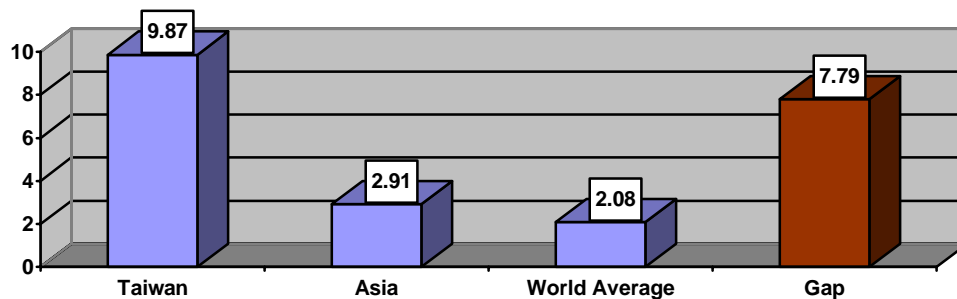
3.8.3 Income to Labor: Gaps

The following graphics summarize for air and water resource and solid waste management the large labor-income gaps between firms operating in Taiwan and the world average. A gap cannot necessarily be interpreted as a positive or negative reflection on performance. Gaps may signal areas of specialization, market focus, or expertise. More contextual information is required to fully interpret these gaps. The gaps highlighted here are simply those that are large.

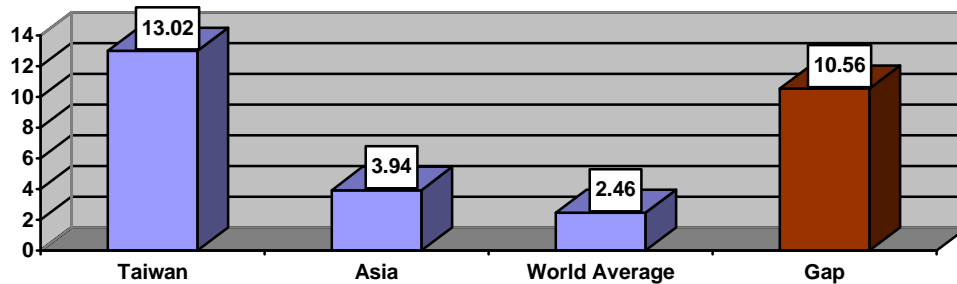
Gap: Net Sales or Revenues (\$k/employee)

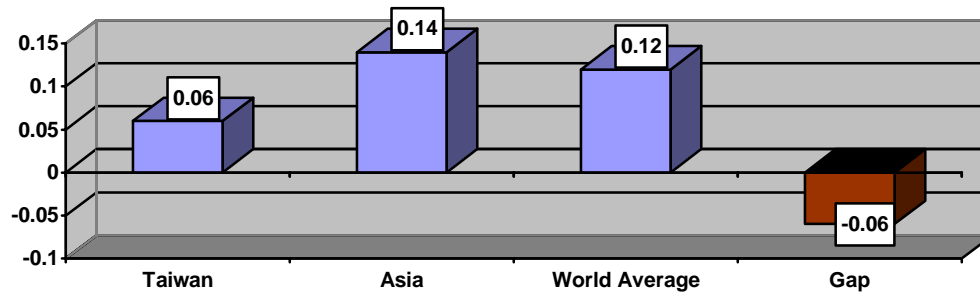
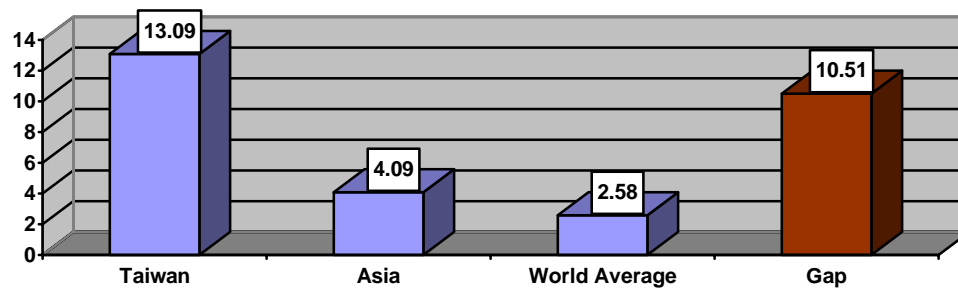
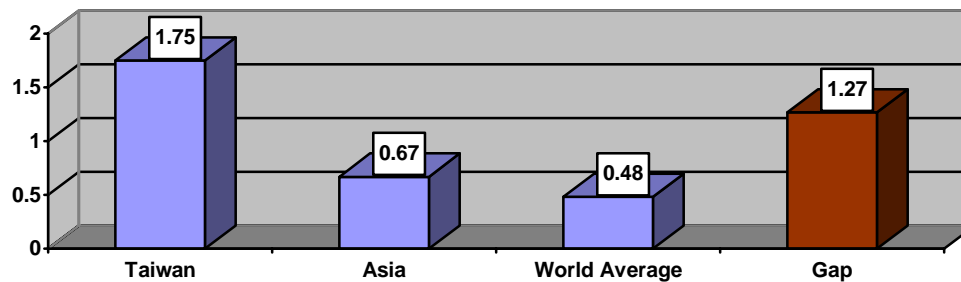
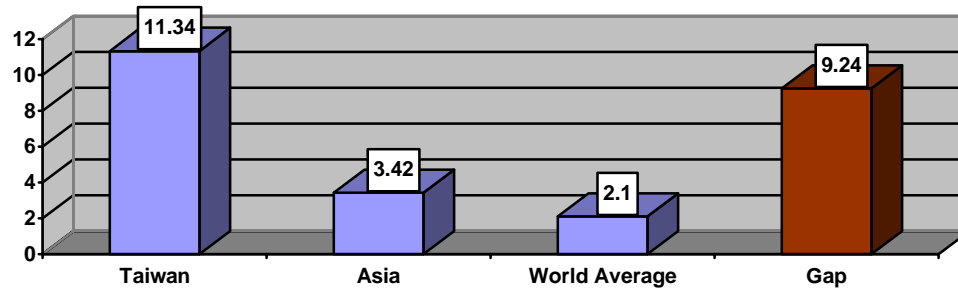


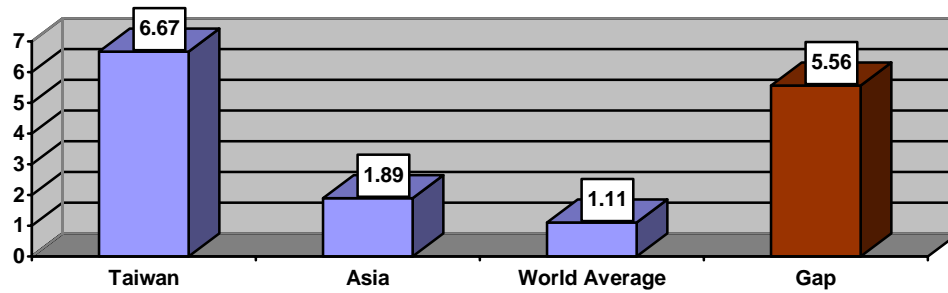
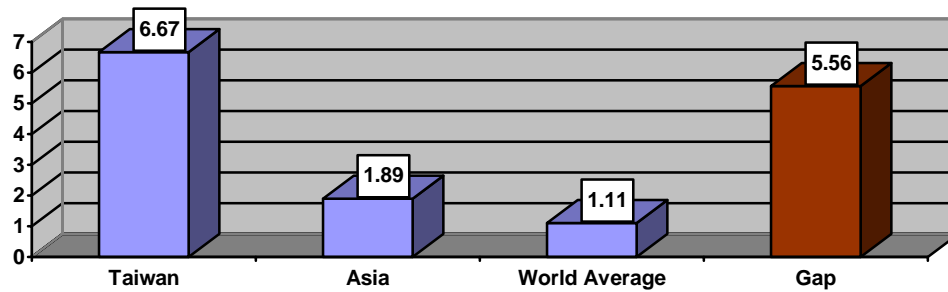
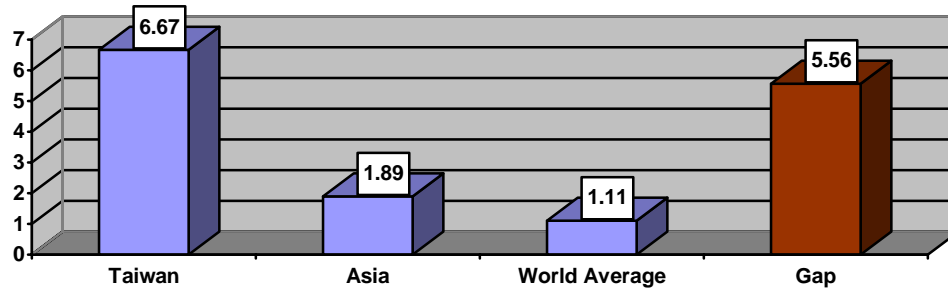
Gap: Depreciation, Depletion & Amortization (\$k/employee)



Gap: Operating Income (\$k/employee)



Gap: Other Income/Expense Net (\$k/employee)**Gap: Earnings Before Interest and Taxes (EBIT) (\$k/employee)****Gap: Interest Expense on Debt (\$k/employee)****Gap: Pretax Income (\$k/employee)**

Gap: Net Income Before Extra Items/Prefer Dividends (\$k/employee)**Gap: Net Income Before Preferred Dividends (\$k/employee)****Gap: Net Income Available to Common (\$k/employee)**

3.8.4 Key Percentiles and Rankings

We now consider the distribution of income-labor ratios using ranks and percentiles across . What percent of countries have a value lower or higher than Taiwan (what is the ratio's rank or percentile)? The table below answers this question with respect to income-labor ratios. The ranks and percentiles indicate, from highest to lowest, where a value falls within the distribution of all countries considered in the global benchmark (the number of countries in the benchmark per line item may vary, as indicated in the Rank). Again, a high or low figure does not necessarily indicate good or bad performance or productivity. After the summary table below, a few key income-labor ratios are highlighted in additional tables.

Income Structure (\$k/employee)	Taiwan	Rank of Total	Percentile
Net Sales or Revenues	72.39	18 of 53	66.04
Depreciation, Depletion & Amortization	9.87	16 of 53	69.81
Operating Income	13.02	13 of 53	75.47
Other Income/Expense Net	0.06	33 of 53	37.74
Earnings Before Interest and Taxes (EBIT)	13.09	13 of 53	75.47
Interest Expense on Debt	1.75	24 of 53	54.72
Pretax Income	11.34	12 of 53	77.36
Net Income Before Extra Items/Prefer Dividends	6.67	12 of 53	77.36
Net Income Before Preferred Dividends	6.67	12 of 53	77.36
Net Income Available to Common	6.67	12 of 53	77.36

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Operating Income

Countries	Value (\$K/employee)	Rank	Percentile	Region
Norway	23.82	1	98.11	Europe
New Zealand	19.40	2	96.23	Oceania
Hong Kong	19.01	3	94.34	Asia
Switzerland	17.99	4	92.45	Europe
Spain	17.18	5	90.57	Europe
Israel	15.75	6	88.68	the Middle East
Ireland	15.62	7	86.79	Europe
Luxembourg	15.56	8	84.91	Europe
Japan	14.57	9	83.02	Asia
Finland	14.10	10	81.13	Europe
Sweden	13.59	11	79.25	Europe
Denmark	13.20	12	77.36	Europe
Taiwan	13.02	13	75.47	Asia
USA	12.67	14	73.58	North America
Portugal	11.72	15	71.70	Europe
the United Kingdom	11.43	16	69.81	Europe
Singapore	11.29	17	67.92	Asia
Greece	10.68	18	66.04	Europe
Czech Republic	9.50	19	64.15	Europe
Argentina	8.85	20	62.26	Latin America
South Korea	8.65	21	60.38	Asia
Russian Federation	7.80	23	56.60	Europe
Hungary	7.00	24	54.72	Europe
Poland	5.73	25	52.83	Europe
Turkey	4.78	26	50.94	the Middle East
Mexico	4.76	27	49.06	Latin America
Germany	3.49	29	45.28	Europe
Canada	3.24	30	43.40	North America
France	3.19	31	41.51	Europe
Austria	3.15	32	39.62	Europe
Belgium	3.00	33	37.74	Europe
Italy	2.90	34	35.85	Europe
Netherlands	2.86	35	33.96	Europe
Australia	2.65	36	32.08	Oceania
Malaysia	0.76	37	30.19	Asia
South Africa	0.76	38	28.30	Africa
Brazil	0.69	39	26.42	Latin America
Chile	0.65	40	24.53	Latin America
Thailand	0.50	41	22.64	Asia
Peru	0.37	44	16.98	Latin America
Philippines	0.22	46	13.21	Asia
Indonesia	0.17	48	9.43	Asia
China	0.11	51	3.77	Asia
Pakistan	0.11	52	1.89	the Middle East
India	0.09	53	0.00	Asia

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Operating Income
(Air and Water Resource and Solid Waste Management)

Countries in Asia	Value (\$K/employee)	Rank	Percentile
Hong Kong	19.01	1	96.15
Brunei	16.24	2	92.31
Japan	14.57	3	88.46
Taiwan	13.02	4	84.62
Singapore	11.29	5	80.77
Macau	8.72	6	76.92
South Korea	8.65	7	73.08
Seychelles	7.27	8	69.23
Malaysia	0.76	9	65.38
Thailand	0.50	10	61.54
Mongolia	0.44	11	57.69
North Korea	0.36	12	53.85
Papua New Guinea	0.25	13	50.00
Burma	0.22	14	46.15
Philippines	0.22	15	42.31
Indonesia	0.17	16	38.46
Maldives	0.16	17	34.62
Sri Lanka	0.13	18	30.77
China	0.11	19	26.92
India	0.09	20	23.08
Cambodia	0.07	21	19.23
Laos	0.07	22	15.38
Vietnam	0.06	23	11.54
Bangladesh	0.05	24	7.69
Bhutan	0.05	25	3.85
Nepal	0.05	26	0.00

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Earnings Before Interest and Taxes (EBIT)

Countries	Value (\$K/employee)	Rank	Percentile	Region
Norway	24.18	1	98.11	Europe
New Zealand	19.50	2	96.23	Oceania
Hong Kong	19.11	3	94.34	Asia
Switzerland	18.25	4	92.45	Europe
Spain	17.28	5	90.57	Europe
Israel	15.84	6	88.68	the Middle East
Luxembourg	15.79	7	86.79	Europe
Ireland	15.71	8	84.91	Europe
Japan	14.79	9	83.02	Asia
Finland	14.31	10	81.13	Europe
Sweden	13.79	11	79.25	Europe
Denmark	13.40	12	77.36	Europe
Taiwan	13.09	13	75.47	Asia
USA	12.86	14	73.58	North America
Portugal	11.78	15	71.70	Europe
the United Kingdom	11.75	16	69.81	Europe
Singapore	11.61	17	67.92	Asia
Greece	10.73	18	66.04	Europe
Czech Republic	9.55	19	64.15	Europe
Argentina	8.90	20	62.26	Latin America
South Korea	8.70	21	60.38	Asia
Russian Federation	7.84	23	56.60	Europe
Hungary	7.04	24	54.72	Europe
Poland	5.76	25	52.83	Europe
Turkey	4.80	26	50.94	the Middle East
Mexico	4.79	27	49.06	Latin America
Germany	3.64	29	45.28	Europe
Canada	3.39	30	43.40	North America
France	3.33	31	41.51	Europe
Austria	3.30	32	39.62	Europe
Belgium	3.13	33	37.74	Europe
Italy	3.03	34	35.85	Europe
Netherlands	2.99	35	33.96	Europe
Australia	2.78	36	32.08	Oceania
Malaysia	1.31	37	30.19	Asia
South Africa	1.31	38	28.30	Africa
Brazil	1.18	39	26.42	Latin America
Chile	1.13	40	24.53	Latin America
Thailand	0.86	41	22.64	Asia
Peru	0.63	44	16.98	Latin America
Philippines	0.38	46	13.21	Asia
Indonesia	0.30	48	9.43	Asia
China	0.18	51	3.77	Asia
Pakistan	0.18	52	1.89	the Middle East
India	0.16	53	0.00	Asia

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Earnings Before Interest and Taxes (EBIT)
(Air and Water Resource and Solid Waste Management)

Countries in Asia	Value (\$K/employee)	Rank	Percentile
Hong Kong	19.11	1	96.15
Brunei	16.48	2	92.31
Japan	14.79	3	88.46
Taiwan	13.09	4	84.62
Singapore	11.61	5	80.77
Macau	8.77	6	76.92
South Korea	8.70	7	73.08
Seychelles	7.31	8	69.23
Malaysia	1.31	9	65.38
Thailand	0.86	10	61.54
Mongolia	0.76	11	57.69
North Korea	0.61	12	53.85
Papua New Guinea	0.43	13	50.00
Burma	0.38	14	46.15
Philippines	0.38	15	42.31
Indonesia	0.30	16	38.46
Maldives	0.27	17	34.62
Sri Lanka	0.22	18	30.77
China	0.18	19	26.92
India	0.16	20	23.08
Cambodia	0.12	21	19.23
Laos	0.12	22	15.38
Vietnam	0.11	23	11.54
Bangladesh	0.09	24	7.69
Bhutan	0.09	25	3.85
Nepal	0.08	26	0.00

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Pretax Income

Countries	Value (\$K/employee)	Rank	Percentile	Region
Norway	20.18	1	98.11	Europe
New Zealand	16.89	2	96.23	Oceania
Hong Kong	16.55	3	94.34	Asia
Switzerland	15.24	4	92.45	Europe
Spain	14.97	5	90.57	Europe
Israel	13.72	6	88.68	the Middle East
Ireland	13.61	7	86.79	Europe
Luxembourg	13.18	8	84.91	Europe
Japan	12.34	9	83.02	Asia
Finland	11.94	10	81.13	Europe
Sweden	11.51	11	79.25	Europe
Taiwan	11.34	12	77.36	Asia
Denmark	11.19	13	75.47	Europe
USA	10.73	14	73.58	North America
Portugal	10.20	15	71.70	Europe
Greece	9.30	16	69.81	Europe
Czech Republic	8.28	17	67.92	Europe
Argentina	7.71	18	66.04	Latin America
South Korea	7.53	19	64.15	Asia
the United Kingdom	7.05	20	62.26	Europe
Singapore	6.96	21	60.38	Asia
Russian Federation	6.79	23	56.60	Europe
Hungary	6.10	24	54.72	Europe
Poland	4.99	25	52.83	Europe
Turkey	4.16	26	50.94	the Middle East
Mexico	4.15	27	49.06	Latin America
Malaysia	1.30	29	45.28	Asia
South Africa	1.30	30	43.40	Africa
Brazil	1.18	31	41.51	Latin America
Chile	1.12	32	39.62	Latin America
Germany	0.94	33	37.74	Europe
Canada	0.87	34	35.85	North America
France	0.86	35	33.96	Europe
Thailand	0.85	36	32.08	Asia
Austria	0.85	37	30.19	Europe
Belgium	0.81	38	28.30	Europe
Italy	0.78	39	26.42	Europe
Netherlands	0.77	40	24.53	Europe
Australia	0.71	41	22.64	Oceania
Peru	0.63	44	16.98	Latin America
Philippines	0.38	46	13.21	Asia
Indonesia	0.30	48	9.43	Asia
China	0.18	51	3.77	Asia
Pakistan	0.18	52	1.89	the Middle East
India	0.16	53	0.00	Asia

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

Pretax Income
(Air and Water Resource and Solid Waste Management)

Countries in Asia	Value (\$K/employee)	Rank	Percentile
Hong Kong	16.55	1	96.15
Brunei	13.76	2	92.31
Japan	12.34	3	88.46
Taiwan	11.34	4	84.62
Macau	7.60	5	80.77
South Korea	7.53	6	76.92
Singapore	6.96	7	73.08
Seychelles	6.34	8	69.23
Malaysia	1.30	9	65.38
Thailand	0.85	10	61.54
Mongolia	0.76	11	57.69
North Korea	0.61	12	53.85
Papua New Guinea	0.43	13	50.00
Burma	0.38	14	46.15
Philippines	0.38	15	42.31
Indonesia	0.30	16	38.46
Maldives	0.27	17	34.62
Sri Lanka	0.21	18	30.77
China	0.18	19	26.92
India	0.16	20	23.08
Cambodia	0.12	21	19.23
Laos	0.12	22	15.38
Vietnam	0.11	23	11.54
Bangladesh	0.09	24	7.69
Bhutan	0.09	25	3.85
Nepal	0.08	26	0.00

Source: Philip M. Parker, Professor, INSEAD, copyright 2004

4 MACRO-ACCESSIBILITY IN TAIWAN

4.1 EXECUTIVE SUMMARY

Taiwan is small, its population is just 23 million, it has few natural resources, and it has faced enormous security challenges under conditions of severe diplomatic isolation for decades. Nevertheless, the people of Taiwan have built one of the world's top twenty economies, amassed the world's third largest stock of foreign reserves, become the global number one in the manufacture of a broad menu of leading-edge technologies, and in so doing have afforded themselves one of the highest standards of living in Asia. Taiwan has also become one of America's leading trade partners, ranking well within our top ten export markets for both agricultural and non-agricultural products. While U.S. exports to Taiwan are extremely broad-based, rice, meat, fruits, electrical power equipment, laboratory instruments, chemicals, and electronic industry components and manufacturing equipment lead the field.

Among the most impressive accomplishments of the people of Taiwan is the achievement of a vibrant representative democracy, moving from authoritarian one-party rule under martial law to a multi-party political system determined by the ballot box within less than 20 years. While many of Taiwan's political institutions and traditions are still in transition, in the area of trade and investment these winds of change have brought a high measure of transparency, accountability, and rule of law to the business environment. Taiwan's accession to the World Trade Organization (WTO) in 2002 strengthened and accelerated these trends. While this report details a number of serious concerns which the United States holds regarding individual issues such as Intellectual Property Rights (IPR) protection and public procurement, most American businesses will find this a generally open and fair place to do business.

4.2 QUALITY OF INFRASTRUCTURE

Taiwan has a well-developed infrastructure system. There are five international airports, in Taoyuan (of northern Taiwan), Taichung (of central Taiwan), Kaohsiung (of southern Taiwan), Hualien (of eastern Taiwan), and Makong (of an island in the Taiwan Straits). The airport in Hualien newly opened in 2002 and the two in Taichung and Makong, inaugurated, in early 2004 are all designed to serve international chartered flights only. Fifteen domestic airports connect major cities, sight-seeing spots and key offshore islands. Six international harbors facilitate import and export trade. Toll highways and railways form an extensive inland transport network, including a north-south freeway. The average family has more than one telephone, and the penetration rate of mobile phone services exceeded 115%. Fax machines, personal computers, and Internet communications are common for business firms. Virtually every family has access to electricity and household tap water, except in remote mountainous areas.

Taiwan's infrastructure construction efforts have improved traffic congestion and power shortage problems. Additional lanes have been added to the first north-south freeway, while the second north-south freeway was opened to traffic in early 2004. Construction of a metro system for Kaohsiung and a freeway between Taipei-Ilan is underway. Taiwan authorities recently decided to build by itself a rapid mass-transit system between CKS Airport and downtown Taipei when the local contractor closed down. Projects in the planning stage include another freeway in eastern Taiwan and three light-rail metro systems in the cities of Hsinchu, Taichung, and Tainan. The economic authorities are planning construction of five reservoirs on low land areas to ensure sufficient water supply for households and industrial users.

Taiwan's power grid network is composed of 41 hydraulic power plants, 32 thermal power plants, three nuclear power plants, and one wind-driven power plant all over the island, ensuring relatively stable power supply to households and the industrial/commercial sector.

4.3 POLITICAL RISKS

Over the past decade, Taiwan has made the transition from single-party, authoritarian rule to a democratic, multi-party political system. Martial law, which had been in force since the 1940's, was lifted in January 1988. Taiwan's first democratically elected legislature was chosen in December 1992. After the second fully democratic election for the national legislature was held in December 1995, Taiwan completed its democratization by holding the first direct election of its President in March 1996.

A defining characteristic of Taiwan's international relations is a lack of diplomatic ties with most nations of the world. The authorities on Taiwan call their government the "Republic of China," and for many years claimed to be the legitimate government of all China. The PRC, however, considers Taiwan to be a province with no right to play an independent role in world affairs. The PRC will not maintain diplomatic relations with countries that also have official ties to Taiwan. Most countries have, therefore, chosen to establish diplomatic relations with the PRC rather than with Taiwan. As of June 2004, twenty-six countries maintained diplomatic relations with Taiwan. The PRC was admitted to the United Nations and most related organizations in 1971, forcing out Taiwan. The U.S. switched diplomatic recognition to the PRC in 1979.

Although it is still stipulated in the constitution, several years ago the Taiwan authorities changed policies and no longer insist that it is the sole legitimate rulers of all of China. While still acknowledging that Taiwan is "the Republic of China", the Taiwan government now seeks recognition as one of two "legitimate political entities" in China (the other being the PRC). Under this policy, Taiwan is seeking to join various international organizations, including the United Nations, but have encountered stiff PRC opposition. Taiwan has been able to join the Asia-Pacific Economic Cooperation (APEC) dialogue as an "economy" and the World Trade Organization (WTO) as a "customs territory."

Although the United States does not have diplomatic relations with Taiwan, the U.S. maintains extensive ties with the 23 million people on Taiwan. The American Institute in Taiwan (AIT), a private, not-for-profit institution, was established in 1979 to maintain the unofficial relations between the peoples of the United States and Taiwan. More than forty other countries, including most major European and Asian nations, also maintain unofficial representation in Taiwan.

4.4 MARKETING STRATEGIES

Taiwan is the ninth largest export market for the United States. U.S. goods enjoy a reputation for quality on the island. As Taiwan is a member of the World Trade Organization (WTO) with a relatively liberalized economy, most imported products face few structural or legal barriers. Nearly every type of sales channel exists in Taiwan. U.S. goods reach end-users through agents, distributors, franchisees, direct marketing, mail order and almost any other imaginable means. Distribution policies vary with the types of products and end-users, but all distribution channels are changing rapidly under the pressures of new demands from sophisticated Taiwan consumers, intensified competition between foreign and domestic rivals, and the introduction of IT applications to the distribution chain.

The marketing of products is too complex a subject to be treated comprehensively in this brief space, so the comments made here are, of necessity, very general. Taiwan end-users tend to make purchasing decisions based primarily on price -- although a higher price may increase the attractiveness of certain kinds of consumer goods.

Taiwan is a land of small businesses and traders who import from all over the world. The strength of Taiwan's economy lies not in its few large firms -- although Taiwan has given birth to a handful of large firms whose presence is felt in world markets -- but in its multitudinous small- and medium-sized firms. There are about 1.1 million registered businesses in Taiwan. The island has 132,000 legal manufacturing plants and over 100,000 illegal factories. Reflecting the importance of personal relationships in Taiwan's society and culture, a strong local

presence, with a wholly owned subsidiary, branch office, joint venture partner or agent/distributor, is another key to success in the market. Although it may be possible to directly supply a few types of highly specialized products from the United States, most U.S. firms will find it necessary to have some kind of local presence to market their products and services.

4.4.1 Distribution Channel Options

The most common distribution route in Taiwan moves products from suppliers to distributors, from distributors to retailers, and then from retailers to consumers. Some suppliers use shorter distribution channels, distributing products directly through retailers only. Multi-level marketing is accepted in Taiwan, and some direct-selling organizations are well established here. Foreign firms, especially small- and medium-sized companies, generally rely on agents to sell their merchandise to distributors. For certain products such as apparel, however, the distribution channels tend to be more complex.

Most foreign firms gain their initial foothold in the market by using a Taiwan agent. Taiwan firms prefer the partnering aspect of an agent relationship. Although some companies are willing to act only as distributors, there is a fear that firms seeking distributors are not serious about the market and will not support their distributors. Firms selling equipment or machinery frequently find it necessary to locate a partner willing and able to do some assembly or manufacturing in Taiwan. Although not necessarily formal joint ventures, these efforts require a higher degree of commitment to the market than simply selling through an agent. If the size of the market warrants, companies may wish to consider setting up a branch office or subsidiary in Taiwan. Taiwan officially welcomes foreign investment and establishing an office in Taiwan is relatively easy, if the procedures sometimes bureaucratic.

Using U.S. Commerce Department Services to Market American Products in Taiwan

AIT's Commercial Section, on behalf of the U.S. Department of Commerce, provides a number of services to help U.S. firms, large and small, export their goods and services to Taiwan. Through our office in Taipei (covering northern and central Taiwan) and a branch in Kaohsiung (covering southern Taiwan), we offer a variety of resources and services (including market research, agent distributor searches, advocacy, trade missions and trade shows) to assist U.S. companies entering the Taiwan market. Please contact us at Tel: 886-2-2720-1550, Fax: 886-2-2757-7162, email taipei.office.box@mail.doc.gov. It is also on the World Wide Web at the following address: <http://www.buyusa.gov/taiwan/en>.

The first step in using these services is contacting an Export Assistance Center in the United States. A comprehensive list of U.S. Export Assistance Centers (USEAC) can be found at <http://www.buyusa.gov/home/us.html>. These offices can help U.S. exporters determine which service is most suited to their export needs.

- **Arrange Business Appointments through the Gold Key Matching Service** - If one is planning to visit Taiwan to locate an agent or distributor, or begin discussions with potential buyers or business partners in Taiwan, the U.S. Commercial Service staff in Taiwan can arrange a schedule of meetings with pre-screened potential buyers, agents or distributors for a nominal fee.
- **Promote Companies on the U.S. Commercial Service Web site** – The U.S. Commercial Service in Taiwan can translate product information into Chinese and feature company information on the local version of its Web site, which targets Taiwan importers and buyers. At the time of this report, the service is offered free of charge. Qualified U.S. exporters may register for the program directly at <http://www.buyusa.gov/taiwan/en/aboutfuse.html>.
- **Connect with Local Professional Firms** - The U.S. Commercial Service in Taiwan maintains an on-line directory of local attorneys, accountants, translators, and travel agents, as well as companies that provide meeting facilities, temporary help, executive search services, market research, instant office rental, patent and

trademark services, trade show and exhibition services, moving and storage. These firms have English-speaking staff and experience in working with foreign companies.

4.4.2 Pricing Issues

Brand is an important determinant of price policy. Generally speaking, price margins at the distributor level for international brands are lower than for local or regional brands. Distributor price margins range an average between 15 percent and 40 percent, depending on which party maintains responsibility over marketing. In addition, price breaks and discounts for quantity purchases are frequently offered.

Taiwan importers and distributors often sell through modern retail stores. It is estimated that over 90 percent of imported consumer goods are sold through five types of modern retail outlets with different price margins:

Department Stores	Average 15-35 percent margin
Warehouse Stores	Average 15 percent margin
Convenience Stores	Average 30-40 percent margin
Supermarkets	Average 20-25 percent margin
Shopping Malls	Average 20-40 percent margin

4.4.3 Creating a Sales Office

Establishing a subsidiary or representative office in Taiwan is not generally considered to be particularly burdensome. There are, however, a number of different corporate structures from which to choose, and an array of forms and procedures to complete. In addition, a Chinese name is required. Consultations with reputable local attorneys or accountants are strongly recommended in order to identify and analyze key issues relevant to each business, and complete all necessary steps for establishment in Taiwan.

4.4.4 Selling Strategies

The most important consideration for the majority of Taiwan buyers is initial price. The most common complaint against U.S. goods is that their price is too high. Americans often find Taiwan businesspeople short-term oriented, and are frequently frustrated by the fact that most Taiwan firms do not factor in life-cycle costs when negotiating a purchase. Although attitudes are changing, most Taiwan firms will only pay a higher price for a product if they see a near-term payoff. After price, the next most important considerations are quality and after-sales service.

4.4.5 Advertising and Trade Promotion

Taiwan businesspeople are active participants in the global marketplace. They read trade journals from the U.S., Europe and Japan, participate in major international trade events and are well aware of current trends in their industries. There are local trade shows for most major industries and the Taiwan External Trade Development Council (TAITRA) is the co-organizer of many of these shows (usually in conjunction with the relevant industry associations). A local partner can give the best advice on where and how to advertise, but participation in the major trade shows and advertisement in the relevant Taiwan trade journals and industry newspapers are important.

Information on shows can be obtained from TAITRA. The TAITRA World Wide Web address is <http://www.taiwantrade.com.tw>. Taiwan offers several lists, including a frequently updated calendar for

international conferences and trade exhibitions held at the Taipei World Trade Center. TAITRA-sponsored trade shows can be found in Chapter 13 of this document and at <http://www.taipeitradeshows.com.tw>. Most trade exhibitions in Taiwan are export-oriented. Some have a significant number of non-Taiwan companies exhibiting.

TAITRA Offices in the United States

U.S.A. - New York

Taiwan Trade Center, New York Inc.
Director: En-Lei Tuan
1 Penn Plaza, Suite 3410
New York, N.Y. 10119
Tel: 212-904-1677
Fax: 212-904-1678
E-mail: newyork@taitra.org.tw

U.S.A. - Miami

Taiwan Trade Center, Miami Inc.
Deputy Director: Michelle Kung
5301 Blue Lagoon Drive, Suite 150
Miami, FL 33126
Tel: 305-266-9191
Fax: 305-266-8787
E-mail: Miami@taitra.org.tw

U.S.A. - San Francisco

Taiwan Trade Center San Francisco
Director: Richard Tsai
5201 Great America Parkway, Suite 307
Santa Clara, CA 95054
Tel: 408-988-5018
Fax: 408-988-5029
E-mail: office@taiwantradesf.org

Professional Journals and Magazines

U.S. companies that do not have representatives or agents in Taiwan should target professional journals and magazines. The following are some of Taiwan's major industry/commercial newspapers and business publications:

Commercial Times (Daily Newspaper)

Mr. Chang Huei Lin, Deputy Manager
Business Service Department
2F, 68 Ying Peng South Rd., Taipei
Tel: 886-2-2382-1598, 2381-3199 ext. 5001
Fax: 886-2-2382-1252
E-mail: s119@comm2.chinatimes.com.tw
<http://www.news.chinatimes.com/>

Economic Daily News (Daily Newspaper)

Mr. Kofeng Tseng, Reporter
Business Services Department
8F, 557 Chunghsiao E. Rd., Sec. 4, Taipei
Tel: 886-2-2768-1234 ext. 6175
Fax: 886-2-2764-7757
E-mail: kofeng.tseng@udngroup.com
<http://www.udnnews.com.tw/>

Business Weekly (Weekly Magazine)

Ms. Vicky Hsueh, Manager
Advertising Department
Rm. B, 21F, 333 Tunhwa S. Rd., Sec. 2, Taipei
Tel: 886-2-2736-8999 ext. 201
Fax: 886-2-2736-4605
E-mail: jying.hsueh@bwnet.com.tw
<http://www.ebusinessweekly.com.tw/>

Commonwealth (Monthly Magazine)

Ms. Joyce Liang, Manager
Advertising Department
4F, 87 Sungkiang Rd., Taipei
Tel: 886-2-2507-8627 ext. 137
Fax: 886-2-2507-8045
E-mail: joycel@cw.com.tw
<http://www.cw.com.tw/>

Breakthrough (Monthly Magazine)

Ms. King Lane Liang, Vice President
Advertising Department
15F, 181 Fu Hsing North Rd., Taipei
Tel: 886-2-8712-6882 ext. 886
Fax: 886-2-2546-6053
E-mail: cyndiliang@mail.chinamgt.com
<http://www.harment.com/>

Directory of Taiwan (Annual Edition)

Published by The Taiwan News
Mr. Chi-Sen Chiu, Vice General Manager
Advertising Department
7F, 88 Hsin Yi Road, Sec. 2, Taipei
Tel: 886-2-2351-7666 ext. 264
Fax: 886-2-2351-5330
E-mail: chiucs@etaiwannews.com
<http://www.etaiwannews.com/>

International Advertising Firms Doing Business in Taiwan

Taiwan's advertising sector is comparable to that of other developed economies and covers a wide range of media. There are some restrictions to advertising, especially for alcohol and tobacco commercials on television. Major international advertising firms doing business in Taiwan include:

Leo Burnett Co. Ltd.

9F, 207 Tun Hwa S. Rd., Sec. 2, Taipei
Tel: 886-2-2732-1211
Fax: 886-2-2732-8810
E-mail: office@leoburnett.com.tw

DDB Worldwide Inc.

1F, 427 Kong Kuan Rd., Peitau, Taipei
Tel: 886-2-2828-5166
Fax: 886-2-2828-5177
E-mail: jerome.fung@ddb.com.tw

Bates Taiwan Co., Ltd.

6F, 120 Chienkuo N. Rd., Sec. 2, Taipei
Tel: 886-2-2505-5305
Fax: 886-2-2505-5332
E-mail: janicel@mail.bates.com.tw

Dentsu, Young & Rubicam Co., Ltd.

8F, 198 Tun Hwa S. Rd., Sec. 2, Taipei
Tel: 886-2-2378-8938
Fax: 886-2-2378-8949
E-mail: Steve_Kuo@tw.yr.com

4.4.6 Entering the Consumer Goods Market

Taiwan is renowned as an industrial dynamo which has been driven by exports of industrial and high-tech goods for well over twenty years. Less well known is the fact that Taiwan offers a booming domestic consumer market. Taiwan's consumers enjoy a level of average disposable income which is among the highest in Asia, and their tastes are becoming increasingly cosmopolitan. American brands are widely known and respected. U.S. firms wanting to enter the market will find a network of support firms that can help them identify what consumers want, how best to deliver it, and what they are willing to pay.

As in the industrial sector, finding a good local partner -- be it an agent, distributor, licensee or joint venture partner -- is essential. Partners will frequently offer guidance on the staggering number of different marketing channels. Consumer goods distribution in Taiwan is dominated by a vast number of small, independent retailers, served by a network of wholesalers. As the Taiwan market becomes more attractive to investors and consumers become more sophisticated, however, this fragmented system is giving way to consolidated distribution and larger chains with greater economies of scale. New players are changing the face of Taiwan's retail market.

4.4.7 Major Types of Modern Retail Stores

Modern retail outlets such as shopping malls, department stores, warehouse stores, supermarkets, and convenience stores, have played important roles in retail, while other traditional retail outlets, such as “wet markets” and mom-and-pop stores, have become less important as consumer patterns change.

Department Stores

There are about 50 department stores located throughout Taiwan, concentrated mainly in the large cities. Most of these department stores are run on a Japanese model, i.e., the bulk of the floor space is rented out to concessionaires who pay rent and a fixed percentage -- about 20 percent or so -- of either their gross or net income. Such arrangements help department stores avoid risk and enable replacement of concessionaires recording poor sales. Concessionaires are responsible for decorating and staffing their sales areas. Although the department stores do purchase some merchandise on their own account, most of their sales are through the concessionaires. To compete with lower priced bulk quantity selections available in warehouse stores, Taiwan department stores carry high-quality, upscale and expensive merchandise.

The introduction of computerized systems to track sales should help department stores make purchases and control inventory to alleviate problems associated with the lack of merchandise selection. Because Taiwan consumers are very attentive to customer service and ambiance when shopping, department stores will continue to focus on distinguishing themselves through special design, decor, fashion shows, art exhibitions, VIP cards, in-store child care and food courts to attract their target market.

Warehouse Stores and Supermarkets

Carrefour and RT-Mart are two major warehouse store chains. Geant is the third largest market player. The U.S. warehouse store chain, Costco, has opened stores on the island and is enjoying brisk sales. British Tesco and Japanese Jusco GMS have also entered this profitable market.

The current supermarket leaders are Taiwan’s Chuan Lien Sher and Hong Kong-based Wellcome. These two market leaders are expanding businesses by aggressive opening of new stores.

Convenience Stores

There are over 7,500 convenience stores island-wide, which offer food products and toiletries 24 hours a day and are major outlets for consumer food items, such as snack foods, beverages and juices. 7-Eleven is the market leader. Convenience stores have been the fastest growing retail outlets, in terms of revenue sales, in the Taiwan retail market in recent years.

Shopping Malls

According to Taiwan’s Shopping Center Development Council (SCDC), Taiwan’s first shopping mall was established in 1994. But the island’s shopping mall industry really only took off in 1999, when the first composite commercial zone shopping mall, TaiMall, opened in Taoyuan. The establishment of shopping malls provides a promising new venue for both department stores and specialty chain stores. U.S. brands are prominent in Taiwan’s malls, noticeably more so than in traditional channels.

4.4.8 Additional Sales Routes

Franchising

A variety of franchise arrangements exist on the island, ranging from equally shared joint venture partnerships to the Pizza Hut model, where stores are managed and operated by a “master franchisee” or a regionally based conglomerate. As Taiwan lacks a strong legal basis for franchise operations, it is crucial that contractual arrangements entered into by U.S. companies stipulate adherence to corporate policy. To gain a foothold in the market and ensure successful performance, franchises must stress management, personnel training, customer service and consistency in product quality, and seek guarantees for reliable distribution channels. Vital to the successful operation of a franchise in Taiwan is identifying a reliable intermediary capable of enhancing and reinforcing technology transfer. In recent years franchise operations have expanded beyond fast food restaurants (McDonalds, Kentucky Fried Chicken, TGIF, Pizza Hut and Burger King are all present) to non-food operations such as Cosmed, JaniKing and Midas.

Direct Selling

“Multi-level sales” has been popular as a second job to supplement household incomes. “Multi-level sales” businesses in Taiwan specialize primarily in health care products, cosmetics and skin care products, and household cleaning items. Foreign brands are selling well in the categories of health care products; cosmetics and skin care products, and water filters. Firms such as Avon, Amway, Nu Skin and Tupperware have taken advantage of the sales skills of ambitious, well-educated Taiwan women to become very successful. Direct marketing techniques such as mail order, TV and Internet marketing are expanding rapidly.

In contrast to the industrial/commercial market, Taiwan consumers, in many cases, are willing to pay more for the goods that they purchase. Conspicuous consumption is rampant in the Taiwan society and consumers are eager to pay top-dollar for the right brand of watch, car, cognac or necktie. While consumers are willing to pay more for perceived value, price competition in the marketplace can be brutal. Firms that charge too much for their products in Taiwan can expect to find parallel importers undercutting their efforts. Consumers are extremely brand-conscious, but they are willing to shop around to find the lowest price on their favorite brand. Moreover, when brand is not important, consumers buy on price.

4.4.9 Public Sector Marketing

Selling to the Taiwan authorities deserves a special mention, as there are both excellent opportunities and major challenges for U.S. firms interested in Taiwan’s public procurement. The Central Trust of China (CTC), a quasi-state organization that has procurement and other responsibilities, issues many large, and typically technically complex, tenders. Government agencies and state-owned enterprises that need to purchase equipment inform CTC of their requirements. CTC announces and administers the tender procedures, with technical evaluations performed by the purchasing entity or its surrogates (such as outside consulting firms). CTC tenders may be local (limited to firms with a Taiwan office) or international (open to firms outside of Taiwan), but both kinds of tenders are generally conducted fairly and openly. U.S. firms have a well-established record of success in winning CTC-administered tenders.

While the CTC handles a large portion of the Taiwan authority purchases of advanced equipment, the bulk of Taiwan authority purchases are administered by the purchasing entities themselves. Nearly all of these tenders are open only to firms with a local presence, and it can be difficult for outsiders to obtain advance information on such tenders. CTC itself estimates that they procure less than 10 percent of the authorities’ total procurement. In addition to the authorities’ extensive infrastructure spending, important portions of the economy are still in the hands of authority-

owned entities -- significant parts of the energy and tobacco products industries are authority monopolies or at least nearly so.

U.S. firms have scored some major successes in public procurement, but U.S. companies also have serious complaints about the system. The contracting entities tend to wield excessive power over the contractor: exorbitant potential liabilities, cumbersome change order procedures and expensive bonding requirements are common. Contracting entities tend to view contractors as adversaries, which can strain otherwise normal business dealings. Taiwan bureaucrats tend to believe that the penalty for making no decision is always less than the penalty for making the wrong decision and this attitude can often result in frustrating delays or unreasonable demands on the contractor, as bureaucrats seek to take the safest course of action. Conflict of interest laws in Taiwan are not as fully developed, as are those in the United States. Firms employing relatives of existing officials and/or retired officials have an inside track on Taiwan authority contracts.

Taiwan's Government Procurement Law (GPL) went into effect on May 27, 1999. It had been hoped that the GPL would do much to improve the transparency and fairness of procurements by the authorities, and while there is certainly some movement in the right direction, the GPL is proving to be a disappointment. Contract terms and conditions are still often extremely one-sided, local companies sometimes make frivolous complaints under the GPL in order to be given a piece of the action, and the authorities have not yet organized a binding arbitration mechanism for the authorities' procurement disputes. For these and other reasons, the Taiwan authority's procurement practices were for the first time, in May 2000, listed on a United States Trade Representative "Title VII" report as causing concern for the United States Government.

4.4.10 Protecting Your Products from IPR Infringement

While Taiwan companies are known for their ability to quickly incorporate ideas found in competing products, Taiwan's copyright, patent, trademark, trade secret and integrated circuit layout protection laws generally meet most international standards. Market monitoring systems (for both the export and domestic markets) are in place to help deter the sale of pirated and counterfeit goods, although concerned U.S. industries report that enforcement against the illegal manufacture and sale of such items is inadequate to satisfactorily protect their IP. Patent, copyright and trademark holders should investigate the need or desirability of filing for those rights in Taiwan.

While Taiwan is not a member of the Bern or Paris Conventions, it generally adheres to the principles embodied in those agreements. In connection with its accession to the WTO, Taiwan has made progress in revising its Copyright Law, Patent Law and Trademark Law to conform to the TRIPS agreement and with other international treaties administered by the World Intellectual Property Organization (WIPO).

Piracy and counterfeiting levels still remain unacceptably high. Taiwan is one of the largest sources of pirated optical media products in the world and corporate end-user piracy and trademark counterfeiting are at high levels. U.S. companies continue to report significant problems in protecting and enforcing their IPR. Official raids are at times hampered by a lack of expertise and poor interagency coordination; resulting penalties are neither timely nor strong enough to deter infringement. The weak protection of IPR, including a lack of adequate enforcement against piracy and trademark counterfeiting in Taiwan, therefore remains a serious concern for the U.S. government.

4.4.11 Local Attorneys, Accountants, and Insurance Companies

Taiwan has a comprehensive, modern legal system, as well as a respectable number of highly regarded local and international law firms and legal consultants. Many Taiwan attorneys active in the international business areas have studied law in the United States, speak excellent English and understand the concerns of U.S. businesses.

Consultations with a competent local attorney prior to engaging in business with Taiwan, or in the Taiwan market, are highly recommended.

Likewise, the major U.S. and global accounting firms and insurance companies have active offices in Taiwan. Any U.S. firms interested in entering the Taiwan market should make a point of meeting with these professional advisors. Not only can they provide advice on their specific areas of expertise, but also on a range of business and cultural matters. Up-to-date lists of professional firms may be obtained from the American Chamber of Commerce in Taiwan. The U.S. Commercial Service in Taiwan also maintains an on-line listing of local professional service providers on its Web site at www.buyusa.gov/taiwan/en. The listing includes local attorneys, accountants, consultants, and other professionals and can be found under the heading “Business Service Providers.”

4.4.12 Checking Bona Fides

Prior to entering into a relationship with an unknown Taiwan company, a U.S. firm would be wise to confirm the reputation of the company. Local attorneys and accountants can be excellent sources of information, as can trade associations.

The U.S. Commercial Service in Taiwan maintains an on-line listing of companies that provide professional service providers on its Web site at www.buyusa.gov/taiwan/en. These companies can be found under the heading “Business Service Providers” in subcategories such as market research, patent and trademark law services, legal services, and accounting and auditing.

4.5 IMPORT AND EXPORT REGULATION RISKS

4.5.1 Tariffs on Non-Agricultural Products

In November 2003, Taiwan’s Legislative Yuan approved a comprehensive tariff schedule revision to comply with the 2002 version of the Harmonized Commodity Description and Coding System of the World Customs Organization, Taiwan’s Free Trade Agreement with Panama, and Taiwan’s accession commitments to the WTO. The revised tariff schedule became effective in early 2004. U.S. industry continues to request that Taiwan lower tariffs on imports of large motorcycles, paper and paper products, plywood, wine, canned soup, biscuits, cookies, snack foods, etc.

Upon Taiwan’s accession to the WTO in January 2002, Taiwan implemented a tariff rate quotas (TRQs) system on small passenger cars. Taiwan also lowered tariffs on small passenger cars, resulting in lower prices. Taiwan is a participant in the Information Technology Agreement (ITA). Under the ITA, Taiwan has phased out or reduced tariffs on information technology products.

A commodity tax must be paid if an imported product falls into one of seven commodity categories. The tax is assessed on the C.I.F. and duty-paid value of affected imports. The seven commodity categories include rubber tires, cement, machine-made cool drinks, oil and gas, certain electric appliances, flat glass, and motor vehicles.

4.5.2 Tariffs on Agricultural Products

WTO accession brought down tariffs for agricultural products and has opened the Taiwan market to commodities formerly banned or subject to strict import controls, including rice, chicken meat, pork offal, and pork belly. Upon WTO accession, Taiwan established TRQ’s for formerly banned products such as rice and rice products, pork bellies,

chicken meat, pork offal, poultry offal, liquid milk, peanuts, small red beans, garlic bulbs and some fruit and vegetables.

4.5.3 Special Safeguards

Taiwan's implementation of the WTO Agreement on Agriculture Special Safeguard (SSG) Regime threatens to undermine post-WTO tariff concessions by allowing duty surcharges above tariff binding levels. SSG are triggered when either imports increase too quickly or prices fall below a specified level. In addition to tariffs, all imports must pay a Commercial Harbor Service Charge, which is assessed based on cargo weight and ship net tonnage.

4.5.4 Valuations on Imports

Taiwan revised its Customs Law in July 1986 in order to implement procedures consistent with the "Agreement on Implementation of Article VII of the GATT." This article refers to the valuation of all imports for the assessment of duties. In accordance with its WTO accession agreement, Taiwan again amended its Customs Law in May 1997 and formally implemented the amendments to bring Customs Law into conformity with Customs Valuation Agreement on January 1, 2002.

The dutiable value of an import into Taiwan is defined as its cost, insurance and freight (C.I.F.) value. Under the Revised Customs Law, duty-paying value (DPV) is based on the transaction value, which is the import cost.

Import Licensing and Other Restrictions Generally

Taiwan categorizes imports into controlled and permissible items. In order to comply with its WTO commitments, Taiwan eliminated import controls on 94.42 percent of 10,994 official import product categories as of April 2004. Currently, 549 product categories require import permits from the Board of Foreign Trade. Imports of 65 categories are "restricted", including ammunition and some agricultural products. These items can only be imported under special circumstances, and are effectively banned.

4.5.5 Controls on Exports

Of the total 10,993 items in Taiwan's current tariff schedule (HS), 10,067 or 91.58 percent may be exported. Licenses are required for:

- Implementation of quantitative restriction arrangements on exports of textile and garment products;
- The security of supply of certain daily necessities and important industrial materials, including rice, salt, crude oils, gasoline, fuel oils, pharmaceuticals and uranium;
- Implementation of strategic trade and nonproliferation agreements, i.e. The export of munitions and armaments, strategic high-tech commodities, and technical data;
- Protection of intellectual properties by implementation of the trademark export monitoring system and commodities containing intellectual works;
- Protection of endangered plants and animals and preservation of the natural ecological balance in accordance with the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES);
- Concern over hygiene and health effects of certain products such as toxic waste and chemicals.

4.5.6 Documentation Required for Trade

Non-Agricultural Products

A foreign supplier's pro-forma invoice (quotation) is required for application of an import permit and the establishment of a letter of credit. Documents required for shipments to or from Taiwan include the commercial invoice, bill of lading or airway bill, and packing list. A certificate of origin is also required for designated commodities such as sedans, other small passenger cars and their chassis, tobacco and alcohol products and some agricultural products. Shipments of agricultural products, plants, and animals to Taiwan may require certificates of inspection or quarantine issued in the country of origin and are subject to inspection and quarantine upon importation into Taiwan.

The commercial invoice must show the import license number; FOB, C&F, or CIF value; insurance; freight; and discounts or commissions, if any. The commodity description and value shown on the commercial invoice must agree with those on the import license, if any. No requirements exist as to the form of a commercial invoice or a bill of lading. In addition to the information generally included in a standard bill of lading, all marks and case numbers appearing on packages must be shown. Customs does not permit the grouping of marks or numbers on a shipment of mixed commodities.

Agricultural Products

Fresh produce is inspected for pesticide residues and accompanying phytosanitary certificates are checked closely for completeness and accuracy. Rice shipments imported by the public sector continued to be subject to lot-by-lot inspection. However, private sector importers are allowed to move rice from the port to their own warehouses immediately after inspectors have taken samples for inspections as long as they sign a guarantee letter assuming full responsibility for the rice shipment passing inspection. Border inspections of meat products consist of a visual inspection, a random test for animal drugs and pesticide residues, and a thorough check of the accompanying health certificates for accuracy and completeness. If discrepancies or insufficiencies are found on these certificates, this can lead to delays in customs clearance and a possible rejection of the entire shipment. The food safety inspection of processed foods focuses on labeling, food hygiene, and food additives.

4.5.7 Entering Temporary Imports

Taiwan is not a member of ATA Carnet system. However, Taiwan has signed bilateral agreements with 25 nations, including the United States, Canada, Switzerland, South Africa, Singapore, South Korea, New Zealand, Australia, Hungary, the Philippines, and 15 EU countries, to implement ATA Carnet. These agreements grant temporary customs exemptions for commercial samples, professional equipment and exhibitions goods, which are brought into Taiwan for sales promotion and exhibition purposes on a temporary basis. They facilitate international business by avoiding extensive customs procedures, eliminating payment of import duties and value-added taxes, and replacing the purchase of temporary import bonds. Upon conclusion of the event, items must be shipped out of Taiwan within one year to avoid imposition of tariffs and other import taxes.

The agreement with the United States to implement the TECRO/AIT Carnets was signed in December 1999. Like the ATA Carnet, TECRO/AIT Carnets are valid for up to one year and allow U.S. exporters to avoid duties and taxes when entering Taiwan. The TECRO/AIT Carnets issued exclusively for Taiwan are very similar to the traditional ATA Carnets, but must be applied for separately (due to the U.S.'s lack of diplomatic recognition of Taiwan). For example, if traveling to both Taiwan and an ATA Carnet country, one would have to apply for a TECRO/AIT Carnet and an ATA Carnet. Questions regarding the process of the TECRO/AIT Carnets should be directed to the U.S. Council for International Business at 1212 Avenue of the Americas, New York, N.Y. 10036, Tel: 212-703-5078, Fax: 212-944-0012, <http://www.uscib.org/>

4.5.8 Public Procurement

Taiwan has committed to accede to the WTO Agreement on Government Procurement (GPA) as part of its WTO accession. While Taiwan has applied for accession to the GPA, its accession has not yet been completed due to differences regarding nomenclature issues. To prepare for accession, Taiwan implemented a new Government Procurement Law (GPL) in mid-1999. This was an important first step toward establishing a transparent and predictable environment for Taiwan's multibillion-dollar market for public procurement projects. In August 2001, Taiwan and the United States signed a Memorandum of Understanding (MOU) on Government Procurement. The MOU calls for Taiwan to implement certain procedural commitments immediately, while others will be implemented on accession to the GPA. Taiwan agreed to establish new procedures providing for the independent review of complaints that arise during the tendering process, to encourage its procuring entities to make use of mediation procedures, and to cooperate fully when such procedures are invoked. Despite these commitments, Taiwan officials have continued to incorporate provisions in public procurement tenders that appear to be inconsistent with the GPA, although Taiwan is not yet a party to that agreement. Further, the lack of transparency in the government procurement process as well as the review process for complaints remains a serious issue. U.S. participation in Taiwan's government procurement market continues to decline as a result of these practices. The United States continues to remain concerned with the public procurement environment.

4.5.9 E-Commerce

Taiwan's approach to e-commerce and related issues is still evolving. A law protecting personal on-line data was approved in 2001. A positive development is the Electronic Signature Law, passed by the Legislative Yuan in late October 2001. This law adopts the principles of the United Nations Commission on International Trade Law's Model Law on Electronic commerce and recognizes the legal validity of electronic contracts, records, and signatures.

4.5.10 Additional Trade Issues

For political, diplomatic or economic reasons, the Taiwan authorities have placed restrictions on the imports of certain permissible goods from designated procurement areas. Also restricted and/or controlled is the importation of certain products on the grounds of national security, maintaining public order, or preserving human, animal or plant health. All require a prior import permit issued by the Board of Foreign Trade.

Presently, vessels that carry goods imported from and exported to the People's Republic of China (PRC) must sail indirectly, calling on a third port en route. Taiwan has lifted the ban on importation of a large number of agricultural and industrial products from the PRC.

Starting May 19, 1998, Taiwan extended to all banned PRC imports the same rules and regulations it applies to all other imports with regard to country of origin and value added processing. In other words, banned goods from the PRC can be imported if it can be shown that they were primarily made elsewhere, and did not undergo substantial transformation in the PRC. The definition of "substantial transformation" is value added exceeding 35 percent of the final export value of the goods. In addition, bonded factory companies and the enterprises located in export processing zones and science-based industrial parks producing wholly for export markets are permitted to import banned manufacturing components and raw materials from the PRC.

4.5.11 Adherence to Free Trade Agreements

Taiwan became a member of the WTO on January 1, 2002. Taiwan became a member of the Asia Pacific Economic Cooperation (APEC) in November 1991, and joined the Central American Bank for Economic Integration in 1992. Taiwan is also a member of the Asian Development Bank (ADB), the Pacific Economic Cooperation Council (PECC) and the Pacific Basin Economic Council (PBEC).

4.5.12 Taiwan Customs Contact Information

Directorate General of Customs, MOF
13 Ta Cheng Street, Taipei 103, Taiwan
Tel: 886-2-2550-5500
Fax: 886-2550-8111
<http://www.dgoc.gov.tw>
E-mail: customs@mail.dgoc.gov.tw

4.6 TAIWAN STANDARDS REGIME

The Bureau of Standards, Metrology and Inspection (BSMI), under the Ministry of Economic Affairs (MOEA) has responsibility for the development, compilation and publication of “Chinese National Standards” (CNS) as well as for conformity assessment. BSMI also implements commodity inspection measures as stipulated in Taiwan’s Commodity Inspection Law.

Taiwan promulgated the Standards Act in 1946, establishing a National Bureau of Standards under the MOEA. The Standards Act was amended in 1997 to accommodate changes in global trade and in anticipation of future WTO obligations. The “Regulations for the Establishment of Chinese National Standards” were amended in 1996 and again in 1998 to promote standards quality and to facilitate harmonization of national with international standards. Responsibility for standardization was taken over by the Bureau of Standards, Metrology and Inspection (BSMI) on January 26, 1999, as a result of a reorganization aimed at integrating conformity assessment activities.

Taiwan’s national standards are based primarily on international standards such as those set up by the International Standards Organization (ISO), International Electrotechnical Commission (IEC) and International Telecommunications Union (ITU). Taiwan acceded to the WTO on January 1, 2002. The preparation, adoption and application of national standards comply with the requirements of the Agreement on Technical Barriers to Trade (TBT) of the WTO.

BSMI administers the CNS Market Certification System whereby products meeting standards are allowed to carry the CNS mark. BSMI also carries out necessary food and safety inspection measures while the Bureau of Animal and Plant Health Inspection & Quarantine (BAPHIQ) is responsible for inspection and quarantine for the purpose of safeguarding animal and plant health. Taiwan’s sanitary and phytosanitary (SPS) standards are, for the most part, different from U.S. standards or those established by international regulatory bodies such as the Office of International Epizootic (OIE) or the Codex Alimentarius.

4.6.1 National Standards

The Standards Division (First Division) of BSMI is responsible for drafting standards policies and regulations. This division consists of four sections, with the First Section responsible for general standardization activities including

the drafting of regulations, guidance, harmonization planning, administration of the CNS mark, compilation of the standards gazette and promotion of national standards. The remaining three sections are each responsible for standards in specific industry sectors.

In addition, there are four standards-related institutions under BSMI involved in the development and promotion of Chinese National Standards. These are:

- National Standards Review Council, the National Standards Technical Committee,
- National Information & Communication Initiative Committee - Technology & Standards Team, and
- National Information & Communications Security Taskforce - Standards & Specifications Group.

BSMI issues plans for standards development semi-annually. These plans are published in the National Gazette and filed with the WTO Secretariat in accordance with the TBT agreement.

BSMI has established an on-line system for the public to obtain Chinese National Standards information on line: <http://www.bsmi.gov.tw> or <http://cnsm.bsmi.gov.tw>. The former Web site also provides access to updated standards gazettes.

Conformity Assessment

The Sixth Division of BSMI is in charge of testing and inspection methods. This division currently conducts testing in areas including electromagnetic compatibility (EMC), biochemistry, chemistry, polymers, materials, electrical engineering and mechanical engineering.

Before 1997, Taiwan relied on batch inspection as the only conformity assessment procedure available to ensure compliance. Along with the development of a technical infrastructure leading to advances in testing capabilities, the Commodity Inspection Act was revised in 1997 and again in 2001 to create a framework for a type-testing system and Supplier's Declaration of Conformity (SDoC) as replacements for traditional batch inspection. The type-testing system was implemented in January 1999 while SDoC was introduced for certain electronics products in January 2002.

Under the new type-testing system, "Registration of Product Certification" (RPC), products are subject to the appropriate conformity assessment modules as determined by the authorities. These seven modules cover both the design and production phases of product manufacture. They consist of Internal-Control (Module I), Type-Test (Module II), Conformity-to-Type Declaration (Module III), Full Quality Assurance (Module IV), Production Quality Assurance System (Module V), Product Quality Assurance (Module VI), and Factory Inspection (Module VII). Conformity assessment for Module II, which requires safety or electromagnetic compatibility (EMC) testing or inspections, is required for all products. Module III, IV, V, VI or VII are applied in combination with Module II as specified by MOEA.

The SDoC is the least trade restrictive conformity assessment procedure, and is currently applied only to low-risk products with stable manufacturing technology. Under the SDoC scheme, manufacturers may have testing done by BSMI designated laboratories, prepare their own technical documents, and draft the declaration of conformity themselves. Products using the SDoC approach are under market surveillance by BSMI. Products permitted to use the declaration of conformity approach may be imported without customs inspection.

Mainly parts or accessories for information technology products, including electronic calculators, hard discs, floppy discs, optical discs, storage units and power supplies, are covered by the SDoC system. A complete list of products is available in BSMI's Web site: www.bsmi.gov.tw.

Product Certification

Products specified by MOEA must comply with inspection requirements before they are shipped from the manufacturing premises or imported and placed on the market. Manufacturers or importers of these products must apply to BSMI for inspection before shipment or importation. Beginning on January 1, 2004, BSMI adopted a dual-track approach to allow manufacturers or importers to choose the “Registration of Product Certification” (RPC) scheme or a Batch-by-Batch inspection (BBI) with Type Approval.

The RPC scheme encompasses requirements for the product design stage (type testing) and manufacturing stage (quality management system). In other words, while applying for the Registration of Product Certification, both the product design and manufacturing process must conform to the requirements specified by BSMI. With the RPC certificate, domestic manufacturers may ship their products and importers may proceed directly with customs clearance.

Importers or firms having small numbers of products for sale in the domestic market may find the BBI with Type Approval approach easier. According to BSMI, upon approval of the sample product, the random inspection rate is about 10%.

Taiwan’s safety regulations follow IEC and CNS standards. All safety testing for end products must be done in Taiwan by Taiwan accredited laboratories. The UL safety certification has never been considered sufficient to meet Taiwan requirements for end product safety certification. While some products that have UL safety certification may have entered Taiwan in the past, that approval for entry was based on BBI results, not UL certification. Home appliances, certain fire fighting products, electrical power distribution devices (including cables and switches), lighting products for indoor use and motors require safety testing or inspection.

In order to enhance the protection of consumers from hazards posed by telecommunications and electrical and electronics products, and to meet international requirements for electromagnetic compatibility (EMC), BSMI has promulgated “Regulations Governing Electromagnetic Compatibility of Commodities.” Manufacturers or importers must obtain type approval of their products from BSMI and all products must apply for inspection based on the EMC type approval certificate. Currently, products subject to EMC inspection include copy machines, television sets, VCRs, information technology products, household appliances, computer components, and power tools.

Mr. Lin Huei-Shiun, Chief of the Second Section of the Third Division, is the contact point to assist firms with problems in this area. Tel: 886-2-2343-1783, Fax: 886-2-2393-2324, e-mail: hs.lin@bsmi.gov.tw. BSMI also has an English language section on its Web site describing measures governing the registration of product certifications at <http://web-server.bsmi.gov.tw/english/rpc/mgrpc.htm>.

There is currently an Electromagnetic Compatibility (EMC) Mutual Recognition Agreement (MRA) between the U.S. and Taiwan covering information Technology (IT) products. In accordance with the terms of this MRA, BSMI accepts EMC testing by any laboratory located in the United States and accredited by the National Institute of Standards and Technology (NIST) under the NAVLAP program. NIST accredited labs outside the U.S. are not accepted by BSMI.

Accreditation

On January 6, 2004, BSMI integrated the operations of the Chinese National Laboratory Accreditation (CNLA) and the Chinese National Accreditation Board (CNAB) to form the Taiwan Accreditation Foundation (TAF). TAF is the island’s sole national accreditation body, responsible for supervision of CNLA and CNAB, both of which conduct accreditation work in accordance with international standards and the requirements of international organizations. Based on the ISO/IEC Guide 58, CNLA has set up an accreditation management system and follows ISO/IEC 17025, a new version of general requirements for laboratories. CLAB has adopted ISO/IEC Guide 61 and International Accreditation Forum (IAF) guidance to conduct accreditation for management system accreditation

bodies, product certification bodies, auditor certification bodies, auditor training course providers, and inspection bodies.

Accreditation for labs is conducted on a voluntary basis. Information about laboratories accredited by the CNLA is available on the CNLA Web site: www.cnla.org.tw. In addition, the CNAB Web site (<http://www.moea.gov.tw/~cnab/index.html>) provides a current directory of accredited bodies, certified organizations of the accredited bodies, accreditation process notices, classification of accreditation scope, documents required for application for accreditation, and accreditation requirements.

4.6.2 Technical Regulations

Proposed and final technical regulations are submitted to the MOEA by the BSMI for publication. This information is then published in the National Standards Gazette. In addition to the Gazette, BSMI also publishes several pamphlets to propagate information on standards. These pamphlets include the Catalogue of National Standards Categories, List of CNS Mark Product Items and Directory of CNS Mark Companies, Compilation of Laws & Regulations of Applying for CNS Mark, Q&A on Standards and CNS Mark, and Q&A on Technical Barriers to Trade. BSMI's Web site (www.bsmi.gov.tw) also provides updated information from standards gazettes and on standards regulations.

U.S. entities can provide their comments about local technical regulations or other related issues by contacting the BSMI directly or through the National Enquiry Point under the WTO TBT Agreement in the U.S. The BSMI Information Center performs the functions of National Enquiry Point under the WTO TBT Agreement for other countries.

4.6.3 Labeling Issues

Taiwan's Commodity Labeling Act was first promulgated in January 1982 and amended in 1991 and 2003. A revised Commodity Labeling Act took effect on June 25, 2004. In labeling commodities, the writing shall be in Chinese and may be supplemented by English or other foreign language. When an imported commodity is introduced for sale on the domestic market, labeling and instructions or sales literature written in Chinese shall be added to the commodity by the importer. The contents provided in Chinese language shall not be simpler or more condensed than those from the place of origin of such commodity. The name/title and the address of the foreign manufacturer of an imported commodity to be labeled may not be written in Chinese language.

Where a commodity is introduced for sale on the domestic market, the following particulars shall be labeled:

- Name of the commodity;
- Name, telephone number and address of the producer or manufacturer, the place of origin of the commodity, and the name, telephone number, and address of the importer for imported commodity;
- Contents or composition of the commodity;
- Major components/ingredients or materials.
- Net weight, volume or quantity, or measurements shall be labeled in statutory measuring units and other measurements may be added when it is deemed necessary.
- Date of manufacture in the Chinese calendar or Gregorian calendar; the expiration date or the term of validity if the commodity has a limited duration of storage; and other particulars as required by the Central Government Competent authorities.

Where a commodity is under any of the following circumstances, the scope of application, the date of expiration, the methods of use and storage of such commodity, and other points requiring attention shall be indicated:

- Hazardous or dangerous in nature;
- Related to health and safety; and
- Having special characteristics or requiring special handling.

Taiwan's labeling regulations require that the net contents of packaged goods be shown in metric units. Dual labeling in metric and non-metric units is permitted. Measuring instruments calibrated in non-metric units must show metric equivalents. All imported cargo must bear a mark of distinctive design, a set of three or more letters, or a combination of design and letters indelibly stenciled, stamped, or burned on the packing or on the cargo itself. For cargo packed in cases, boxes, crates, casks, drums, or cylinders, each container should bear a separate number, which cannot be repeated for two years. Bags or bales also must bear a nonrecurring number, date, or set of three or more letters. In addition, each package of a consignment must be numbered consecutively. Numbering is not essential for large lots of cargo except when packaged in cases, boxes, or crates, provided that each package of the consignment contains cargo of identical weight.

As required by the March 1995 amendment to Taiwan's "Law Governing Food Sanitation," Taiwan strictly enforces the Chinese language-labeling requirement for food items sold at retail (with some exemptions for selected food-service items) and requires that the labels be affixed before customs clearance. Required information includes name and address of the manufacturer or importer, expiry date, list of food additives, and weight, volume or quantity of ingredients. If you have questions on labeling requirements for food products, please contact the AIT Agricultural Trade Office.

4.6.4 Key Contact Information

The BSMI has established an Information Center to provide services for users to search and/or purchase Chinese National Standards as well as the standards of other countries. The Information Center functions as the National Enquiry Point under the Agreement on Technical Barriers to Trade of the World Trade Organization. Inquiries concerning the Agreement or measures adopted in other countries can also be made to the Information Center. The contact information of the Information Center is below:

The Information Center

Bureau of Standards, Metrology and Inspection
Ministry of Economic Affairs
No. 4, Chinan Rd., Sec. 1
Taipei, Taiwan
Tel: 886-2-2343-1985 or 2343-1978
Fax: 886-2-2356-0998
E-mail: tbteng@bsmi.gov.tw

The following is contact information of national accreditation organizations in Taiwan:

Taiwan Accreditation Foundation (TAF)

8th Fl., No. 20, Nan Hei Road, Taipei, Taiwan
Tel: 886-2-2391-4626, Fax: 886-2-2397-1744
E-mail: taf@taftw.org.tw
Website: www.taftw.org.tw

Chinese National Laboratory Accreditation (CNLA)

No. 30, Ta Hsueh Road, Hsinchu, Taiwan

Tel: 886-3-571-0233, Fax: 886-3-572-6308

Website: www.cnla.org.tw**Chinese National Accreditation Board (CNAB)**7th Fl., No. 20, Nanhai Road, Taipei, Taiwan

Tel: 886-2-2397-1742, Fax: 886-2-2397-1744

E-mail: cnab@moea.gov.twWebsite: <http://www.moea.gov.tw/~cnab/index.html>

U.S. firms interested in standards related information may also contact the AIT Commercial Section for assistance:

Mr. William Marshak, Deputy Chief

AIT, Commercial Section

Rm. 3207, No. 333, Keelung Rd., Section 1

Taipei, Taiwan

Tel: 886-2-2720-1550 ext. 381, Fax: 886-2-2757-7162

E-mail: William.marshak@mail.doc.gov

U.S. firms interested in information related to Taiwan's sanitary and phytosanitary regulations may contact the AIT Agriculture Section for assistance:

Mr. Scott Sindelar, Chief

AIT, Agriculture Section

No. 7, Lane 134, Hsin-yi Road, Section 3

Taipei, Taiwan

Tel: 886-2-2162-2316, Fax: 886-2-2162-2238

E-mail: scott.sindelar@usda.gov

4.7 OPENNESS TO FOREIGN INVESTMENT

Foreign investment in Taiwan basically concentrates on the electronics and electrical industries and the service sector. Sixty percent of the approved inbound DI in Taiwan's electronics and electrical industries come from the United States and Japan.

As a relatively open and liberal economy, Taiwan receives foreign investment while its businesses invest overseas, especially in the PRC, Southeast Asia and the Americas. According to balance-of-investments statistics compiled by the CBC, outbound direct investment has exceeded inbound direct investment since 1988.

Taiwanese business firms started to relocate their productions bases to the PRC in the late 1980s. Production lines moved to the PRC gradually shifted from cheap labor oriented industries in the late 1980s to products requiring lower-end technologies, such as PCs and motherboards, in the early 2000s. The accession to the WTO by the two sides of the Taiwan Strait near 2002 prompted Taiwanese business firms to accelerate the relocation to the PRC to sharpen their export competitiveness. They take advantage of cheap labor and land costs on China, using the bases to process Taiwan-made production inputs into finished goods for exports to such industrial markets as the United States, Japan and Europe.

Taiwan encourages and facilitates foreign direct investment. The authorities have taken steps to improve the investment climate, although impediments remain in some sectors.

All foreign ownership limits have been removed for construction, real estate development and brokerage, banking, insurance, finance, securities, and futures industries as well as shipping companies, shipping agents and marine cargo forwarders, with a few exceptions. .

Regulation of foreign investment is principally based on the Statute for Investment by Foreign Nationals (SIFN) and the Statute for Investment by Overseas Chinese (SIOC). These two laws permit foreign investors to invest in foreign currencies as well as in NT dollars. Companies reinvested by joint ventures with foreign ownership below 33 percent are exempt from limitations applicable to industries on the negative list. Both the SIFN and the SIOC specify that foreign-invested enterprises must receive the same regulatory treatment accorded their local counterparts. Foreign companies may invest in firms undergoing privatization and are also eligible to participate in public-financed research and development programs.

Applications for investment approvals, acquisitions, and mergers are screened by the Foreign Investment Commission (FIC) of the Ministry of Economic Affairs. Approximately 98% of projects have an investment value less than NT\$500 million (US\$14.9 million); FIC approval for these projects is generally granted within three working days at the FIC division chief level. For investments of NT\$500 million to NT\$1.0 billion (US\$14.9 million - US\$29.8 million), approval authority rests with the FIC Executive Secretary and normally is granted within one week. Approval of investments in industries included on the negative list requires several weeks because those investments must be referred to the relevant supervisory ministries. Approval of investments exceeding NT\$1 billion (US\$29.8 million) may require up to one month for screening at the monthly meeting of an inter-ministerial commission.

Taiwan offers a number of incentives to encourage investment, including accelerated depreciation and tax credits for investments in emerging or strategic industries, pollution-control systems, production automation and energy conservation. Equipment for R&D purposes can be brought into Taiwan duty-free. Other incentives include low-interest loans for developing new and/or cutting edge products, upgrading traditional industries, and importing automation or pollution-control equipment. A broad five-year tax holiday for new investments, abolished in January 1991, was re-instituted in January 1995. In 2002, Taiwan authorities expanded the five-year tax holiday to cover all manufacturing projects implemented in 2002 and 2003 in an attempt to stimulate Taiwan's economy. As part of its financial reform, Taiwan encourages banks, insurance companies, and securities firms to merge or transform into financial holding companies. Such mergers and transformations are eligible for tax and non-tax incentives.

4.7.1 Conversion and Transfer Policies

There are relatively few restrictions on converting or transferring funds associated with direct investment. Foreign investors with approved investments can readily obtain foreign exchange from a large number of designated banks. The remittance of capital invested in Taiwan is made according to a schedule submitted by the company to the FIC. Declared earnings, capital gains, dividends, royalties, management fees, and other returns on investments can be repatriated at any time. Capital movements arising from trade in merchandise and services, as well as from debt servicing, are not restricted. For purposes other than trade, no prior approval is required for movement of foreign currency funds without requiring any exchange between the NT dollar and the foreign currency. No prior approval is required if the cumulative amount of inward or outward remittances does not exceed the annual limit of US\$5 million for a person or US\$50 million for a corporation (including foreign-invested enterprises). No delay in remitting investment returns or principal through legal channels has been reported.

An outbound investment may not exceed 40% of the investing company's net worth or paid-in capital (whichever is less), unless the charter waived the 40% limit or unless such an investment project is approved by its shareholders. A local company is not required to obtain prior approval for overseas investments; however, such an approval exempts the company from the annual capital outflow limit of US\$50 million.

The Taiwan authorities have actively encouraged investment in Southeast Asian nations. Investments are also encouraged in a number of countries with which Taiwan has diplomatic relations, mainly in Central America. Incentives include loans and/or overseas investment insurance with the Export-Import Bank of ROC.

4.7.2 Expropriation and Compensation

Under Taiwan law no venture with 45% or more foreign investment can be nationalized for a period of 20 years after the venture is established. Expropriation can be justified only for national defense needs and “reasonable” compensation must be given. No foreign invested firm has ever been nationalized or expropriated in Taiwan. No examples of “creeping expropriation” or official actions tantamount to expropriation have been reported.

4.7.3 Dispute Settlement

Taiwan is not a member of the International Center for the Settlement of Investment Disputes or the New York Convention of 1958 on the recognition and enforcement of foreign arbitration awards. However, investment disputes are not common. Normally, Taiwan resolves disputes according to domestic laws and regulations.

Taiwan has comprehensive commercial laws, including Company Law, Commercial Registration Law, Business Registration Law, Commercial Accounting Law as well as laws for specific industries. Taiwan's Bankruptcy Law guarantees that all creditors have the right to share the assets of a bankrupt debtor on a proportional basis. Secured interests in property, both chattel and real, are recognized and enforced through a registration system.

Taiwan's court system is independent and free from interference by the Executive Branch. Judges are generally under-trained and over-worked. In response to complaint about slow pace of the judicial decision-making, the Taiwan authorities adopted measures in 2002 to closely monitor the judge's case processing, and delay would be subject to penalty. Simple courts have been set up to deal with minor cases that could be closed in a short time. Courts specializing in intellectual property rights (IPR) have been established to handle counterfeiting and illegal reproduction issues. Unfortunately, IPR courts are required to hear all types of cases, thus diluting their value. The judgments of foreign courts with jurisdictional authority are enforced in Taiwan by local courts on a reciprocal basis.

4.7.4 Performance Requirements and Incentives

The Taiwan authorities removed the last performance requirements on foreign-invested firms--specifically local content requirements for the auto industry--in January 2002 upon Taiwan's WTO accession. Like domestic firms, foreign invested-invested companies must be located in areas zoned for appropriate industrial or commercial use and are subject to restrictions on the number of foreign employees that can be hired. Tax credits and tax breaks are offered to encourage the introduction of new technology into Taiwan. Tax credits are also offered to encourage companies to locate in less-developed areas of Taiwan. Subsidies of up to one-half of total expenditures are offered for R&D programs. Taiwan does not require that firms transfer technology, locate in specified areas, or hire minimum of local employees as a prerequisite to obtaining investment permission.

Manufacturing firms located in export-processing zones and science-based industrial parks are, in principle, required to export all of their production in exchange for tariff-free treatment of production inputs. However, these firms may sell all of their production on the domestic market upon payment of relevant import duties.

4.7.5 Right to Private Ownership and Establishment

Private investors have the general right to establish and own business enterprises, except in a limited number of industries involving national security, environmental protection. Private entities have the right to freely acquire and dispose of interests in business enterprises. Private business firms have the same access as state-owned companies to markets, credit, licenses and supplies. Taiwan authorities have removed the state-owned monopolies in such areas as power generation, oil refining, and telecommunications.

4.7.6 Intellectual Property Risks

Taiwan acceded to the WTO on January 1, 2002. To meet the WTO's Trade-related Aspects of Intellectual Property Rights (TRIPS) requirements, Taiwan amended its IP-related laws and regulations including the Copyright Law, Trademark Act, and Patent Law. Also, in an effort to crackdown on massive CD pirating, Taiwan enacted the Optical Media Law in 2001. The law provided Taiwan authorities with a legal framework to manage CD manufacturing plants through licensing and the use of Source Identification (SID) codes in production. Offenders can receive prison terms up to three years and be fined up to NT\$6 million (US\$176,000).

Although Taiwan is moving toward improving protection of IPR, rights owners sometimes complain of slow progress in judicial cases and poor protection for trade dress properties, such as unregistered marks, packing configurations, and outward appearance features.

4.7.7 Transparency of the Regulatory System

Taiwan has a set of relatively comprehensive laws and regulations regarding taxes, labor, health and safety.

Bureaucratic procedures associated with investment applications are relatively few and transparent. The Industrial Development and Investment Center (IDIC) functions as the coordinator between investors and all agencies involved in the investment process. The Foreign Investment Commission (FIC) is charged with reviewing and approving inbound and outbound investments.

The entry-visa issuance procedures for foreign white-collar workers who work for foreign-invested companies are relatively simple. A foreign executive who enters Taiwan with a tourist visa is no longer required to leave the island before the tourist visa can be transferred to an employment visa. A foreign executive whose employment visa expires is not required to exit before the visa can be renewed.

4.7.8 Capital Market Risks

A wide variety of credit instruments, all allocated on market terms, are available to both domestic- and foreign-invested firms. Legal accounting systems are largely transparent and consistent with international standards. The regulatory system is generally fair. Foreign investors are no longer subject to the foreign ownership limit and the investment fund limit. In recent years, the Taiwan authorities have taken a number of steps to encourage the more efficient flow of financial resources and allocation of credit. The limit on NT dollar deposits that a branch of a foreign bank may take has been lifted. Non-residents have been permitted to open NT dollar bank accounts, which are subject to capital-flow controls. After its accession to the WTO in January 2002, Taiwan lifted restriction on residents' opening bank accounts overseas. Limits on branch banking have been lifted, although approval must be obtained to open new branches. Restrictions on capital flows relating to portfolio investment have been removed.

The insurance and securities industries have been liberalized and opened to foreign investment. Access to Taiwan's securities markets by foreign institutional investors has also been broadened.

Taiwan abolished the complicated regulatory system governing foreign portfolio investment in October 2003. In the past, only such approved “qualified foreign institutional investors” (QFIIs) as large banks, insurance companies, securities firms and mutual funds, were permitted to engage in portfolio investment. Since then, any foreign institutional investors have been allowed to enter Taiwan’s markets, and registration has replaced prior approval. The minimum asset requirement has been removed. They are subject to neither investment limit nor capital flow limit. However, on-shore foreign investors (like other residents) are still subject to portfolio investment limits of U.S. \$5 million for an individual foreign investor and US\$50 million for a non-QFII foreign company.

In December of 2002, Taiwan removed all legal limits on foreign ownership in companies listed on the Taiwan Stock Exchange (TAIEX) except for certain industries, including power distribution, telecommunications, mass media firms, and airline companies. There have been no reports of private or official efforts to restrict the participation of foreign-invested firms in industry standards-setting consortia or organizations.

Taiwan has a tightly regulated banking system. Since the mid-1980s, the financial sector as a whole has been steadily opening to private investment. Nevertheless, the market share held by foreign banks remains relatively small (below three percent). The establishment of many new securities firms, banks, and insurance companies, as well as holding companies spanning all three sectors, has underscored this liberalization trend and enhanced competition. Four large state-owned banks were privatized in early 1998, and another four sold to the private sector in 1999. The only reinsurance company was privatized in 2002.

4.7.9 Political Violence

Taiwan is a relatively young multi-party democracy with stable, tough, still evolving, democratic political institutions. There have been no reports of politically motivated damage to foreign investment. Both local and foreign companies have, however, been subject to protests and demonstrations relating to labor disputes and environmental issues.

4.7.10 Corruption

Taiwan has implemented laws, regulations, and penalties to combat corruption. The anti-corruption law, known as the “Corruption Punishment Statute,” and the “Criminal Code” contain specific provisions which establish penalties for corrupt activities. Anti-corruption efforts have reduced complaints of foreign businesses with operations in Taiwan. We are not aware of cases where bribes have been solicited in order to obtain approval for an investment. Bribes by local investors have rarely been heard. Both central and local governments are offering investors with very attractive incentives, including free rental for land in the first two years and a handsome discount in the subsequent years in light of massive industrial relocation across the Taiwan Straits. The Taiwan authorities encourage foreign investment and would take action against officials and individuals convicted of profiting illegally from foreign investors.

Corruption used to be pervasive in the area of government procurement in local-level construction tenders. The Government Procurement Act promulgated in 1998 and amended in February 2001, an element of Taiwan's accession to the WTO, has brought significant improvement over the past year. The Public Construction Commission (PCC) publishes all major government procurement projects that require open bidding, in accordance with the WTO transparency requirements. The PCC organizes inspection teams to closely monitor all public procurement projects both at the central and local levels. It also publishes results of bidding and results of the inspections. A task force has been organized to conduct investigations in response to complaints.

Attempting to bribe, or accepting a bribe from, Taiwan officials constitutes a criminal offense, punishable under the “Corruption Punishment Statute” and the “Criminal Code.” The Corruption Punishment Statute as amended in late 2002 treats payment of a bribe to a foreign official a criminal act and makes such a bribe subject to criminal prosecution. The maximum penalty for corruption is life imprisonment plus a maximum fine of three million NT dollars (US\$89,500). In addition, the offender may be barred from public office. The assets obtained from acts of corruption may be seized and turned over to either the injured parties or the Treasury.

4.7.11 Bilateral Investment Agreements

Taiwan has concluded bilateral investment guaranty agreements with the following 26 countries: Argentina, Belize, Burkina Faso, Costa Rica, Dominica, El Salvador, Guatemala, Honduras, India, Indonesia, Latvia, Liberia, Malaysia, Macedonia, the Marshall Islands, Nicaragua, Nigeria, Panama, Paraguay, the Philippines, Saudi Arabia, Senegal, Singapore, Swaziland, Thailand, and Vietnam. In addition, there is an agreement to guaranty Taiwan’s investment in Malawi and another agreement to protect U.S. investment in Taiwan.

Under the terms of the 1948 Friendship, Commerce, and Navigation Treaty with the United States, U.S. investors are generally accorded national treatment and are provided with a number of protections, including protection against expropriation. Taiwan and the United States also have an agreement, signed in 1952, pertaining to investment guarantees which serves as the basis for the U.S. Overseas Private Investment Corporation (OPIC) program in Taiwan. In September 1994, representatives of the United States and Taiwan signed a bilateral Trade and Investment Framework Agreement (TIFA) to serve as the basis for consultations on trade and investment issues.

4.7.12 OPIC and Other Investment Insurance

OPIC programs are available to U.S. investors, though U.S. investors have never filed an OPIC insurance claim for an investment in Taiwan. Taiwan is not a member of the Multilateral Investment Guaranty Agency.

4.7.13 Labor

Taiwan has an ample supply of well-educated and skilled labor. There are no special hiring practices in Taiwan. Wages typically include a one-month bonus at the end of the year. Fringe benefits often include meals, transportation, and dormitory housing. Dividend-sharing is common among high-tech industries. A standard labor insurance program is mandatory. The program provides maternity, retirement, and other benefits. A universal national health insurance system covers all employees and their family.

The Employment Insurance Law, enacted in 2002, provides a legal basis for unemployment relief programs. Alternatives to unemployment pay include the vocational training allowance for jobless persons and the employment subsidy for employers to encourage their employment of jobless persons. The Labor Standard Law (LSL) set a standard eight-hour workday and a biweekly maximum workload of 84 hours. Legislation adopted in late 2000 set a five-day workweek for the public sector, effective January 2001. The LSL restricts child labor, and also requires employers to provide overtime pay, severance pay, and retirement benefits. The LSL covers both the manufacturing and service sectors. Violators are liable to criminal penalties (jail terms) and administrative punishments (fines).

Labor unions have become more active and independent since martial law was lifted in 1987. Taiwan is not a member of the International Labor Organization but generally adheres to the ILO conventions for protection of workers’ rights.

4.7.14 Free Trade Zone Options

There are no foreign trade zones or free ports in Taiwan.

4.7.15 Foreign Direct Investment

Statistics on foreign direct investment in Taiwan are available from two sources. The Foreign Investment Commission (FIC) publishes monthly and yearly foreign investment approval statistics by industry and by country. The Central Bank of China (CBC) publishes foreign direct investment arrivals on a quarterly and yearly basis. CBC data, contained in balance-of-payments (BOP) statistics, are not further classified by industry or country.

The United States and Japan used to be the two main sources of Taiwan's foreign investment, but they were replaced by the tax havens in the British Territories in America (BTA), which harbor a growing number of multinational corporations (many originating in Taiwan). Approvals for U.S. investment from 1952 to 2003 totaled US\$13 billion, or 23% of total foreign investment. Of total U.S. investment, 37% was directed toward the electronics and electrical industries, and 33% toward the service sector. Approvals for Japanese investment amounted to US\$11.2 billion, or 20% of total foreign investment, of which 27% was in electronics and electrical industries and 33% in the service sector.

Approvals for investment from the BTA surged steadily from US\$76 million in 1994 to US\$1.2 billion in 1999 when the BTA surpassed the United States and Japan to become the largest source of foreign investment in Taiwan. Investment from the BTA during 1999-2003 accounted for 28% of total approved investments, compared to 20% from the United States and 14% from Japan. Twenty-seven percent of the investment from the BTA was directed towards the banking and insurance industries and another 21% to the electronic and electrical industries.

4.8 TRADE AND PROJECT FINANCING

4.8.1 The Banking System

The Central Bank performs all of the functions normally associated with central banks in other countries. It issues currency, manages foreign-exchange reserves, handles treasury receipts and disbursements, sets interest-rate policy, oversees the operations of local financial institutions, and serves as a lender of last resort.

Taiwan's 45 domestic banks offer a wide range of services – receiving deposits, making loans, handling trade financing and providing guarantees, and discounting bills and notes. Most are also involved in the securities business, in underwriting and trading securities and managing bond and debenture issues, as well as in providing savings-account facilities. The Chiao Tung Bank assists with long-term financing for industries and projects, while the Export-Import Bank of the Republic of China and the Farmers Bank focus on trade financing and agricultural development respectively.

Foreign banking institutions are playing an increasingly important role on the financial scene. Foreign banks are essentially treated like domestic commercial banks; they are permitted to engage in trade financing, foreign-exchange dealings, private and corporate lending, and various kinds of trust businesses. In order to build greater overall market presence, many foreign banking institutions are currently concentrating on the development of consumer loan and credit card services.

4.8.2 Foreign Exchange Control Risks

There are no foreign exchange (FX) limitations for trade, insurance and authorized investment transactions. Similarly, there are no FX limitations on repatriating capital and profits related to direct and portfolio investment, providing that such investment has been permitted or approved by the Taiwan authorities. There are no limitations on inward and outward remittances not involving any exchange between the NT dollar and the foreign currency. All other inward or outward remittances for business firms are subject to a US\$50 million annual ceiling per account if such remittances involve exchange between the NT dollar and the foreign currency. Individuals are allowed to remit a maximum of US\$5 million yearly to or from overseas if such remittance involves exchange between the NT dollar and the foreign currency.

4.8.3 Financing Availability

Importers are usually responsible for arranging their own financing. Assistance from the Taiwan authorities is, however, available in certain cases. The Republic of China Export-Import Bank, for instance, provides loans of up to 85 percent of the total contract value on sophisticated machinery and other high-technology items. Loans are also available for imports of natural resources, raw materials and spare parts. Such loans can be granted for equipment and materials employed in the manufacture of goods for export, as well as for those used in the production of sophisticated products or the development of advanced technologies.

4.8.4 Methods of Payment

Bank-to-bank Letters of Credit (L/C) constitutes Taiwan's most important import-payment process. Company-to-company payments are also made via the other two methods: open account (O/A) and documentary collections, such as documents against payment (D/P) and documents against acceptance (D/A). The AIT Commercial Section recommends that U.S. exporters minimize financial risk by requiring their Taiwan trading partners to finance their imports through L/Cs. A large majority of Taiwan's importers utilize L/Cs with validity of up to 180 days. On the whole, U.S. companies find Taiwan's financing system to be efficient and report no widespread pattern of deferred payment.

Banks authorized to handle foreign exchange may issue L/Cs. This includes all local banks (and their branch offices), 9 U.S. banks and their branches, and 27 third-country banks. All banks in Taiwan that are authorized to handle foreign exchange have extensive ties with one or more U.S. banks. This relationship includes test-key exchanges.

4.8.5 Financing Projects

Taiwan does not rely on money from multilateral institutions to facilitate investment projects. In the public sector, the Taiwan authorities rely heavily on bond issuance to cover the huge outlays connected with construction of major public works. Beginning in 1997, some major public projects were opened to private investment on a build-operate-transfer (BOT) basis. Private investment projects can easily be financed through banks on the island. Moreover, many Taiwan investors, especially large-sized companies, employ financial instruments (including corporate bonds) to raise funds in capital markets, both at home and abroad.

4.8.6 Supplier Credit Guarantee Program

The USDA Foreign Agricultural Service (FAS) has allocated up to \$50 million of credit guarantees for U.S. agricultural exports to Taiwan under the Supplier Credit Guarantee Program (SCGP). The SCGP covers a wide variety of U.S. agricultural, fishery, and forest products. For details of the operation of the SCGP, product coverage, and how a U.S. exporter can participate, please check under Export Financing on the FAS Web site – <http://www.fas.usda.gov/>.

4.8.7 Major Banks with Corresponding U.S. Banking Arrangements

- Bank of Taiwan
- The International Commercial Bank of China
- Chiao Tung Bank
- Export-Import Bank
- The Farmers Bank of China
- Taipei Bank
- Chang Hwa Commercial Bank
- First Commercial Bank
- Hua Nan Commercial Bank, LTD
- Chinatrust Commercial Bank
- Land Bank of Taiwan

4.8.8 U.S. Banks

American Express Bank Ltd.
 Senior VP & General Manager: Phee Boon Kang
 3F, 214 Tunhwa N. Rd., Taipei, Taiwan
 Tel: 886-2-2715-1581, Fax: 886-2-2714-9495
<http://www.amex.com.tw>

Citibank N.A.
 Country Head: T.C. Chen
 117, Min Sheng E. Rd., Sec. 3, Taipei, Taiwan
 Tel: 886-2-2715-5931, Fax: 886-2-2546-5029
<http://www.citibank.com>

JP Morgan Chase Bank
 General Manager: Carl K. Chien
 14F, 2, Tunhwa S. Rd., Sec. 1, Taipei, Taiwan
 Tel: 886-2-2721-3150, Fax: 886-2-2731-0264
<http://www.jpmorgan.chase.com>

State Street Bank & Trust Company
VP & General Manager: Jane Huang
5F, 134 Min Sheng E. Rd., Sec. 3, Taipei, Taiwan
Tel: 886-2-2712-6118, Fax: 886-2-2712-6119
<http://www.statestreet.com>

Union Bank of California, N.A.
VP & General Manager: James Lin
12F, 99 Fuhsing N. Rd., Taipei, Taiwan
Tel: 886-2-2718-8220, Fax: 886-2-2719-1097
<http://www.uboc.com>

Wachovia Bank, National Association
VP & General Manager: Gabriel E. Olano
17F, 44 Chungshan N. Rd., Sec. 2, Taipei, Taiwan
Tel: 886-2-2567-8511, Fax: 886-2-2567-8516
<http://www.wachovia.com>

Wells Fargo Bank Minnesota, N.A.
VP & General Manager: Terry Hou
Rm. D, 12F, 109 Min Sheng E. Rd., Sec. 3, Taipei, Taiwan
Tel: 886-2-2717-1577, Fax: 886-2-2719-0550
<http://www.wellsfargo.com>

Bank of America
Managing Director: Edwin Png
2F, 205 Tunhwa N. Rd., Taipei, Taiwan
Tel: 886-2-2715-4111, Fax: 886-2-2717-9898
<http://www.bankofamerica.com>

Bank of New York
General Manager: Louis T. Kung
4F, 245 Tunhwa S. Rd., Sec. 1, Taipei, Taiwan
Tel: 886-2-2771-6612, Fax: 886-2-2771-2640
<http://www.bankofny.com>

4.9 TRAVEL ISSUES

Taiwan has a low level of violent crime. Although visitors should take precautions to prevent violence, most streets of Taipei and other cities are generally safe at any hour. While violent crime is rare, Taiwan's pickpockets and thieves are extremely clever, so valuables should be properly secured. Taxi drivers, restaurateurs, store clerks and other service people are normally quite honest and often solicitous of the needs of the non-Chinese speaking foreign guest. The people of Taiwan are generally outgoing toward foreigners and often will go out of their way to assist visitors.

Taiwan law provides several different options for foreign visitors, the choice of which depends of the length and purpose of the visit.

- U.S. citizens and citizens of 17 other nations may visit Taiwan for up to thirty days without a pre-arranged visa, provided they have a passport valid for at least six months after the proposed date of departure and an

onward/return plane ticket off the island with reservations. No extensions of stay are permitted under this program.

- A traveler may apply for a Landing Visa upon arrival and may be admitted for up to 30 days or up to the day the passport expires. No extension of stay is allowed.
- A Visitor Visa may be obtained at a Taiwan representative office abroad. It is usually valid for five years, allows multiple entries for stays of up to ninety days. A single ninety-day extension (for a total of one hundred eighty days) may be granted by the Taiwan Foreign Affairs Police. A visitor visa is appropriate for tourism, business, or study. In order to work in Taiwan, a traveler must have a work permit and a resident visa.
- Resident Visas are normally issued if the applicant has a valid work permit or is married to a Taiwan national. Note, however, that a Resident Visa does NOT automatically convey permission to work in Taiwan. For that a separate work permit is required. When applying for Resident Visas, applicants must submit supporting documents or official letters of approval from a competent authority in Taiwan, together with completed application forms. Normally, foreign nationals make application through their domestic Taiwan agents, representatives or affiliates of their firms.

For additional details about Taiwan visas, including current fees, you should visit the Web site **www.boca.gov.tw** or **www.AIT.org.tw**.

4.9.1 Local Business Practices

Formal business introductions in Taiwan are not complete without an exchange of business cards. It is advisable for foreign visitors to have their cards printed in both English and Chinese. There are numerous printers in Taiwan specializing in printing these indispensable business aids. They offer accurate, low-cost service, with card orders normally being filled within days. Since cards are required on nearly every business occasion, it is a good idea to carry a sizable number of them at all times.

The New Taiwan Dollar (NT\$) is the official currency. It is circulated in one-, five-, ten-, twenty- and fifty-dollar coins, and one-hundred, two-hundred, five-hundred, one-thousand, and two-thousand dollar notes. Since the relaxation of foreign currency controls in 1987, exchange between foreign currency and the NT\$ has become relatively free, although it is still limited to authorized banks and dealers.

Up to NT\$60,000 and US\$10,000 can be brought into Taiwan by a foreign visitor. Over the amounts should, however, be declared on the customs slip that must be filled-out upon entering the island. Foreign currency can be exchanged at the airport, as well as at authorized banks, hotels and shops. In addition, internationally recognized credit cards are accepted in many hotels, restaurants and shops. The use of automatic-teller machines is very popular on the island. It should be noted that a surcharge is sometimes added when payment is made by credit card.

In most instances, tipping is not necessary. A 10-percent service charge is usually added to restaurant and hotel bills, eliminating the need for gratuities in such situations. It is, however, relatively common to leave the change when a bill is paid.

Porters at hotels and airports customarily receive tips for their services. Approximately NT\$50 - NT\$100 per item of luggage is acceptable. It is not necessary to tip in taxis unless assistance with luggage is rendered, but most drivers do appreciate being allowed to keep small change.

4.9.2 Local Holidays Observed

There are four holidays and four festivals in Taiwan. Dates for the four festivals -- Chinese Lunar New Year Day, Tomb-Sweeping Day, Dragon Boat Festival, and Mid-Autumn (Moon) Festival -- change with the lunar calendar.

4.9.3 Business Infrastructure

Transportation

Taiwan has two international airports: Chiang Kai-shek (CKS) airport in Taoyuan (about 40km from Taipei City), and Hsiao-Kang airport in Kaohsiung in the south. CKS airport is the primary gateway to the island. It generally takes about one hour to travel from CKS airport to Taipei City. Airport buses to Taipei depart from the airport every 15 minutes, and tickets cost about NT\$100-140 per person. Buses from the airport to Hsinchu, Taichung, Changhua, Tainan and Kaohsiung are also available. Taxis are available at the airport. A 50 percent surcharge is added to the meter fare. The total cost of a taxi ride from the airport to Taipei is about NT\$1,000-1,200. Many large hotels offer car or mini-bus services from the airport to Taipei. It is, however, necessary to arrange such services when making hotel reservations. The Kaohsiung airport offers regular flights to major destinations in the region. There are also several domestic airports and domestic airlines that provide fast and convenient connecting flights between Taiwan's larger cities, as well as its outlying islands.

Taiwan also has five international seaports with modern facilities: Keelung in the north, Taichung in the west, Kaohsiung in the south, and Susao and Hualien in the east. The Kaohsiung Harbor is the world's fourth largest container transshipment port.

Taxis are widely available in Taipei and other major cities. For most cities, a meter is used to calculate the fare. The basic charge is NT\$70 for the first 1.5 kilometers, with an additional NT\$5 for every additional 300 meters. In addition, there is an NT\$5 charge for every two minutes for waiting, and a 20 percent nighttime surcharge is added to fares between 11 pm and 6 am. Several taxi services that can be booked over the telephone are also in operation. A surcharge of NT\$10 is applicable on such calls. These services are generally considered safer and more reliable than individual taxis. All taxis have a surcharge of NT\$10 for luggage service, and there is a surcharge of 20 percent in effect for two days before the eve of the Chinese New Year until the end of that holiday period. Since most taxi drivers cannot speak English, the visitor should always carry Chinese-language versions of both his hotel name card and that of his desired destination.

Taipei boasts six Mass Rapid Transit (MRT) lines - the Danshui Xindian, Zhonghe, Bannan, Muzha, Xinbeitou and Xiaonanmen - in operation with a combined track length of 65.3 kilometers. Fares of NT\$20 - NT\$65 are charged for a full-route ride on the six lines. The six lines form a transportation network connecting downtown Taipei with the suburban areas of Muzha, Danshui, Xindian, Tucheng and Nangang.

Bus services in major cities are extensive, but can be incomprehensible to the foreign visitor. A comprehensive long-distance bus system, run by Dragon Travel Corp., Fly Dog Bus Corp., Taiwan Motor Transport Corp., and United Highway Bus Corp., enables people to travel virtually anywhere on the island quickly, comfortably and at reasonable cost. The Taiwan Railway Administration operates an extensive rail network that is more than 1,000 kilometers in length.

Language

Mandarin is the official language on the island. Taiwanese is also commonly spoken, especially in the southern and rural areas. English is by far the most popular foreign language, and large numbers of people speak it with fluency. In particular, those working in hotels, business, or public organizations are likely to have a good command of the

language. Moreover, many people, especially those educated before the Second World War, can also speak Japanese.

Communications

In general, Taiwan's telecommunications systems are both efficient and convenient. Cities in Taiwan are equipped with red public pay phones that can be used for both local calls and domestic long-distance calls. Phone-card telephones are available in major cities. Prepaid cards for these phones can be purchased from convenience stores. Cellular phones are very popular, with many operators offering preferential rates or packages. The Global System for Mobile Communications (GSM) has been the standard for cellular phone service. Facsimile is widely used everywhere in Taiwan. Most major hotels and business service centers offer facsimile and electronic mail services. Data communications services are available. Many networking companies also provide Internet services to meet growing domestic demand.

Postal Service

Taiwan has an efficient postal system. Surface mail is normally delivered to any part of the island within one or two days, and a special delivery service that features delivery in six to eight hours is also available.

International Courier Services

In addition to the vast range of Taiwan authority postal services available in Taiwan, most of the leading international courier services have set up operations on the island, offering delivery to and from most countries around the world. More detailed information concerning these firms can be obtained by consulting the telephone directory or one of the many privately published business directories available on the island.

Accommodations and Housing

Taiwan has a large number of international- and domestic-standard hotels, hostels and inns. For those who plan to stay in Taiwan on a long-term basis, a wide selection of apartments and houses is available. Rental costs vary considerably, depending on location and size. Typically, rent in and around Taipei is far higher than in other areas. Landlords frequently require deposits of up to three months' rent, and tenants are usually responsible for utilities.

Health Information

As is true of many other tropical and sub-tropical areas, tap water in Taiwan should be boiled before drinking, although water quality is certainly improving in the major cities. Hotels and restaurants do provide drinking water, and bottled mineral water is widely available. Visitors should also take special care to wash all fruits and vegetables before eating and avoid eating in any of the island's countless street stalls, for at least the first few weeks.

There are several international-standard private and public hospitals and clinics. Taiwan also offers high-quality dental care, with most clinics being privately operated. The majority of doctors and dentists in Taiwan speak English well. Qualified foreign nationals with alien resident certificates and their family members can apply for coverage under the National Health Insurance Program (NHIP).

Many western brand-name pharmaceuticals are sold in Taiwan, often without prescription. In addition, a wide range of foreign and domestic over-the-counter non-prescription drugs is available. Visitors should, however, bring sufficient supplies of any specific medications that they might require. Emergency medical treatment can be obtained by dialing 119.

Food

Chinese cuisine ranks among the best in the world, and there is no better place to sample it in all its infinite variety than in Taiwan. In countless large and small restaurants, one can find specialties from almost every region. Major regional styles include the Peking, Cantonese, Shanghai, Szechwan, and Hunan cuisines. The local Taiwan cuisine and traditional Buddhist vegetarian restaurants are also well represented.

Western food is gaining in popularity, as can be seen from the many western-style restaurants and foreign fast food chains that have set up branches in Taiwan's large cities in recent years. Visitors will find everything from hamburgers, pizza and steaks, to the finest European cuisine.

Establishments serving other Asian cuisines can also be found in growing numbers in Taipei. Indian, Malaysian, Korean, Vietnamese, Thai and Japanese foods are all big favorites with the city's residents, with the latter two being particularly popular.

Foreign visitors should not overlook the fragrant teas for which Taiwan is famous. These teas can either be purchased in attractive packages for use at home or sampled in one of the island's many traditional Chinese-style teahouses.

U.S. Business Travelers are encouraged to view "Key Officers of Foreign Service Posts: Guide for Business Representatives", available on the Internet at <http://www.state.gov/travel>.

Business travelers to Taiwan seeking appointments with The American Institute in Taiwan should contact the Commercial Section in advance. The Commercial Section can be reached by telephone at 886-2-2720-1550, fax at 886-2-2757-7162 or by e-mail at Taipei.Office.Box@mail.doc.gov.

4.10 ECONOMIC AND TRADE STATISTICS

Country Data

Population	22.5 million (12/31/03)
Population Growth	0.57 percent
Religions	Buddhism, Confucianism, Taoism, Christianity
Political System	Democracy
Languages	Mandarin (official), Taiwanese, Hakka. (Frequent use of English and Japanese in business settings.)
Work Week	Monday - Friday (Effective January 1, 2001, a five-day work week was adopted for public employees, and the biweekly work time for private companies was reduced from 96 hours to 84 hours.)

Domestic Economy

(U.S.\$ billions, except where noted)

	2002	2003	2004 (e)	2005(f)
GDP (current)	281.9	286.2	308.2	333.8
GDP Growth Rate (percent)	3.59	3.24	5.41	4.43
GDP Per Capita (US\$)	12,588	12,726	13,652	14,740
Public Spending as Percent of GDP	24.3	23.8	22.8	21.0
Inflation (percent)	-0.2	-0.28	0.83	1.50
Unemployment (percent)	5.17	4.99	4.50	4.50
Foreign Exchange Reserves	161.6	206.6	258.0	300.0
Average Exchange Rate For USD 1.00	34.58	34.41	33.29	32.34
Debt Service Ratio (Ratio of principal & interest on foreign debt to foreign income)	1.5 - 2.5%	1.5 - 2.5%	1.5 - 2.5%	1.5-2.5%

Sources:

1. Directorate General of Budget, Accounting and Statistics
2. Central Bank of China
3. Chunghua Institution for Economic Research
4. AIT/T

Trade Statistics

(U.S.\$ billions, except where noted)

	2002	2003	2004 (e)	2005 (f)
Total Economy Exports (fob)	130.6	144.2	168.6	176.8
Total Economy Imports (cif)	112.5	127.2	156.7	167.0
Trade Balance	18.1	16.9	11.9	9.8
US Exports to Taiwan (cif)	18.4	17.5	22.0	25.3
US Imports from Taiwan (fob)	32.1	31.6	32.5	33.54
Trade Balance with the US	-13.7	-14.1	-10.5	8.2

Sources:

1. Ministry of Finance
2. Directorate General of Budget, Accounting and Statistics
3. Taiwan Institute of Economic Research
4. AIT/T

4.10.1 Investment Statistics

Foreign Investment Approvals by Year and by Area, 1952-2001

(US\$ million)

Year	U.S.A	Japan	Central America	Europe	Hong Kong	Others	Total
1952-89	3,067	2,983	341	1,312	1,198	2,049	10,950
1990	581	839	66	283	236	297	2,302
1991	612	535	60	165	129	277	1,778
1992	220	421	37	165	213	405	1,461
1993	235	278	38	214	169	279	1,213
1994	327	396	76	245	251	336	1,631
1995	1,304	573	151	338	147	412	2,925
1996	489	546	417	198	267	544	2,461
1997	491	854	659	401	237	1,625	4,267
1998	952	540	711	367	274	895	3,739
1999	1,145	514	1,216	462	161	733	4,231
2000	1,329	733	2,300	1,000	271	1,775	7,608
2001	940	685	1,397	1,182	145	780	5,129
2002	600	609	803	609	66	585	3,272
2003	687	726	919	635	44	565	3,575
1952-03	12,980	11,231	9,191	7,776	3,807	11,557	56,542

Source: Foreign Investment Commission

Foreign Investment Approvals by Industry and Area, 1952-2003

(US\$ million)

Industry	U.S.A.	Japan	Central America	Europe	Hong Kong	Others	Total
Total	12,980	11,231	9,191	7,776	3,807	11,557	56,542
Electronics & Electrical	4,848	3,046	11,926	1,469	627	11,651	13,203
Banking & Insurance	2,058	398	2,468	1,877	676	2,429	9,906
Services	909	1,434	1,414	863	502	1,521	6,643
Chemicals	1,485	815	292	1,078	278	384	4,332
Wholesale & Retail	789	813	780	800	152	697	4,031
Trade	524	869	214	326	313	482	2,728
Basic Metals & Products	348	781	177	129	128	926	2,489
Machinery	338	835	226	164	117	293	1,973
Food & Beverage	254	260	80	245	127	393	1,365
Transportation	75	68	14	75	139	732	1,103
Transport Equipment	89	522	82	64	987	67	921
Non-Metallic Minerals	245	253	40	90	81	165	874
Other	1,382	1,131	1,478	596	570	1,817	6,974

Source: Foreign Investment Commission

Outward Investment Approvals by Year and by Area, 1952-2003

(US\$ million)

Year	China	Central America	U.S.A.	ASEAN	Others	Total
1952-89	N.A.	76	865	429	155	1,525
1990	N.A.	170	429	567	386	1,552
1991	174	268	298	720	370	1,830
1992	247	239	193	309	146	1,134
1993	1,140 (2,028)	194	529	434	504	2,801 (2,028)
1994	962	569	144	398	506	2,579
1995	1,093	370	248	326	413	2,450
1996	1,229	809	271	587	498	3,394
1997	1,615 (2,720)	1,051	547	641	655	4,509 (2,720)
1998	1,519 (515)	1,838	599	478	381	4,815 (515)
1999	1,253	1,359	445	522	943	4,522
2000	2,067	2,248	862	389	2,118	7,684
2001	2,784	1,693	1,093	523	1,083	7,176
2002	3,859 (2,864)	1,575	578	211	1,006	7,229 (2,864)
2003	4,595 (3,104)	1,997	467	298	1,206	8,563 (3,104)
1952-2003	34,309	14,456	7,568	6,832	9,830	72,995

Source: Foreign Investment Commission

Note: Figures in parentheses refer to investments made prior to the specific year but not previously registered.

Outward Investment Approvals by Industry and by Area, 1952-2003

(US\$ million)

Industry	China	Central America	U.S.A.	ASEAN	Others	Total
Total	34,309	14,456	7,568	6,832	9,830	72,995
Electronics & Electrical	11,000	384	2,401	2,134	1,934	17,853
Banking & Insurance	340	11,266	1,166	719	3,796	17,287
Services	1,164	1,042	1,086	183	623	4,098
Chemicals	2,350	62	1,055	508	338	4,313
Basic Metals & Products	2,963	76	50	632	226	3,947
Trade	290	928	236	68	735	2,249
Plastic Products	2,308	20	7	50	27	2,412
Food & Beverage	1,844	2	162	252	98	2,358
Precision Instrument	1,894	42	81	43	63	2,123
Wholesale & Retail	615	301	699	201	340	2,156
Textiles	1,299	18	40	617	179	2,152
Non-metallic Minerals	1,723	-	7	388	31	2,149
Others	6,520	323	578	1,037	1,440	9,898

Source: Foreign Investment Commission

Technical Cooperation Projects by Year and by Area, 1952-1995

(Unit: Number of projects)

Year	Japan	U.S.A.	Europe	Others	Total
1952-1989	1,996	728	412	103	3,221
1990	106	54	30	10	200
1991	80	65	33	8	186
1992	193	50	19	10	175
1993	85	50	34	12	181
1994	70	39	24	6	139
1995	50	29	10	5	94
1952-95	2,483	1,015	562	136	4,196

Source: Foreign Investment Commission

Notes: Taiwan ceased to compile statistics on technical cooperation with foreign companies in 1996. Businesses have not been required to report technical cooperation projects to the FIC since the Statute for Technical Cooperation was abolished.

Technical Cooperation Projects by Industry and by Area, 1952-1995

(Unit: Number of projects)

Industry	Japan	U.S.A.	Europe	Others	Total
Total	2,483	1,015	562	136	4,196
Electronics & Electrical	708	416	106	16	1,246
Chemicals	416	203	160	28	807
Machinery	368	68	97	9	542
Basic Metals & Products	329	55	53	6	443
Other Services	111	106	27	42	286
Rubber Products	131	32	21	4	188
Non-metallic Minerals	97	22	24	2	145
Food & Beverage	80	38	13	9	140
Textiles	47	21	8	2	78
Construction	38	5	10	4	57
Garment & Footwear	18	14	4	3	39
Paper Products & Printing	19	13	4	-	36
Transport Equipment	20	2	8	1	31
Other	101	20	27	10	149

Source: Foreign Investment Commission

Selected Major U.S. Investors in Taiwan

US Investors/Local Investments	Major Products
NRG Energy/ Hsin Yu Energy Co.	Power generation
Amkor Technology Ltd./ Amkor Technology Taiwan (Lungtan)/ Amkor Technology Taiwan (Linkou)	IC Packaging
AIG/Yageo Corp.	Electronic Components
Far East Air Transport Corp.	Airlines
Nan Shan Life Insurance Co.	Insurance
Citicorp/ Fubon Life Insurance Co.	Finance
Pruco Insurance Group/ Masterlink Securities Co.	Securities
Corning Inc./ Corning Glass Taiwan Co., Ltd.	Mother glass for TFT/LCD
GTE-Verizon/ Taiwan Fixed-line Net Work Telecom Taiwan Cellular Corp.	Wire and cellular phone services
Carlyle Group/ Taiwan Broadband Co.	Cable TV
Ensite Limited (Ford Motor)/ Ford Lio Ho Motor Co.	Autos
Texas Instruments Inc./ Texas Instruments Taiwan Ltd.	Semiconductors
AMOCO Chemical Corp./ China American Petrochemical Co.	Petrochemicals
E.I. Dupont De Nemours/ Dupont Taiwan Ltd.	Industrial, electronic, agricultural goods
IBM Corp./ IBM Taiwan Ltd.	Computers: sales and services
AETNA Life Insurance Co./ AETNA Taiwan Branch	Insurance
AT&T Inc./ AT&T Taiwan Inc.	Communications services
View Sonic Co./Taiwan PCS Network Inc.	Mobile phone services
Warner Village Cinema Co./ Warner Village Cinema (Taiwan) Co.	Movie theater and entertainment facilities
United Parcel Service International Inc. (UPS)/ UPS, Taiwan Branch	World wide express services
Intel Inc./ Intex Co.	ADSL chipset/Innovation center
Applied Materials Ltd./ Applied Materials Taiwan Ltd.	Semiconductor mfg. Equipment
Broadcom Co./Broadcom Taiwan Co.	Network Soc R&D center

Selected Major Japanese Investments in Taiwan

Japanese Investors/Local Investments	Major Products
Toppan Printing Co./ Toppan Electronics (Taiwan) Co./ Toppan CFI (Taiwan) Co.	Color filters
Nippon Sheet Glass Co./ Taiwan Auto Glass Ind. Co./ Nippon Sheet Glass (Taiwan) Co.	Auto glass, mother glass
Asahi Glass Co. (AGC)/ Asahi Glass (Taiwan) Co.	Mother glass
NTT DoCoMo/ Far Eastone Telecommunications	Phone services
Taiwan Sinkansen Corp./ Taiwan High Speed Rail Corp.	Railway
Sharp Corp./ Quanta Display Co.	TFT-LCD
Nissan Motor/ Yulon Motor	Autos
Toyota Motor/ Kuozui Motor	Autos
Matsushita Electronic Co./ Matsushita Electronic (Taiwan) Co., Ltd.	Electrical appliances
Hitachi Co./ Taiwan Hitachi Co., Ltd./ Kaohsiung Hitachi Electronics Co., Ltd.	Electrical appliances and components
Yamaha Motor Co., Ltd./ Yamaha Motor Taiwan Co., Ltd.	Motorcycles
Sankyo Co./ Sankyo Co. Taipei	Pharmaceuticals
Idemitsu Co./ Shinkong Idemitsu Corp.	Petrochemicals
Mitsui Co./ Mitsui (Taiwan)	Trading
Takashimaya Co./ Ta-ya Takashimaya Dept. Store	Department store
Sumitomo Co./ Sumitomo (Taiwan)	Trading
Toshiba Co./ Toshiba Compressor (Taiwan)	Compressors
Sadagawa Steel Co./ Sheng Yu Steel Co.	Steel
Shin-Etsu Handotai Co./ Shi-Etsu Handotai Taiwan Co.	Semiconductors
Komatsu Co./ Formosa Komatsu Silicon Co.	Silicon wafers
Fujitsu Hitachi Plasma Display Co./Formosa Komatsu Display Co.	PDP
Mitsui Mining & Smelting C./Taiwan Copper Foil Co.	Copper foil
Kirin Brewery Co./Taiwan Kirin Co.	Beer sales
Stanley Electronic/Taiwan Stanley Electronic Co.	CCFC
Nitto Denko Corp./Nitto Denko Taiwan Ltd.	Polarizer

Selected Major European Investments in Taiwan

European Investors/Local Investments	Major Products
Sabersu Investments Co./Cerberus Asset Management Co.	Assets Management Business
Goldman Sachs/Goldman Sachs, Taipei Branch	Securities, underwriting
Deutsche Telecom/ Eastern Broadband Telecom	Telecommunications services
Volkswagen Ag/ Ching Chung Motor Co.	Autos
Dresdner Bank Ag/ Grand Cathay Securities	Securities
Imperial Chemical Inc./ICI Taiwan Ltd.	Chemicals
N.V. Philips/ Philips Electronics (Taiwan)	Electronics
Alcatel Co./ Alcatel Taisel Co.	Switch boards
Internallianz Bank, Zurich/Kwang Hwa Securities	Securities
Horwood Investment/ Chi Mei Industry Co.	Petrochemicals
H.S. Development & Finance/ ChinaTrust Commercial Bank	Banking services
Infineon Technologies Inc/Promos Technologies Inc. Inotera Co.	DRAMs
Siemens Telecommunications Systems Ltd.	Switch systems & phone equipment
Isenbourg-gsp, Lda/ RT-Mart International Ltd.	Shopping Malls
Unaxis Co./Unaxis Taiwan Co.	TFT manufacturing equipment
Merk Co./Merck Taiwan Co.	Liquid crystal

4.11 CONTACTS

4.11.1 U.S. Trade-Related Contacts

American Institute in Taiwan (AIT)
 Commercial Section
 Chief: Greg Loose
 Suite 3207, 333 Keelung Rd., Sec. 1, Taipei, Taiwan
 Tel: 886-2-2720-1550 ext. 382, Fax: 886-2-2757-7162
 Website: <http://www.buyusa.gov/taiwan/en>

Agriculture Trade Office
 Director: Hoa Huynh
 Suite 704, 7Fl., 136 Jen Ai Rd., Sec. 3, Taipei, Taiwan
 Tel: 886-2-2705-6536 ext. 287, Fax: 886-2-2706-4885
 Website: <http://ait.org.tw>

Agriculture Section
 Chief: Scott Sindelar
 7, Lane 134, Hsin Yi Rd., Sec. 3, Taipei, Taiwan
 Tel: 886-2-2162-2000 ext. 2317, Fax: 886-2-2162-2238
 Website: <http://ait.org.tw>

Economic Section
Chief: Daniel Moore
7, Lane 134, Hsin Yi Rd., Sec. 3, Taipei, Taiwan
Tel: 886-2-2162-2000 ext. 2374, Fax: 886-2-2162-2240
Website: <http://ait.org.tw>

4.11.2 Washington, D.C.-Based Country Contacts

AIT/Washington
Trade and Commercial Programs
Director: Rick Ruzicka
Suite 1700, 1700 N. Moore Street
Arlington, VA 22209
Tel: 703-525-8474, Fax: 703-841-1385

U.S. Department of Commerce
Korea and Taiwan Division Director: Mary Beth Morgan
Room 2319, 14th and Constitution Ave. NW
Washington, D.C. 20230
Tel: 202-482-3876, Fax: 202-482-3316
Website: <http://www.doc.gov>

U.S. Department of Commerce
US & Foreign Commercial Service, East Asia Pacific
Regional Director: Ann Bacher
Room 1227, 14th and Constitution Ave. NW
Washington, D.C. 20230
Tel: 202-482-0423, Fax: 202-501-6165
Website: <http://www.doc.gov>

U.S. Department of Commerce
Trade Information Center
Room 7424, 14th and Constitution Ave. NW
Washington, D.C. 20230
Tel: 1-800-USA-TRADE
Website: <http://www.doc.gov>

U.S. Department of Agriculture
Foreign Agricultural Service
Trade Assistance and Promotion Office
South Building, 14th and Independence Ave. SW
Washington, D.C. 20250
Tel: 202-720-7420
Website: <http://www.fas.usda.gov>

4.11.3 AmCham and Bilateral Business Councils

US-Taiwan Business Council
President: Rupert J. Hammond-Chambers
Suite 1703, 1700 North Moore Street
Arlington, Virginia 22209
Tel: 703-465-2930, Fax: 703-465-2937
Website: **www.us-taiwan.org**

American Chamber of Commerce in Taipei
President: Andrea Wu
Suite 1012, Chia Hsin Building Annex
96 Chung Shan N. Rd., Sec 2, Taipei, Taiwan
Tel: 886-2-2581-7089, Fax: 886-2-2542-3376
Website: **www.amcham.com.tw**

Taiwan External Trade Development Council
4-7F, 333 Keelung Rd., Sec. 1, Taipei, Taiwan
Tel: 886-2-2725-5200, Fax: 886-2-2757-6653
Website: **<http://www.taiwantrade.com.tw>**

4.11.4 Trade and Industry Associations

Chinese National Association of Industry & Commerce
Chairman: Theodore M.H. Huang
13F, 390 Fuhsing S. Rd., Sec. 1, Taipei, Taiwan
Tel: 886-2-2707-0111, Fax: 886-2-2707-0977
Website: **<http://www.cnaic.org>**

Chinese National Federation of Industries
Chairman: Hou Chen Hsiung
12F, 390 Fuhsing S. Rd., Sec. 1, Taipei, Taiwan
Tel: 886-2-2703-3500, Fax: 886-2-2705-8317
Website: **<http://www.industry.net.tw>**

4.11.5 Public Agencies

Ministry of Economic Affairs (MOEA)
Minister: Mei-Yueh Ho
15 Foochow St., Taipei, Taiwan
Tel: 886-2-2321-9273, Fax: 886-2-2391-9398
Website: **www.moea.gov.tw**

Ministry of Finance (MOF)
Minister: Chuan Lin
2 Aikuo W. Rd., Taipei, Taiwan
Tel: 886-2-2322-8006, Fax: 886-2-2356-8774
Website: **www.mof.gov.tw**

Board of Foreign Trade (BOFT), MOEA
Director General: Chih-Peng Huang
1 Hukou St., Taipei, Taiwan
Tel: 886-2-2351-0271, Fax: 886-2-2351-3603
Website: **www.trade.gov.tw**

Ministry of Transportation and Communications (MOTC)
Minister: Ling-San Lin
2 Changsha St., Sec. 1, Taipei, Taiwan
Tel: 886-2-2349-2900, Fax: 886-2-2389-6009
Website: **www.motc.gov.tw**

Directorate General of Telecommunications, MOTC
Director General: Jen-Ter Chien
16 Chi-Nan Rd., Taipei, Taiwan
Tel: 886-2-2343-3959, Fax: 886-2-2343-3772
Website: **www.dgt.gov.tw**

Council of Agriculture (COA), Executive Yuan
Chairman: Chin-Lung Lee
37 Nanhai Rd., Taipei, Taiwan
Tel: 886-2-2312-6000, Fax: 886-2-2361-4397
Website: **www.coa.gov.tw**

Council for Economic Planning and Development (CEPD)
Chairman: Sheng-Cheng Hu
3, Paoching Rd., Taipei, Taiwan
Tel: 886-2-2316-5306, Fax: 886-2-2370-0403
Website: **www.cepd.gov.tw**

Department of Health (DOH), Executive Yuan
Minister: Chien-Jen Chen
100 Aikuo E. Rd., Taipei, Taiwan
Tel: 886-2-2396-7166, Fax: 886-2-2341-8994
Website: **www.doh.gov.tw**

Environmental Protection Administration (EPA), Executive Yuan
Minister: Juu-En Chang
41 Chunghwa Rd., Sec. 1, Taipei, Taiwan
Tel: 886-2-2311-7722; Fax: 886-2-2311-6071
Website: **www.epa.gov.tw**

4.11.6 Other U.S. Government Contact Numbers

U.S. Department of State
Office of Business Affairs
2201 C Street N.W.
Washington, D.C. 20520
Tel: 202-647-1625, Fax: 202-647-3953

Overseas Private Investment Corporation
1100 New York Avenue, N.W.
Washington, D.C. 20527
Tel: 202-336-8400

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