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**Impact of the Global Economic
Crisis on Taipei, China's Industrial
Structure and Firm Activity**

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Abstract

Confronted by the current global economic crisis, Taipei,China's economy has suffered much like its neighbors. However, Taipei,China is different from other East Asia economies in several aspects. First, Taipei,China's industrial organization is dominated by small and medium-sized enterprises (SMEs), unlike the chaebols of the Republic of Korea or the Japanese Kabushiki-gaish. Second, Taipei,China has experienced extraordinary "hollowing-out" of its industrial base as many firms (both large and SMEs) have moved their manufacturing operation to People's Republic of China (PRC).

This is also manifested in the fact that Taipei,China has become one of the largest sources of FDI in the PRC, and Taipei,China's trade dependency with the PRC is ever rising. A silver lining is that when the sub-prime crisis hit the United States and weakened her import demand, the aforementioned hollowing-out meant less direct employment impact on Taipei,China.

However, given the dominance of SMEs in Taipei,China (97.6% of business establishments, and 77.1% of employment), it is of vital importance to develop ways to aid SMEs in surviving this crisis. Indeed, the government can utilize this crisis to reform and strengthen SMEs so they can continue to be the backbone of Taipei,China's economy. In this paper, I discuss the strengths and weaknesses of SMEs in Taipei,China. Policy recommendations are presented to address the weaknesses of the SMEs, including short-run and long-run approaches.

JEL Classification: G01, G10, F14, O53

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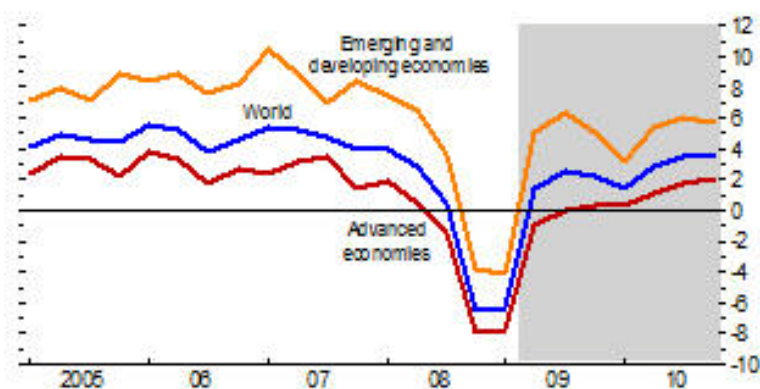
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1. INTRODUCTION

At the closing of the 2009 G-8 summit (held in L'Aquila, Italy on 8–10 July), United States (US) President Barack Obama declared that a disastrous economic collapse had apparently been averted. His tone was much more upbeat than when he first took office when he predicted that the economic recovery might not come until his second term in office. Last fall, as the catastrophic downturn was conceded as inevitable, the debate was whether the recovery would be L-shaped or V-shaped (Hou 2009a).¹ Last December, I went on record to say that it would be V-shaped. I also predicted that the People's Republic of China (PRC) would fare far better than the US, which would see recovery no later than August of 2009.² This was certainly against the mainstream belief at the time. However, things have changed rapidly in the last couple of months. Though the jury is still out regarding whether the US economy will start to grow in August, the consensus is that this should happen no later than the end of 2009. On 5 August 2009, the Asian Development Bank Institute announced, that "East Asia's rebound from the worst global recession since the Great Depression may be V-shaped."³ This is perhaps best illustrated in Figure 1.

Figure 1: Global GDP Growth

(%, quarter-on-quarter, annualized)



GDP: Gross Domestic Product.

Source: International Monetary Fund, staff estimates.

The advanced economies have been hit the hardest, while the emerging and less developed countries are affected less. This is hardly surprising as the advanced economies are far more integrated into the world economy. In the *World Economic Outlook Update* (July 2009), the International Monetary Fund (IMF) stated that the global economy had stabilized, though this stabilization was uneven across regions and the recovery would be sluggish. However, in April 2009, the *World Economic Outlook* had projected that global growth would be half a percentage point higher. This can be viewed with some slight optimism, but the uneven pattern is evident. The coordinated world effort totaling US\$2.2 trillion in stimulus undoubtedly played a key role. For the US, signs are abound that the worst is over, though the recovery will obviously take time. Even Federal Reserve Chairman Bernanke showed

¹ Nouriel Roubini (who correctly foresaw this round of world financial collapse more than 2 years ago) pessimistically predicted that the world would experience a long and slow L-shaped recovery.

² Keynote speech at the opening of the International Conference of the International Center for Chinese Studies, Aichi University, Nagoya, Japan, 6 December 2008.

³ A slightly more pessimistic view would have a smaller decline in economic activity as the fiscal stimulus runs its course before the real recovery kicks in. This would result in a W-shaped recovery.

cautious optimism, in recent testimony in Congress, saying that the economy may have entered an expansion phase.

Compared with the 1998 Asian financial crisis, this round of economic downturn—caused by the subprime collapse in the US—spread much further and with terminal velocity; clear evidence that we are approaching a true global village. The two largest economies in Asia—the PRC and India—still enjoy strong positive growth, but a relative slowdown is equally evident. The remaining Asian economies are suffering to various degrees; they are trying drastic measures to revive their economies, with varying degrees of success. This conference aims to understand the impact of this economic crisis on Asian economies and to draw on experience with previous crises to help us weather this round of global economic downturn. My role is to discuss the impact of this crisis on the industrial structure and firm activities in our host economy, Taipei,China.

At the outset, let me outline the special distinctiveness of Taipei,China, which will also form the structure for the analysis. Taipei,China has several unique characteristics, historically and geographically. It is a trade-oriented economy, with an export–gross domestic product (GDP) ratio of close to 24% in 2008, and an increasing intimacy with the PRC. In 2008, exports to the PRC accounted for 38.95% of total exports; more than its exports to the European Union, Japan, and the US combined. Like the other newly industrialized countries, Taipei,China’s industrial structure has become increasingly specialized, with electronic components (especially computer components) as the main industry. It has a highly educated workforce. The percentage of the population with postsecondary education has risen dramatically from 16.8% in 1993 to 34.3% in 2008. It has often been termed the “kingdom of small and medium-sized enterprises” (SMEs)—in 2007, SMEs accounted for 97.6% of business establishments, employing 77.1% of the workforce.

However, before I delve into a discussion on Taipei,China, it is important to recognize a few facts. The current economic crisis is a collapse of the final product market, which quickly and severely impacted the heavily export-oriented East Asia economies. In contrast, the 1998 East Asian financial crisis originated in the supply chain and hence the impact was more contained. While the affected economies suffered, the solution was more direct and mostly relied on currency depreciation to restore export ability. For the global economy, as important as these East Asia economies were in the supply chain, substitutes did exist and hence left the global economy mostly intact. Metaphorically, the 1998 Asian crisis was as if a trans-Pacific flight hit turbulence and a stronger than usual headwind—passengers will experience a slight delay and discomfort, but the overall flight schedule will not be affected. The downturn is effectively a shutdown of the destination airport, which will undoubtedly have a much more significant effect on the flight, and since it is a major international airport with numerous connecting flights, the delay or cancelation will be immediate and widespread.

2. ECONOMIC DEVELOPMENT CHARACTERISTICS

The often referred to “economic miracle” of Taipei,China is not just about sustained rapid growth, but rather that this growth came with improved income distribution.⁴ This can be seen in income distribution measures (Table 1).

⁴ Kuo, Ranis, and Fei (1981). Fields (1984) found Taipei,China to have the lowest Gini coefficient among all developing economies in his sample period.

Table 1: Selected Indicators of Taipei,China's Economy, 1952–1996

Period	1952–1960	1961–1970	1971–1980	1981–1990	1991–1996
Per Capita GNP (current US\$)	160.4	245.4	1,181.8	4,601.6	11,194.8
Real GDP Growth (%)	7.6	10.0	9.4	8.1	6.3
Unemployment Rate (%)	2.5	1.9	0.9	1.3	1.0
Inflation Rate (%)	9.85 ^a	3.41	11.08	3.15	3.65
Income Distribution ^b	...	5.11 ^c	4.28 ^d	4.60	5.27 ^e
Saving Rate (%) ^f	14.8	21.1	31.8	33.3	26.9
Capital Formation (%) ^g	16.3	21.9	30.5	22.5	23.4
Trade/GNP (%) ^h	22.2	37.4	81.1	83.8	75.4
Growth of Exports (%)	22.0	26.5	29.3	10.0	10.1

GNP = gross national product.

Notes: ^a 1953–1960 only.

^b Ratio of highest 20% household income over lowest 20%.

^c 1964, 1966, 1968, and 1970 only.

^d No data for 1971, 1973, and 1975.

^e 1991–1995.

^f Gross domestic saving–GNP ratio.

^g Gross domestic capital formation–GNP ratio.

^h (Exports+Imports)–GNP ratio.

Source: Li 1995.

The reasons for this “equal wealth” are multifaceted and include early land reform, government guidance, human capital, and the role of SMEs. Interested readers can refer to (Kuo, Ranis, and Fei 1981; Hou and Appleton 1996; Li 1995; and Tsai 1999) for discussion.

Though Taipei,China has shown improvements in the last few years, growth in the decade since 1996 has been relatively stagnant. From a pure development point of view, perhaps Taipei,China has matured and reached a natural plateau, but then why have the other Asian Tigers⁵ continued to grow. Other more ominous explanations include the political strife that has held the economy in its grips as part of democratic reforms.⁶ At the same time, cross-strait talks have been stalled from 1996 until the last couple of years. Compounding the effect was the PRC's rapid opening up to foreign direct investment (FDI), which attracted an increasing amount of Taipei,China investment to the PRC (Hou and Zhang 2000 and 2001). This resulted in a “hollowing out” of Taipei,China's industrial base (Hsieh 1999), and has led to large increases in unemployment since 1996.⁷

A direct side effect of the hollowing-out of the industrial base is the dramatic increase in Taipei,China's FDI in the PRC. Historically, Taipei,China has been among the top five sources of FDI in the PRC, and for a while it was the second largest source after Hong

⁵ Hong Kong, China; Singapore; and the Republic of Korea.

⁶ For example, Lee (2008) found that the new political leadership of the Democratic Progressive Party (DPP), and the policy reforms they brought in, had aggravated income inequality since 2000.

⁷ The average unemployment rate from 1996 to 2007 was 3.75%—much higher than for all previous periods. During the 2000–2007 administration, when the cross-strait relationship was more confrontational, unemployment was even higher at 4.26%.

Kong, China.⁸ For those familiar with Taipei, China's FDI in the PRC, it is nothing more than natural and business as usual. But, for most other scholars, it may not be quite as apparent why Taipei, China concentrates its FDI in one country, the PRC. The puzzle has a very simple explanation: all Taipei, China's nationals (with the exception of indigenous people) are migrants from the PRC. The mainlanders mostly migrated with Chiang Kai-shek and the KMT (the Nationalist Party) to Taipei, China in 1949, while others migrated from the PRC as far back as the 17th century.⁹ Thus, all Taipei, China residents can trace their ancestral home to somewhere in the PRC. The vast majority are from southern Fujian province in the south of the PRC. The local language of Taipei, China is the southern Fujian dialect.

Thus it should be no surprise that early Taipei, China FDI in the PRC concentrated in Fujian Province (Hou and Zhang 2001), probably to their ancestral homeland. Once Taipei, China's firms became more confident, investment quickly spread to almost every corner of the PRC, much more so than for any other foreign investor. To enhance this, Taipei, China's official language is Mandarin, which is also the official language of the PRC; the written language was unified two millennia ago (although the PRC uses a simplified version today). The ancestral link and common history, culture, and language (spoken and written) all drastically reduce the cost or risk of doing business in the PRC for Taipei, China entrepreneurs, leading to the overwhelming concentration of Taipei, China FDI in the PRC, despite government attempts to diversify by encouraging investment in Southeast Asia.

The direct consequence of this is the continued increase in cross-strait trade. Taipei, China has been an export-oriented economy for the past 40 years and remains so today. This, of course, makes it vulnerable to downturns in the world economy, as this round of external disturbance illustrates. However, over the past two decades, the trading partners for Taipei, China have changed. Taipei, China maintains a trade surplus; but if cross-strait trade is removed, it is seen to have been running a trade deficit with the rest of the world for about 20 years.

3. TRADE DEPENDENCY

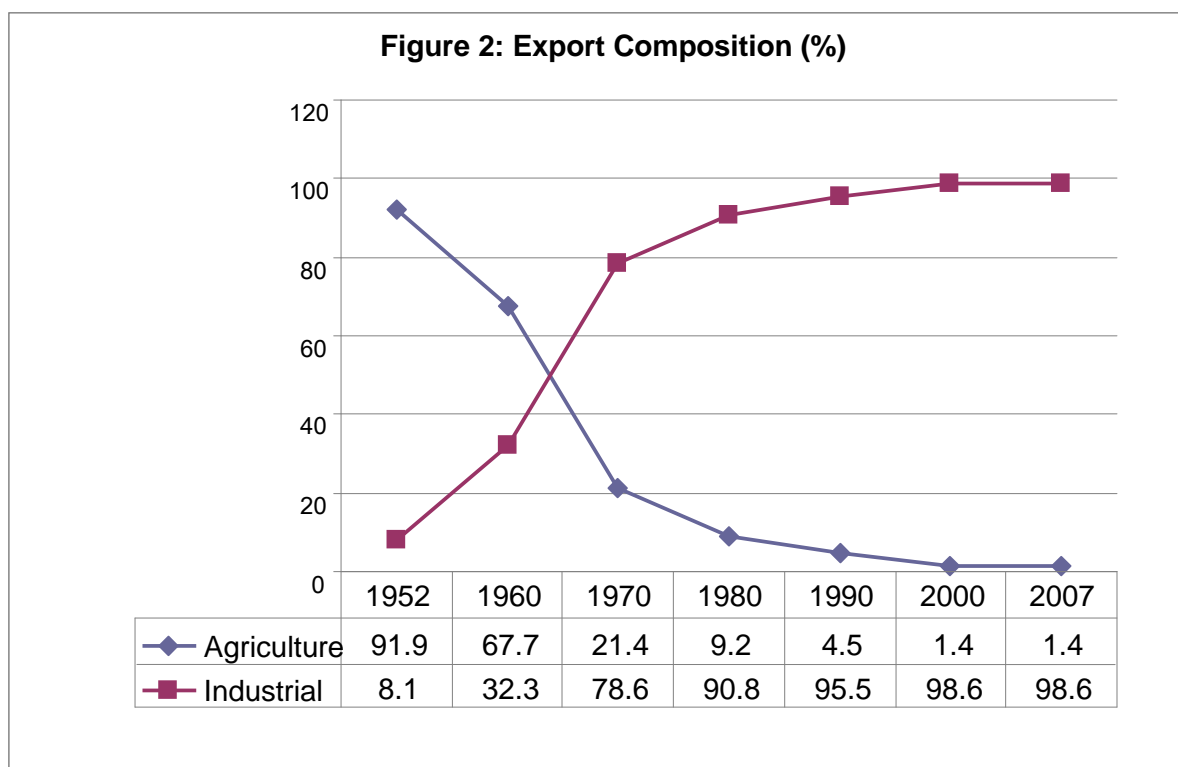
Like most developing economies, Taipei, China went through an import substitution stage, before entering an export era in the 1960s. During that decade, trade volume increased fivefold, and accelerated to a tenfold increase in the 1970s. Growth has since slowed (doubled in the 1980s, and almost doubled in the 1990s). However value-added increased as export composition shifted dramatically in the late 1970s and early 1980s—from predominantly agricultural commodities to industrial goods (now 98%). Thereafter, industrial exports maintained this dominance but also went through several major structural changes.¹⁰ Today, the information and electronics industry is at the center of the export portfolio.

⁸ An argument can be made that the FDI from Hong Kong, China is grossly overestimated as close to 50% of the Hong Kong, China investments are "round-tripping" of PRC funds, i.e., PRC funds returning to the PRC via Hong Kong, China so as to take advantage of preferential treatment given to foreign investments. In contrast, Taipei, China's FDI in the PRC may be significantly understated, as significant restrictions are placed on Taipei, China firms investing in the PRC. This leads to underground investments and investments via foreign subsidiaries of Taipei, China firms (Hou 2009b).

⁹ The first major wave came with the late Ming Dynasty General Zheng Cheng-Kung as he defeated the Dutch (who had occupied Taipei, China) in 1662 and used it as a base for military campaigns against the Ching Dynasty that defeated the Ming. After the end of the Zheng holdout, the Ching court intentionally encouraged migration to solidify development and the jurisdiction of Taipei, China.

¹⁰ The first major structural change occurred in the late 1970s, as Taipei, China's manufacturing exports changed from items such as textiles, shoes, and umbrellas, to basic computer electronics. This was a pivotal point in Taipei, China's economic development as this structural upgrade coincided with the first major human capital upgrade initiated in 1968.

That was not the case in the early stages. Taipei,China started relying on agriculture exports to Japan, with bananas and fresh-water eels among the major items (Hou and Appleton 1996). Agricultural products continued to account for more than 50% of exports well into the mid-1960s, before industrial products (mainly textiles) exceeded agricultural exports before the close of the decade. This side of Taipei,China’s economic history is well documented (Figure 2).



Source: Department of Statistics. Ministry of Finance; Taipei,China

The pace of growth of Taipei,China’s trade volume continues in this new millennium. From 2001 to 2008, total trade volume had doubled (Table 2). While 2009 will undoubtedly be a down year, I am confident it will not be enough to bring the decade to below a twofold increase. Under strategic government policy guidance, US aid, human capital investment, and benefits from stable world growth, Taipei,China has enjoyed consistent trade surpluses for most of the past four decades. In fact, since 1986 its average trade surplus has been US\$14,395 million/year,¹¹ despite several downturns in the global economy.

Disregarding the global recession of 1982, Taipei,China has experienced only 3 years (including 2009) where the growth rate of exports was negative: 1998 (East Asian financial crisis), 2001 (World Trade Center attack), and 2009. Even in these down years, trade dependence was high. In 1998, its trade surplus fell 20% from the previous year, but was still 2.7% of real GDP (down from 3.2% for 1997). In terms of total trade (exports plus imports), the trade dependency (trade/GDP ratio) was 80% down from 91% in 1997 and exports accounted for 41% of GDP down from 43.6%. In 1999, the trade surplus rose sharply (70%) to US\$12.5 billion, or 4.3% of real GDP, with the trade–GDP ratio at 81% and exports accounting for 42.5% of GDP.

¹¹ Roughly after the Rostovia take-off (Rostow 1960). See Fuess and Hou (2009) for a discussion.

Table 2: Historical Performance of Taipei,China's External Trade

Year	Trade Volume (US\$ million)			Growth Rate (%)	
	Exports	Imports	Balance	Exports	Imports
1981	22,611	21,200	1,412	14.1	7.4
1982	22,204	18,888	3,316	(1.8)	(10.9)
1983	25,123	20,287	4,836	13.1	7.4
1984	30,456	21,959	8,497	21.2	8.2
1985	30,726	20,102	10,624	0.9	(8.5)
1986	39,862	24,182	15,680	29.7	20.3
1987	53,679	34,983	18,695	34.7	44.7
1988	60,667	49,673	10,995	13.0	42.0
1989	66,304	52,265	14,039	9.3	5.2
1990	67,214	54,716	12,498	1.4	4.7
1991	76,178	62,861	13,318	13.3	14.9
1992	81,470	72,007	9,464	6.9	14.6
1993	85,092	77,061	8,030	4.4	7.0
1994	93,049	85,349	7,700	9.4	10.8
1995	113,342	104,012	9,330	20.2	21.4
1996	117,581	102,922	14,659	3.7	(1.0)
1997	124,170	114,955	9,215	5.6	11.7
1998	112,595	105,230	7,366	(9.3)	(8.5)
1999	123,733	111,196	12,537	9.9	5.7
2000	151,950	140,732	11,218	22.8	26.6
2001	126,314	107,971	18,344	(16.9)	(23.3)
2002	135,317	113,245	22,072	7.1	4.9
2003	150,601	128,010	22,590	11.3	13.0
2004	182,370	168,758	13,613	21.1	31.8
2005	198,432	182,614	15,817	8.8	8.2
2006	224,017	202,698	21,319	12.9	11.0
2007	246,677	219,252	27,425	10.1	8.2
2008	255,629	240,448	15,181	3.6	9.7
2009 ^a	88,485	72,955	15,530	(34.2)	(42.3)

Notes: () = negative value.

^a Cumulative through June. Growth rate is compared with the same period (Jan–Jun) of 2008.

Source: Ministry of Finance, Customs data (June 2009). Exports based on FOB (Free On Board), imports are CIF (Cost, Insurance, and Freight).

Taipei,China was relatively unscathed by the 1998 East Asian financial crisis, as real GDP grew at a rather robust 5% (whereas, GDP fell in Indonesia by 13%, in Thailand by 11%, and in the Republic of Korea by 7%).

On the surface, 2001 seemed a like a different matter. Taipei,China's real GDP contracted by 5% in 2001, while 2000 still registered a healthy 6% growth. Exports fell by 17% in 2001 but rebounded with 7% growth in 2002, but still below the 2000 level. Despite these grim figures, the trade surplus rose to US\$18 billion or 6% of GDP (as imports fell even more than exports). Trade dependency (trade–GDP) fell from 103% in 2000 to 78% in 2001. In terms of exports, trade dependency fell to 42% (from over 53% in 2000). By 2002, Taipei,China had stabilized. The surplus was 7% of GDP, and the trade dependencies were both slightly higher than the previous year. A similar pattern will most likely follow in this latest downturn.

The IMF estimates that Taipei,China's economy will contract 7.5% in 2009 (*World Economic Outlook* 2009, April); *Global Insight* puts it at a 4.5% contraction. However, outsiders seem to continuously underestimate the resilience of the Taipei,China economy. Domestic

estimates paint a slightly more optimistic picture, putting the contraction at 2.1%.¹² This contraction is roughly comparable to 2001. And, like 2001, the decrease in imports outpaced the drop in exports, and the trade surplus is poised to be higher than 2008 (it had already surpassed the total surplus of 2008 by June of this year). In 2008, the trade surplus was 3.8% of GDP, and trade dependency had risen significantly to 124% (trade/GDP ratio) and 64% (export/GDP ratio), respectively (this reflects the dramatic rise in exports to the PRC from 2001 to 2008).

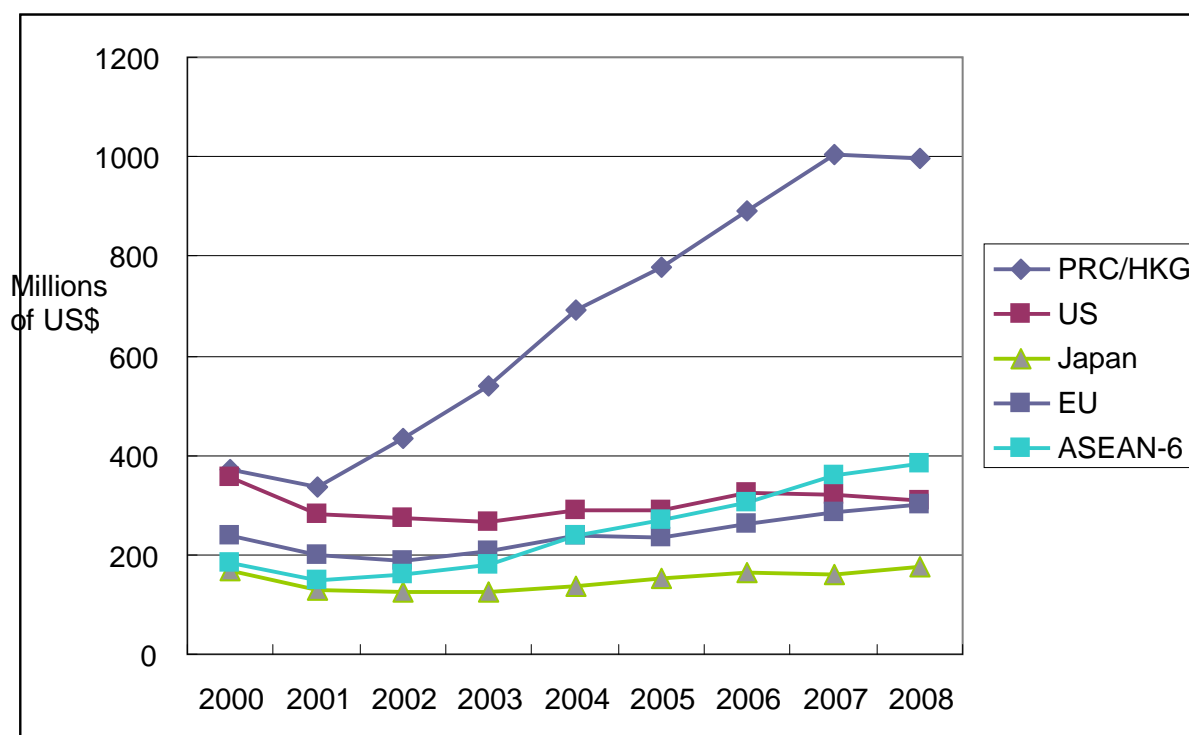
These comparisons are meant to demonstrate the resilience of the Taipei,China economy. While not trivializing the economic crisis, I am optimistic that Taipei,China will rebound from this latest round of economic storm no later than mid 2010. Indeed, many positive signs are emerging. Taipei,China is the world's largest supplier of contract computer chip manufacturing (foundry services) and is a leading manufacturer of LCD (liquid crystal display) panels, DRAM (dynamic random access memory), networking equipment, and consumer electronics (designer as well). The worldwide stimulus worth US\$2.2 trillion has stabilized demand and boosted shipments for exporters including Komatsu and Taipei,China Semiconductor Manufacturing. Taiwan Semiconductor,¹³ the world's biggest made-to-order chipmaker, said sales in June (2009) were 5.3% higher than in May. The company is a bellwether for the electronics industry because it makes chips for products ranging from mobile phones to game consoles. In addition, part of Taipei,China's contraction is due to the fact that many industrial manufacturers, such as Taipei,China Semiconductor, have been drawing from their inventory. With inventory almost depleted, these manufacturers will need to expand production and restock shelves.

The hollowing-out of Taipei,China's industrial base, which has been a hot issue for almost two decades, seems to have little impact on the resiliency of the economy. Nevertheless, this hollowing-out due to the massive FDI in the PRC has made the cross-strait economies seem like Siamese twins (at least from Taipei,China's point of view). Since the early mid-1990s, Taipei,China's investment in the PRC has been growing exponentially (Hou and Zhang 2000, 2001). Parallel to this, the major trading partner (especially in terms of export destination) has exhibited dramatic change. Figure 3 shows Taipei,China's major export destinations since 2000. Throughout this period, exports to the US and Japan have been fairly stable, with a slight decrease in the US and a small rise in Japan.

¹² This is the simple average of the forecast by the Directorate-General of Budget, Accounting, and Statistics, the Council for Economic Planning and Development, Chung-hua Institution for Economic Research, and Taipei,China Institute of Economic Research.

¹³ A commercial company in the ADB member referred to as "Taipei,China."

Figure 3: Exports by Destination (in US\$ million)



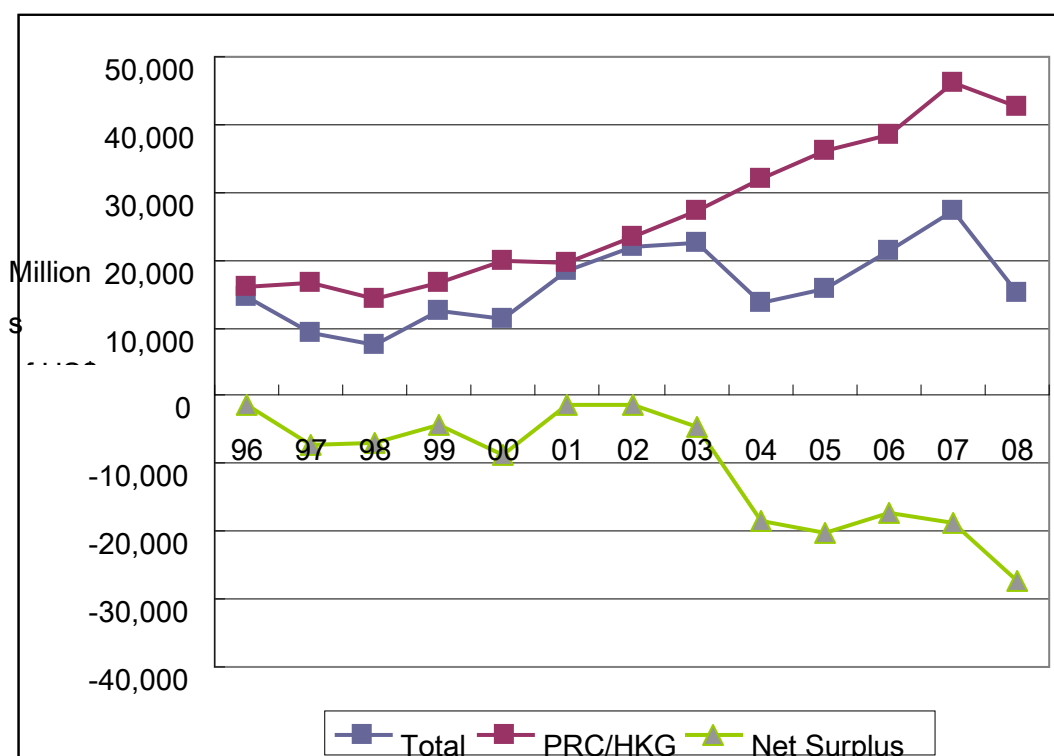
Notes: PRC/HKG = The People's Republic of China; and Hong Kong, China. ASEAN-6 = Viet Nam, Singapore, Thailand, Malaysia, Indonesia, the Philippines.

Source: Department of Statistics, Ministry of Finance; Taipei, China

However, the other three major partners showed much more dramatic shifts. Taipei, China's exports to the European Union and to ASEAN-6 countries increased over this period, with the latter growing at a faster rate than the former, resulting in ASEAN-6 overtaking the European Union (and the US) to become the second largest export destination of Taipei, China.¹⁴ Dominating this otherwise significant result is the overwhelming increase in Taipei, China's exports to the PRC (and Hong Kong, China). In 2000, Taipei, China exported less to the PRC than to the US. Exports grew rapidly after the 2001 contraction, and by 2008 exports to the PRC were more than three times exports to the US. In fact, exports to the PRC are almost the sum of exports to the other four destinations. To bring this into better focus, Figure 4 illustrates Taipei, China's trade surplus.

¹⁴ This reflects Taipei, China's two-pronged approach to its development of economic ties: westward (PRC) and southward (ASEAN).

Figure 4: Trade Surplus (in US\$ million)



Notes: PRC/HKG = The People's Republic of China; and Hong Kong, China. ASEAN-6 = Viet Nam, Singapore, Thailand, Malaysia, Indonesia, the Philippines.

Source: Department of Statistics, Ministry of Finance; Taipei, China

As impressive as Taipei,China's trade surplus is, if we superimpose Taipei,China's trade surplus with the PRC, it is evident that Taipei,China has been running a trade deficit with the rest of the world since 1996. In this round of economic crisis, some have pointed to this intimate tie with the PRC as the root cause of Taipei,China's contraction, arguing that Taipei,China perhaps should diversify and reduce economic ties with the PRC. I disagree and the statistical evidence is clearly against this. Given Taipei,China's export distribution, one only needs to look at the IMF's 2009 *World Economic Forecast* to draw this inevitable conclusion. The IMF projected 6.5% growth for the PRC, and about the same for ASEAN-6 (Table 3). In July 2009, the *World Economic Outlook* update upgraded the PRC's projected growth rate to a much more robust 7.5%. It also upgraded the projection for Japan and the Asian Tigers as a whole, with a slight downgrade for ASEAN-5 countries. Taipei,China's current export distribution is noted to be "ideal." and the massive PRC stimulus will most certainly have a direct benefit for Taipei,China exports.

The IMF has a much more pessimistic view of Taipei,China. *Global Insight* is a bit more upbeat, but still has a lower forecast than what is projected by domestic sources. In contrast, the IMF believes the Republic of Korea will have the best performance among the Asian Tigers. Among the four Asian Tigers and the PRC, Hong Kong, China and Singapore are more similar due to their size, while Taipei,China and the Republic of Korea are more comparable in many other respects (Table 4).

Table 3: World Economic Outlook 2009

Item	World Economic Outlook April 2009				July Update	
	2007	2008	2009	2010	2009	2010
World Output	5.2	3.2	(1.3)	1.9	(1.4)	2.5
United States	2.0	1.1	(2.8)	0.0	(3.8)	0.6
European Union	2.7	0.9	(4.2)	(0.4)	(4.8)	(0.3)
Japan	2.4	(0.6)	(6.2)	0.5	(6.0)	1.7
NICs	4.5	1.7	(5.4)	0.7	(5.2)	1.4
Hong Kong, China	6.4	2.5	(4.5)	0.5		
Republic of Korea	5.1	2.2	(4.0)	1.5		
Singapore	7.8	1.1	(10.0)	(0.1)		
Taipei,China	5.7	0.1	(7.5)	0.0	(2.1) ^a	
PRC	13.0	9.0	6.5	7.5	7.5	8.5
India	9.3	7.3	4.5	5.6	5.4	6.5
ASEAN-5	6.3	4.8	0.0	2.3	(0.3)	3.7
Indonesia	6.3	6.1	2.5	3.5		
Malaysia	6.3	4.6	(3.5)	1.3		
Philippines	7.2	4.6	0.0	1.0		
Thailand	4.9	2.6	(3.0)	1.0		
Viet Nam	8.5	6.2	3.3	4.0		

Notes: () = negative number; NIC = newly industrialized country

^a This is the simple average of the forecast by the Directorate-General of Budget, Accounting, and Statistics, the Council for Economic Planning and Development, Chung-hua Institution for Economic Research, and Taipei,China Institute of Economic Research..

Source: International Monetary Fund, World Economic Outlook 2009.

Table 4: Comparison of Taipei,China and Republic of Korea, 2008

Item	Taipei,China	Republic of Korea
Population (million)	22.9	47.8
GDP (PPP), US\$ billion	695.4	1,342.0
Growth Rate, 2007 (%)	5.7	5.1
GDP by Sector (%)		
Agriculture	1.4	3.0
Industry	27.5	39.4
Service	71.1	57.6
Per Capita GDP	\$30,100	\$27,646
Exports (\$ billion)	246.7	371.8
Foreign Exchange Reserve (\$ billion)	274.7	264.3
Labor Force (million)	10.78	23.99
Labor Force by Sector (%)		
Agriculture	5.3	17.3
Industry	36.8	17.3
Service	57.9	75.2
Inflation Rate	1.8	2.5
Public Debt (% of GDP)	27.9	33.5
External Debt (\$ billion)	98.4	3.7

GDP = gross domestic product; PPP = purchasing power parity .

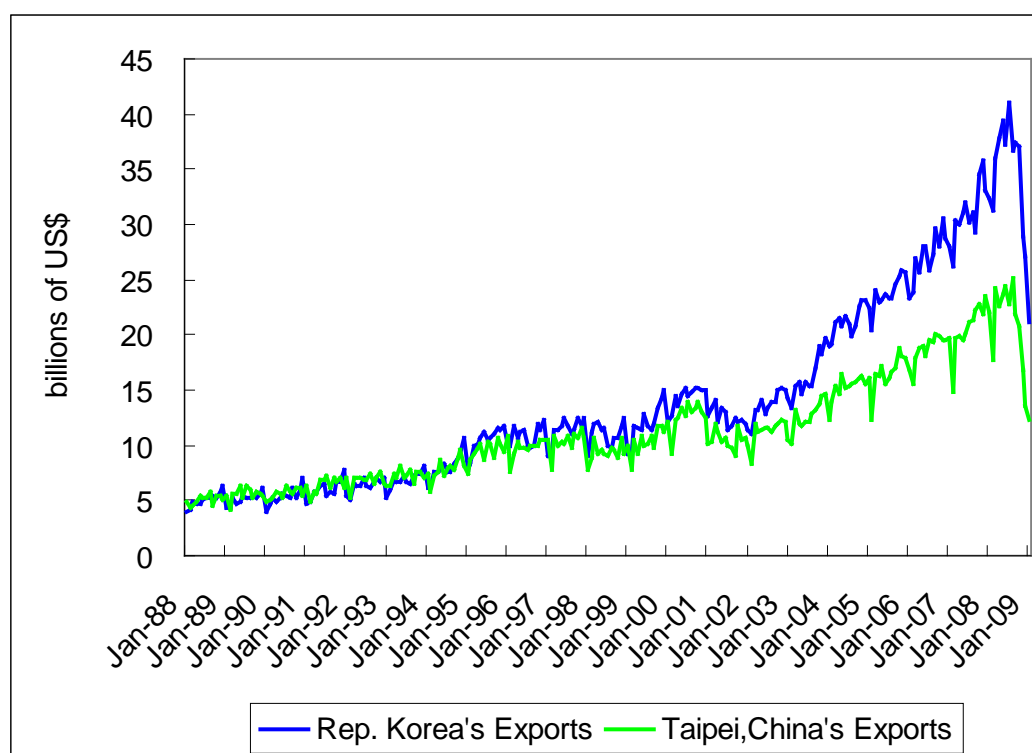
Source: CIA World Fact Book, 2009.

The debate regarding advantages of the two industrial organizational structures has been ongoing for decades in both countries. It is beside the point and perhaps a bit too late in the development stage for both economies to consider major changes. All that can be done is to tilt the balance, to reverse the unattainable and most likely undesirable. It is, nevertheless, a part of the strategy that both governments must seriously consider. As most economies represented here (with perhaps the exception of India) are highly export oriented, the export sector between the Republic of Korea and Taipei,China will be the natural final focus.

The Republic of Korea had total exports for 2008 of \$371.8 billion, compared with Taipei,China's \$246.7 billion. But, given the fact that the Republic of Korea is more than twice as large (in terms of population and labor force), and has a GDP (in purchasing power parity terms) almost double that of Taipei,China, the comparison of exports is misleading. Based on the export/GDP measure, the trade dependency of Taipei,China is 35.%, while for the Republic of Korea it is 27.7%. Both are relatively high when compared with the US (9.0%), India (14.5%), Indonesia (15.1%), or Japan (15.8%). It is comparable with the PRC (32.3%), but much lower than Thailand. In addition, Taipei,China and the Republic of Korea share another common trait: both have switched from having the US as the largest export market to having the PRC as the main destination for exports.

Table 4 provides a snapshot of the current position, like the end of a long race. To get a better picture, we need to look at a long-term comparison. Figure 5 plots the month-to-month exports of the Republic of Korea and Taipei,China for the last two decades. A clear picture emerges. Up to the mid-1990s, Taipei,China and the Republic of Korea had comparable numbers, but then the Republic of Korea began to break away and extended the lead in the last 5 years. This raises the question, is the *chaebol* structure superior to SME operations? The evidence would seem to suggest so. I am not convinced.

Figure 5: The Republic of Korea and Taipei,China Monthly Exports (\$ billion)



Source: Korea Customs Administration, the Republic of Korea; Department of Statistics, Ministry of Finance; Taipei,China

First, the Republic of Korea's economy is twice the size of Taipei,China. Rather than saying Taipei,China lost its edge, it is perhaps more appropriate to say that the Republic of Korea has improved its overall efficiency and is moving toward what a relative balance should be. Second, the PRC's economy started to take off (after the important 1992 southern tour by Deng). With the passage of the *Provisional Guidelines for Foreign Investment Projects* (April 1994), FDI in the PRC rose steeply; the country became the largest recipient of FDI among developing economies, and second only to the US (even topping the US in 2003). Also, the PRC started to allow foreign investors to sell part of their output domestically rather than only export it.

The immediate impact was a large number of Taipei,China firms moving to the PRC (Hou and Zhang 2000, 2001). During this period, Taipei,China was the second largest provider of FDI to the PRC, after Hong Kong, China (Taipei,China investment probably exceeded that of true Hong Kong, China investments). In comparison, the Republic of Korea's FDI in the PRC was small. This implies that many of what would have been Taipei,China exports are now counted as PRC exports. An interesting fact is that the number of Section 301 investigations against Taipei,China decreased dramatically, while the number of US investigations against the PRC started to rise.¹⁵

The departure between the long-term time trend of exports between Taipei,China and the Republic of Korea also coincides with the time when Taipei,China reached a true two-party democracy. This also translated into more political positioning that may have had a negative

¹⁵ Section 301 of the US Trade Act of 1974, (Pub.L. 93-618, 19 U.S.C. § 2411) authorizes the US President to take all appropriate action, including retaliation, to obtain the removal of any act, policy, or practice of a foreign government that violates an international trade agreement or is unjustified, unreasonable, or discriminatory, and that burdens or restricts the US.

impact on economic planning and development. It also led to a long period of stalemate in cross-strait relations. None of these provide evidence to support the theory that the *chaebol* structure is superior to SME operations. In fact, external factors led to the divergence in export growth.

4. TAIPEI, CHINA: HAVEN OF SMALL AND MEDIUM-SIZED ENTERPRISES

According to the official definition of the Taipei, China government (revised July 2005), SMEs in manufacturing, construction, and mining must have actual capitalization of less than NT\$80 million, or fewer than 200 permanent employees; all other enterprises must have annual sales under NT\$100 million or fewer than 50 permanent employees. From the data collected, the percentage of SMEs among all enterprises has never been below 96%. In fact, roughly one of seven workers in Taipei, China owns his or her own business. The 2008 figures indicate 1.23 million SMEs are operating (97.6% of all enterprises), employing 8 million workers (76.6% of total employment). It is not an exaggeration to state that SMEs are encoded into the spirit of Taipei, China.

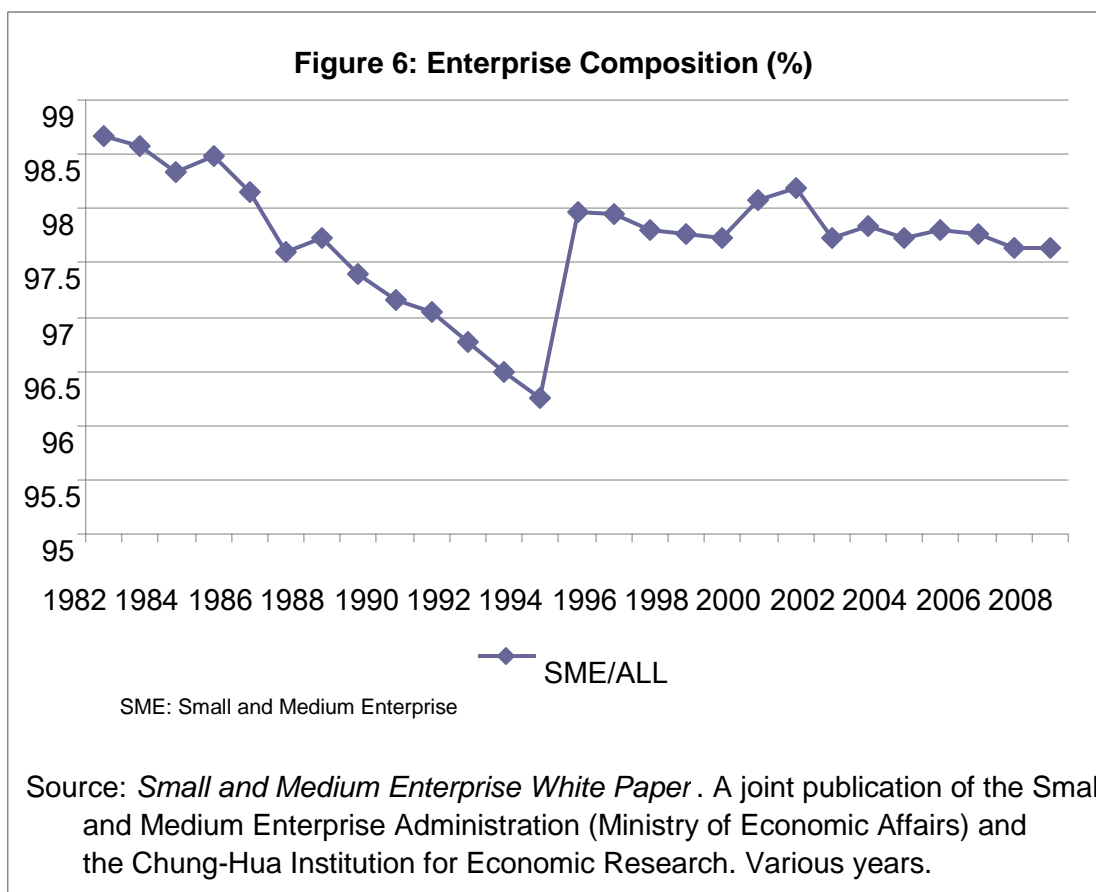
Unlike the Republic of Korea, where the *chaebols* were originally family businesses that received government-favored preference and grew into conglomerate giants, the early Taipei, China government under Chiang Kai-shek intentionally separated government and business. The government nationalized major primary sector manufacturing into such entities as Taiwan Sugar, Taiwan Salt, Taiwan Pineapple, and the Taiwan Tobacco and Liquor Monopoly Bureau;¹⁶ in addition to the usual nationalization of utilities and banks. The best jobs were in political careers, but most people do not have the connections for these, thus they turned to operating their own small business. These were bankrolled via personal and family savings and via informal financial networks (*huei* or 會).¹⁷

The assigned task here is to analyze whether global economics has had any impact on the industrial structure of Taipei, China. Since it is dominated by SMEs, the question is whether the SMEs are adversely affected by this round of global economic crisis. The data is really not available for that explicit purpose. However, we can draw some lessons from how the 1998 East Asian financial crisis and the 2001 recession (following the attack on the World Trade Center) affected SMEs in Taipei, China. The question is whether the more vulnerable SMEs were hit harder. If so, this should emerge in the weight of SMEs in the overall Taipei, China economy.

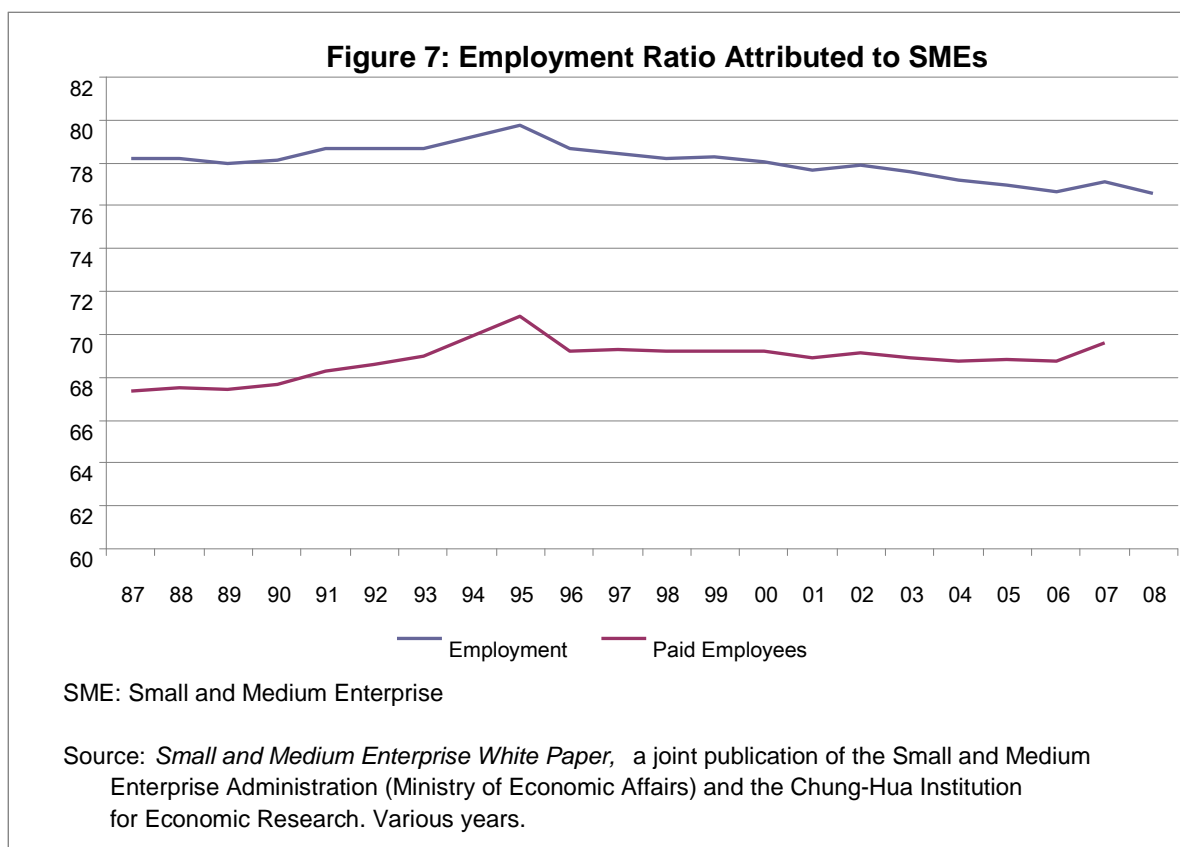
Given the time frame, I have not delved as deep as I would have liked. I am simply presenting some superficial preliminary analysis. Figure 6 plots the time trend of the business composition of the Taipei, China economy. The SMEs maintain a very high percentage ratio of the businesses. From 1982 to 1994, the importance of SMEs in the overall picture has declined almost continuously, but that is exaggerated by the scale. It fell from a peak of 98.7% in 1982 to 96.3% in 1994. I am not sure what accounted for the rise from 1994 to 1995 (again, the scale is exaggerated in the graph). It is most likely a change in the definition of SMEs. Regardless, the ratio has been incredibly stable since; a high of 98.2% (2001) and a low of 97.6 (2007). The slight rise around 2001 was probably due to the World Trade Organization effect.

¹⁶ Manufacturing entities in the ADB member referred to as "Taipei, China."

¹⁷ This is a very interesting multistage game with a change in probability condition at every round. It is still a very integral part of Taipei, China society, and is usually between neighbors, colleagues, and acquaintances. It is a form of borrowing and saving outside of financial institutions.



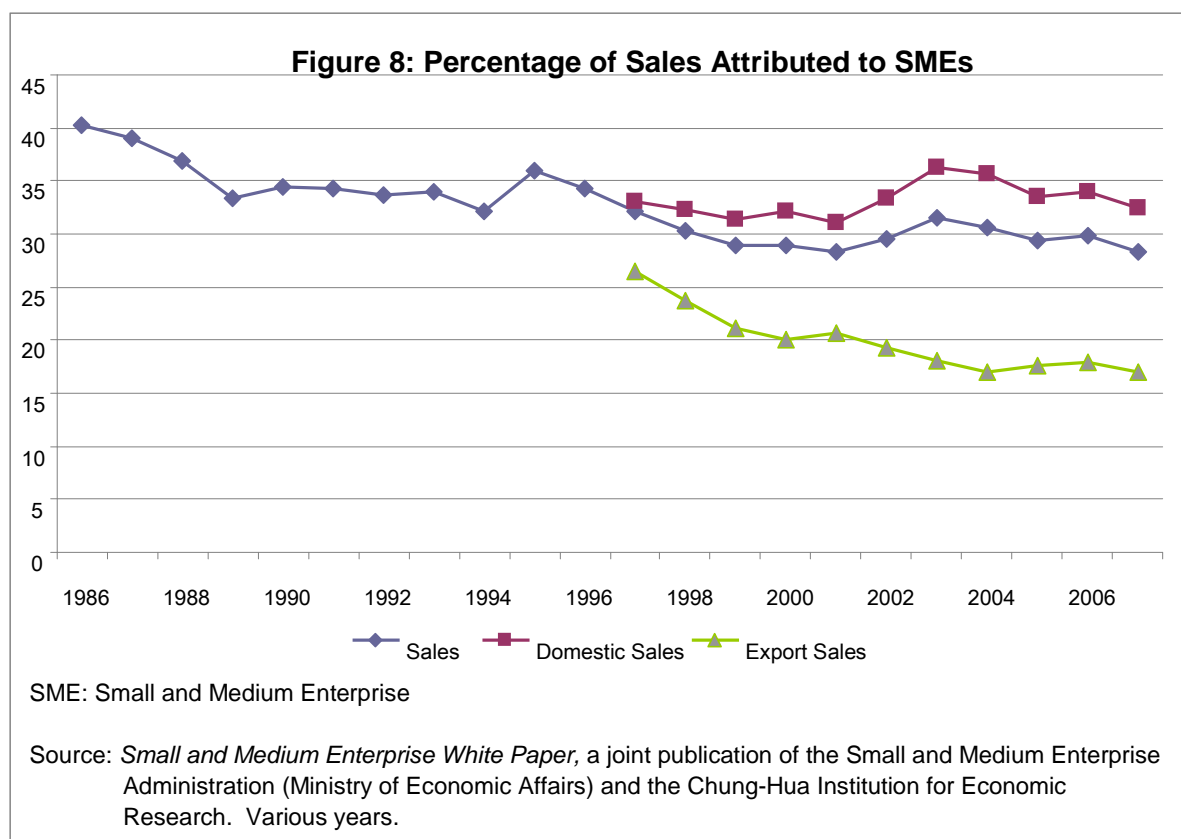
In terms of the 1998 East Asian financial crisis, SMEs accounted for 97.8% of Taipei,China’s total number of enterprises in 1997, 97.8% in 1998, 97.7% in 1999, and 98.1% in 2000. The crisis had no apparent effect. In 1998, Taipei,China’s growth rate decreased to 4.7% (from 6.8% in 1997) and exports shrank by 9.3%. Based on the SME ratio, large enterprises and SMEs were hit equally hard. For the 2001–2002 recession, Taipei,China’s real GDP grew at 6.3% in 2001 (5.5% in 2000), but contracted by 2.2% in 2002. This was followed by 3.5% growth in 2003 and 2.2% in 2004, before rising back to 6% in 2005. The SME ratio first rose then dipped and stayed stable; again, no detectable effect (Figure 6).



In terms of jobs, Figure 7 illustrates two measures: (i) employment—the percentage of total employment accounted for by SMEs, and (ii) number of paid employees—taking owners and employers out of the mix. Both measures rose steadily until 1995 (not 1994) followed by a structural drop. Perhaps this was due to a revision of the definition; I am not certain. After 1995, the employment ratio continued to fall; from 78.64 in 1996 to 76.58 in 2008. In contrast, the paid employees ratio remained remarkably stable; from 69.24 in 1996 to 68.76 in 2006 (lowest at 68.74 in 2004), before rising slightly to 69.60% in 2007.¹⁸ Again, no impact of the 1998 East Asian financial crisis or the 2001–2002 recession is detectable.

For the net gauge, I turned my attention to the ratio of sales. I look at three measures of sales. The first is overall sales—out of all sales, what is the percentage from SMEs. The second measure is of internal (domestic) sales only, while the third looks at direct exports. The time series of the latter two are shorter due to data availability and other issues. There seems to be a slight downward trend in the ratio of total sales attributable to SMEs (overall sales) over the sample period, with a couple of rises in between (the 1994–1995 rise may be due to revision of the definition). The domestic sales pattern seems to mirror overall sales, but export sales showed a much more distinctive downward trend (Figure 8).

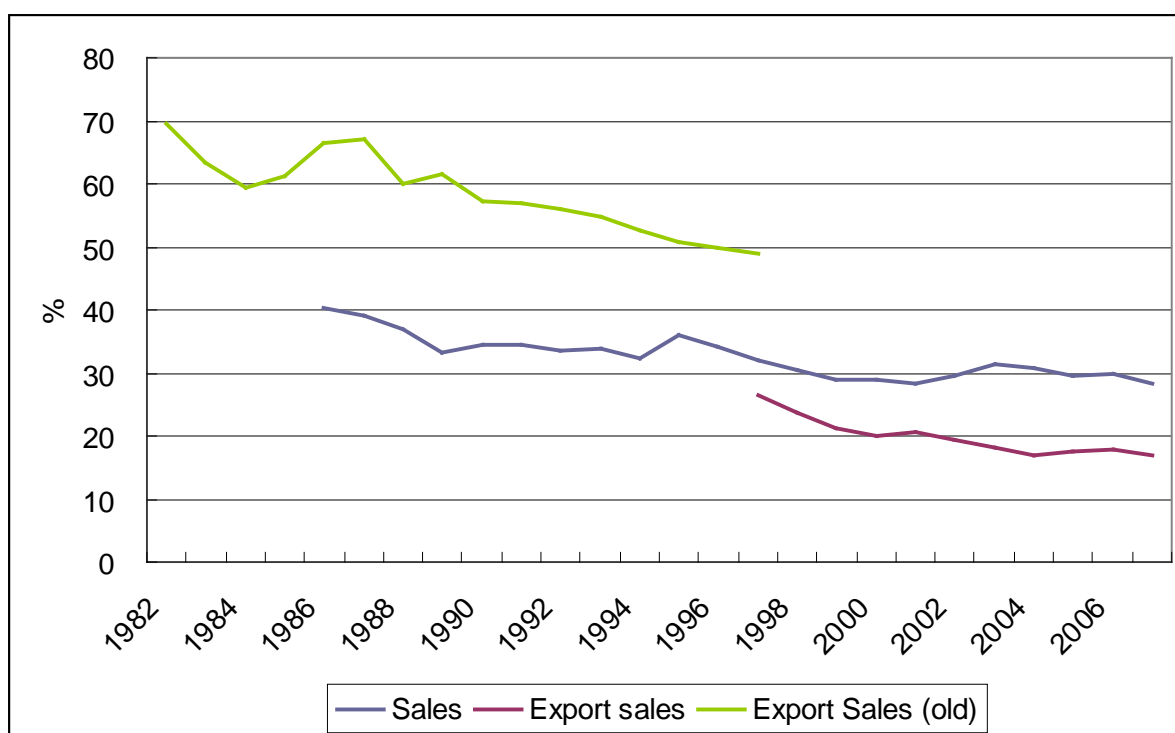
¹⁸ The pattern of both measures seems to indicate that the average size of SMEs has increased.



For the overall sales and domestic sales measures, the two recessions seemed to have no effect. The slide in sales is more of a long-term trend than during the 1998 crisis. As for the 2001–2002 recession, the SME share of total sales increased. This seems to signal that the SMEs gained in this round of economic downturn, as does the domestic sales measure. The export sales measure shows a more distinctive decline and cannot be explained away in the same way. The relatively steep drop from 1998 to 1999 began in 1997. Without further study, it is difficult to claim that this decrease was the effect of the 1998 East Asian financial crisis. The export sales measure was stable during 2000–2001 before starting another downward slide (until 2004). I am still not convinced.

I compiled additional data for export sales, extending to 1982. However, there is a problem. As is evident in Figure 9, the two time series are incompatible. But the figure shows that the declining trend in the SME share of export sales had a much longer decline, dating back to perhaps 1988, or 1990 at the latest. This is not due to the economic crises—the outward pull of being close to the world’s largest FDI magnet. Despite government regulations, Taipei,China businesses were investing in the PRC long before it was formally allowed. Larger firms were more under the scrutiny of the government, but many SMEs were able to invest in the PRC without formal government approval. This is the main reason, in my opinion, for the decline in the percentage weight of direct imports from Taipei,China attributable to SMEs.

Figure 9: Percentage of Export Sales attributed to SMEs



Note: SMEs = Small and medium sized enterprises

Source: Small and Medium Enterprise White Paper. A joint publication of the Small and Medium Enterprise Administration (Ministry of Economic Affairs) and the Chung-Hua Institution for Economic Research. Various years.

Over the years, the main motivation for Taipei,China’s FDI changed from almost equal consideration to “expansion of markets” and “low-cost of labor” to focusing on the expansion of market size (Chen 1992). Hou (2009b) showed that the number of Taipei,China investors in the PRC is almost twice as high as the “officially” authorized number. The contention here is that most of the unofficial investments are carried out by export-oriented SMEs as they seek to expand their market. Based on this self-selection, it is natural to expect that SMEs that stayed behind are more oriented to the domestic market than those that moved to the PRC. In this aspect, the export contributions of the SMEs remain, only the mode and channel has changed.

Taken in conjunction with the fact that Taipei,China’s exports to the PRC have risen so dramatically in the past 8 years, we can conjecture that many of these exports are probably intermediate goods or equipment to support Taipei,China firms operating in the PRC. Statistical evidence strongly supports this claim. What I am interested in is whether we see such evidence even in the SMEs that stayed in Taipei,China, as SMEs operate in a chain-link organization structure where downstream manufacturers are supplied by a series of suppliers that supply suppliers. Given time constraints, I have not been able to carry out a full investigation of this aspect and present indirect circumstantial evidence.¹⁹

Manufacturing provides Taipei,China’s main exports. In this study I will examine the manufacturing sector as a whole. In 2007, based on total sales, the two largest business categories were “manufacturing” and “wholesale and retail.” Manufacturing had NT\$13,327.7 billion in sales, accounting for 37.1% of the sales value of all businesses that year. SMEs

¹⁹ The entire analyses presented in this study are based on simple summary statistics and time trends. To rigorously analyze the economic and structural impact of the cited economic downturns, regression analysis is the preferred methodology. That is for another paper.

accounted for 30.19% of manufacturing sales. Wholesale and retail business sales totaled NT\$12,613 billion, or 35.15% of all sales. In this category, SMEs accounted for 30.97%, slightly higher than manufacturing. However, the export value indicates the two categories show significant differences.

For manufacturing, the export value is NT\$6,254 billion, or 46.92% of the sales value. Of this, the export value attributed to SMEs is NT\$1,150 billion, or 18.39% of manufacturing exports. In contrast, wholesale and retail export value is NT\$2,758 billion, or only 21.87% of the sales value. SMEs still account for an impressive 16.3% of export values in this category, but the dollar value is substantially lower at NT\$450 billion. As a pure conjecture, these exports could be part of the supply link to Taipei,China's FDI in the PRC.

As manufacturing is the largest export category in overall value and among SMEs, a snapshot of the timeline would be useful. In 1982, SMEs accounted for 75.53% of manufacturing exports. By 1990, this ratio had fallen to 60.49%, perhaps reflecting the start of SMEs moving to the PRC. The true evidence is when we compare data from 1998 with 1990. In 1998, SMEs only accounted for a mere 20.46% of manufacturing exports.²⁰ This reflects the surge of Taipei,China's FDI in the PRC in the 1990s (Hou and Zhang 2000 and 2001), and the very large amount of "unauthorized" investments (Hou 2009b), which are mostly likely made by SMEs rather than large enterprises. This ratio continued to fall among manufacturing, but at a much slower pace (to 18.39% in 2007), as most export-oriented SMEs interested in the PRC had probably already located there, and increasingly larger firms were providing FDI in Taipei,China.²¹

What I have tried to establish is that there does not seem to be any strong direct impact of external economic downturns on the industrial structure of Taipei,China, certainly not by firm size. What we observe is that Taipei,China is located alongside the world's second largest destination for FDI, one of the world's largest markets (at least in potential). Furthermore, it is an economy where Taipei,China entrepreneurs share the same history, language, and culture. So, the changes in Taipei,China's export patterns, in outward FDI, and in the composition of SMEs are largely due to this effect, which will overshadow any downturn in the global economy.

5. PRELUDE TO THE POLICY DISCUSSION

This discussion has established several things. Taipei,China is extremely trade dependent and this has not abated since the 1998 East Asian crisis, nor the 9/11 terrorist attacks in the US. If anything, its trade dependency has not only increased, but the composition of its export destination has had major realignments. The PRC has replaced the US as Taipei,China's largest trading partner, followed by ASEAN. This trend most likely will continue, with the only question about the relative composition of the PRC and ASEAN. In my evaluation this is a positive situation for Taipei,China under the current economic crisis, as these two economies and regions represent the two strongest performers. The only thing that could have improved Taipei,China's situation is if Taipei,China had a stronger trade relationship with India.

Another important characteristic of Taipei,China is the dominance of SMEs, which will always be part of the Taipei,China economic infrastructure. The large conglomerate structure of Japan and the Republic of Korea certainly has its advantages, but so do the SMEs. For example, the *chaebols* can take advantage of such items as large-scale operations and economies of scale, brand recognition, and easier financing. But they suffer from structural rigidity and enormous overhead, and these become heavy burdens during

²⁰ Even if we adjust for the potential structural change in the new definitions, it would still represent close to 40% of the manufacturing export attributed to SMEs.

²¹ Based on the most recent statistics, the PRC holds 70% of Taipei,China's outward FDI.

significant downturns. During the 1998 Asian crisis, Taipei,China's economic growth fell from 6.8% in 1997 to 4.65% in 1998. However, the Republic of Korea's real GDP growth rate plunged from 4.65% growth to a 6.85% contraction.²²

In contrast, SMEs are flexible in structure; quick to respond to business opportunities; and easier to adjust to downturns due to lower overhead, efficiency, and customer orientation. The entrepreneurs operating SMEs are industrious, innovative, and always keep a sharp eye on the latest technology available and trends in the market. They are like mobile special forces units that can move in and out of market segments with ease; this is not the case for large industrial firms. These characteristics of SMEs are why they are often called the engine of Taipei,China's economic success.

However, SMEs also face inherent disadvantages. The survival rate of SMEs decreases with the age of the business—only 62% of SMEs survive to their 5th year, this drops to 42% by the 10th year. This reflects such characteristics as small scale of operation, weak capital resources, and lack of transparency in accounting practices. The last aspect is often fatal as it hampers their ability to obtain credit from banking institutions, as the usage of loans and the source of repayment are often unclear. The collateral they submit is also highly volatile in terms of business cycles, thus making them vulnerable during credit crunches.²³ To assist SMEs during this round of crisis, the government needs to take explicit measures and perhaps bear the risk burden that banks are not willing to take on. On the opposite side, SMEs should be more mindful of government policy actions and make proactive inquiries about the possibility of assistance or alternatives.

Another major characteristic is that Taipei,China has perhaps one of the lowest illiteracy rates (just over 2%) and among the best-educated labor force in the world. Currently it has over 160 colleges and universities, plus 16 junior colleges, with an enrollment in excess of a million students. It is arguable that Taipei,China is overeducated (Wang 2003). In 1985, it had 27 colleges and universities; by 1990 the number had surged to 46 and by 1995 to 60. By 2000, it had 127 college and universities, and within a few year this swelled to 142 (Ministry of Education, Taipei,China, 2003/04).

Given the rapid increase in colleges and universities, one has to admire the government's commitment to higher education, but also ask whether it is warranted. In a 1991 interview with *Money Matters* of the BBC,²⁴ I laid out the best possible scenario for the future of Taipei,China, which I will elaborate on more in the next section. In my opinion 1991 was the peak of Taipei,China's economic prowess, and over the last decade and a half it has squandered much of its economic capital. It is not too late, but a bold long-term plan needs to be established.

6. POLICY RESPONSE: SHORT-TERM AND LONG-TERM

At the outset, I would like to express a firm belief that I have had for close to 15 years. With the rise of the PRC, the traditional sense of the "flying geese" pattern of development is no longer applicable for Asia (Hou et al 1995). Instead, we will see a much higher degree of specialization of the other Asian economies as none can compete with the PRC's production. Each economy will have to pick a narrower specialization and hope to gain from technology agglomeration. We see this in the Asian Tigers, and are seeing similar

²² The IMF's 1998 *World Economic Outlook* only projected a 0.8% contraction.

²³ In addition to the higher risk associated with loans to SMEs, these loans are usually smaller and hence translate into higher institutional cost as the fixed cost associated with each loan does not differ much with the loan size. This, all things being equal, will reduce the willingness of banks to actively engage in smaller loans.

²⁴ The interview was in response to Taipei,China Aerospace's \$2 billion bid for a 40% stake in McDonnell Douglas.

patterns among the ASEAN-5. This implies a more explicit role for government in guiding the market mechanism. This characteristic of the Asian Tigers will most likely continue.

In a global economic crisis, the role of government is perhaps even more important. In real life, we mostly rely on our immune system to assure our health. When a mild illness occurs, we may take medications but rely on our body's immune system to restore our health; much like the market relies on the invisible hand in a mild recession. But when a truly major disease or injury occurs, we turn to our doctors and view them as our saviors; just like now when we turn to government leaders and hope that they will save the day (Hou 2007). The state we are in falls into this category. The increase in government regulation that will undoubtedly follow will lead to an increase in the cost of doing business, but the potential reduction of long-term risk exposure could be a plus (Hou 2009bc).

Taipei,China (as in other newly industrialized countries) has high foreign exchange reserves and high saving rates, enhancing the ability to weather this storm. In addition its financial market is still under development²⁵ and not fully integrated internationally. In the US, the large conglomerates like General Motors, Chrysler, and Ford suffered tremendous loss in their stock value. Taipei,China is dominated by SMEs; large firms do not have the same overbearing overhead as the US firms, or even that of Japan and the Republic of Korea. Thus, though the stock market has lost a lot of value, the financial misery index is still much better than in some neighboring countries. With the change of administration, the arrival of PRC institutional investors, and the impending Economic Cooperation Framework Agreement (ECFA), Taipei,China stocks are showing impressive gains, perhaps a leading indicator of things to come. In addition, Taipei,China's earlier GDP slowdown and worrisome drop in exports is at least partly due to manufacturers in the PRC (many of which are Taipei,China FDI firms) that are drawing down their inventories and not ordering replacements. As the shelves become bare, combined with the possibility that the US economy may have bottomed out, we see healthy signs that Taipei,China's electronic chip sales have been picking up since July 2009 (as reported by Taiwan Semiconductor²⁶).

The Taipei,China government has carried out a host of standard stimulus policies, many of which mirror those that the PRC and the US have undertaken. The economic effects of these government actions are starting to be felt or will soon materialize. The discussion of these policies is readily available. My focus here will be to point out things that the government needs to be more aware of in the short term (mostly relating to SMEs), and propose a long-run industrial policy perspective to aid the structural rebalance of the economy.

Before I do that I must applaud the ingenuity of Taipei,China's consumption coupon policy, which theoretically reduces the negative effect of the Ricardian equivalence. In addition, it should reduce the substitution effect and create a larger net expansionary effect. This innovative approach to the standard tax rebate has attracted much attention and may become the prototype of a new variation to a standard expansionary fiscal policy instrument that is taught in standard macroeconomics.

Short-Term Policy

While SMEs have the operating advantage of flexibility and mobility, they are weighed down by difficulty in obtaining credit from banking institutions. A major cause is the lack of transparency in their accounting practices, combined with the fact that most of their collateral is procyclical, and hence when a major downturn occurs, the value of this collateral drops precariously, making an additional line of credit impossible, not to mention the threat of a recall of existing loans.

²⁵ For example, asset securitization, the root cause of the subprime mortgage crisis, is still in the development stages (Lin 2008).

²⁶ A commercial company in the ADB member referred to as "Taipei,China."

The Central Bank of Taipei, China has lowered the key interest rate several times. However, the problem is not that the banks do not have the credit, but that with the severe economic contraction and uncertain (immediate) future of profitability of most firms, this raises the risk of credit loans and hence has deterred many banks from actively giving out loans. This is not unique to Taipei, China; it is also a serious matter in the US. In addition, even firms in good financial shape (hence less of a loan risk) are uncertain about how long the sluggish sales will persist and have mostly postponed their plans to expand, thus reducing the demand for loans (a classical example of what Keynes pointed out as the asymmetric performance of monetary policy).

The Taipei, China government has implemented many actions to assist SMEs, but the results have been disappointing. In June 2008, the government implemented plans to increase loans to SMEs. The stated objective was to increase total loans to NT\$300 billion by the end of 2009. Yet, since July 2008, bank loans shrank to NT\$170 billion (April 2009),²⁷ prompting the government to urgently revise the plan to aid the credit crunch of SMEs. One step was to increase the government credit guarantee up to 90%.²⁸ Yet, the average loan–equity ratio is only 70%, and credit loans to SMEs continue to deteriorate (be it at a slower rate).

I propose that the credit guarantee be immediately raised to 100%, and have this effective until June 2010. This is not a blank check for all SMEs. The government should use this opportunity to implement accounting reforms for SMEs. In the current stage, all SMEs that seek financing to ease their credit crunch must have their accounting books certified by independent certified public accountants. This will identify weak SMEs and any SMEs that are operating under false pretenses. With this certification, the government would provide a 100% guarantee to the bank and bear the risk that financial institutions are not willing to take. This should increase credit to SMEs that have a legitimate claim to future success and help them through the global crisis.

After the recovery, hopefully uniform and transparent accounting practice will become standard business practice to help monitor the financial health of SMEs and reduce the risk that banks bear. This should allow SMEs easier access to bank credit and at a better interest rate. These types of cost reductions due to government regulations are what I term “negative” transmission costs (Hou 2009c).²⁹ Even in this difficult time for many SMEs, they should be reminded that crisis also implies opportunities. Those that are willing to embrace this accounting reform will not only increase their chance of surviving the crisis, but also gain market share with the demise of many competitors and create new business opportunities.

In conjunction with this proposal, the government should conduct a standard survey of these SMEs as they move through the process of credit approval. The questions should include:

- What is the most important assistance the government can provide to SMEs?
- Do they have business operations in the PRC? If not, do they expect to in the near future?
- If they have established FDIs in the PRC, what is the reason they chose to do so? What are the difficulties they face in the PRC?
- If the government provides assistance for product development and design, would it be interested in co-financing such research and development (R&D)?

Aside from the SME issue, Taipei, China needs to have a more explicit cross-strait economic agreement. The proposed Economic Cooperation Framework Agreement is a start, but the

²⁷ Compared with March, the April loans to SME were down by NT\$25.7 billion.

²⁸ This is not unique to Taipei, China. The US increased the credit guarantee from 75% to 90%, effective until the end of 2009. Japan’s guarantee is 100%, effective from October 2008 until April 2010. Singapore raised the guarantee limit from 80% to 90%.

²⁹ This is negative in the sense that unlike the normal concept of costs, this actually reduces the cost of production and of doing business.

protection of Taipei,China firms in the PRC (especially SMEs) needs to be explicitly put on the table and a workable agreement reached in the earliest possible time frame. Given that the PRC accounts for more than 40% of Taipei,China's exports and 208% of Taipei,China's trade surplus, a coordinated policy pack would be beneficial.

Finally, the key to Taipei,China's economic recovery is not merely exports. Domestic consumption needs to be revived and the government has taken many measures to support this. However, what has really fallen on the domestic absorption side is investment. The government needs to take an equally aggressive attitude to encouraging domestic investment as it has done toward consumption. The proposed short-run policy to aid SMEs can be viewed as a way to funnel domestic private investment to SMEs that need credit easing?

Long-Term Policy

This is basically a national industrial strategy based on my personal naïve view. In my 1991 BBC interview, I proposed a development strategy of having Taipei,China gradually withdraw from manufacturing and elevate into a product development and design economy. In other words, shedding the manufacturing role (given the loss of comparative advantage) and becoming a big brain of R&D. At that time I was applauding Taipei,China's effort to establish science and technology universities. I had envisioned it as a second-round human capital upgrade.

For those too young to remember, in 1968 Taipei,China extended compulsory education from 6 to 9 years. In 1971, massive numbers of junior high school graduates were flooding out of the school gates, so the government passed the Statue to Encourage the Establishment of Vocational High Schools in 1970/71. This was instrumental when Taipei,China's industrial base upgraded from textiles and other consumer goods (for example, umbrellas and shoes) to electronics in the late 1970s, as the skilled labor force was in place. That is why I had envisioned high-quality science and technology universities producing quality laboratory technicians to serve under top research scientists and engineers with graduate degrees either domestically, or more likely from Japan, the US, and Europe. In a consulting role for the Council of Labor Affairs (Hou 1997), I advocated using the importation of foreign labor as a tool to mandate industrial upgrades of Taipei,China firms.

Unfortunately the government chose a different path. The numbers of graduates from bachelor-granting colleges and universities grew unabated, as many former vocational high schools, established in the 1970s, were upgraded to technical colleges and even universities. Despite this, the number of students majoring in science and technology has decreased. In 1998/99, science and technology accounted for 54.89% of enrollment, but the ratio dropped to 47.53% by 2008/09; signaling that many science and technology universities are becoming regular comprehensive institutions of higher education. Furthermore, the quality of education, perhaps better put, the quality of college students, has deteriorated.³⁰ The government has recognized the seriousness of the problem and started rigorous external reviews and accreditation procedures that will have the power to reduce the allowed enrollment of colleges and universities.

I hope the government follows through and brings the institutions of higher education up to par. The following are a few ideas. They are not meant to be well-thought out, detailed proposals—that requires a lot more work and is an independent project in itself.

³⁰ The pass rate of the national college entrance exam is routinely 96%–98%, as compared to the 10%–15% when I took the exam in 1979.

Human Capital

In addition to restoring science and technology universities to what they should be—a source of preparing solid science and engineers to play supporting roles in research and leadership roles in production, the government should create public funds to provide, for example, 2-year subsidies to Taipei,China researchers abroad to provide them with an incentive to return home. For those with patents or technology, the government should provide them with seed money to establish technology firms, much like in the Hsinchu Science and Industrial Park (established 1980), which has become the hotbed for Taipei,China's semiconductor, computer, telecommunications, and optoelectronics industries, including the world's top two semiconductor foundries: Taipei,China Semiconductor Manufacturing Company and United Microelectronics Corporation.

Industrial Technology Research Institute, a state-sponsored think tank located in the neighborhood of the science park, has played an important role in advancing Taipei,China's manufacturing processes. However, its effectiveness has been diminishing and a revamp is needed. Perhaps a new system should be considered where laboratories and researchers are established as semi self-sufficient institutions where they accept contracts from SMEs and the smaller of the large enterprises for product development and design. With these contracts as collateral, they can seek government funds to carry out high-end R&D. Their research results will be split between the funding SMEs, the research laboratories, and the government, with a sharing ratio to be determined. This will allow SMEs with development concepts, but lacking the budget, to carry out R&D without having full-time staff. If successful, these research labs will attract Taipei,China researchers living abroad (and foreign researchers alike). It can also provide employment for the top science and technology university graduates. The government, via matching research grants, can subsidize innovative SMEs and reap part of the reward to fund future research grants.

Unlike the Industrial Technology Research Institute, which has a top-down R&D framework, the proposed network of laboratories would function as a bottom-up process and may be more effective in supporting R&D needs of the vibrant SMEs. This will also have the effect of generating sustainable employment within Taipei,China. For example, the SMEs could produce the initial rounds of production in Taipei,China to get rid of the glitches and smooth out the production process. These factories could employ many of the science and technology graduates as production supervisors or higher paid production technicians to assure the highest quality of production. After the production process is perfected, it can stay in Taipei,China or be moved to production facilities in the PRC or ASEAN-5 countries. This is consistent with the administration's argument that the three-direct links will make it easier for business to keep the most advanced part of their operation, the R&D, and high-salaried management division in Taipei,China.³¹

Picking the Next Generation of Industrial Winners

Though not without debate, one can argue that the Taipei,China government played a key role in picking "winners" in its incentive guidance. The fact that Taipei,China has seven firms in the world's top 100 in the communication technology industry (second only to the US with 63 companies) can be viewed as proof. The following have been floated as possibly Taipei,China's next industrial darlings: Biotech, Optical Communication Technology, and Alternative Energy (solar panels, LED).

If true, the Taipei,China government should provide seed money to attract specialists of the targeted areas. In addition, the National Science Council should list specific grants for projects in these areas to encourage research in universities that will foster the training and education of future scholars and researchers in these areas, much like what the US did to attract college students to study engineering to fulfill President Kennedy's challenge of the

³¹ This was elaborated by our distinguished keynote speaker, Professor Jagdish N. Bhagwati, in an article he coauthored (Bhagwati et al. 2004).

moon landing. The Taipei,China government has implemented policies aimed exactly at this. Of course, this should be no surprise as it has the fortune of having a large group of concerned academics and government officials. Thus, a good policy direction can never have too many advocates.

Tourism, the Other Sustainable Industry

Because Taipei,China initiated the 5-day work week in 2003, domestic tourism has become a growth business. Improvement in transportation infrastructure has made this attractive, with private bed and breakfast hostels opening across the island. Since 20 May 2008, the three-direct links (“direct” transport, postal services, and trade) became the formal target, and many direct flights are available between Taipei,China and the PRC. This benefits the nearly 1 million people from Taipei,China living or working semi-permanently in the PRC, and makes travel to the PRC much more convenient for Taipei,China tourists. The next big step is to expand the quota for mainland Chinese tourists to visit Taipei,China.

This is an almost inexhaustible resource for Taipei,China as practically everyone in the PRC, given the chance, would visit Taipei,China. Of course, unlike tourists going to the PRC where the choices are varied and area vast, Taipei,China is a pond compared to the great lake of the PRC. To maintain the quality of the experience for Chinese tourists and the standard of life of Taipei,China residents, quantity control is a necessity, but that capacity limit is far above what is allowed. Taipei,China should plan ahead and develop hotel management personnel; this may lead to one of the more important majors in Taipei,China universities.

This is an important comparative advantage that Taipei,China enjoys. When a Chinese family considers a vacation abroad, they may be looking at the Republic of Korea, Japan, Malaysia, Philippines, or Thailand. However, unlike those that are substitutes for each another, Taipei,China is in a unique category that has no substitutes. All 1.3 billion people in the PRC would like the opportunity to visit Taipei,China at least once, and when they have all done so, their children and grandchildren probably would also want to visit. This is a sustainable and green industry.

7. CONCLUDING REMARKS

Unlike some of its neighbors that are represented at this conference,³² the industrial imbalance as a result of the global economic crisis is not evident in Taipei,China; especially when it comes to the effect by firm size. Taipei,China has always been dominated by SMEs. Their share in terms of weight in number, sales, and exports show different time trends, but no apparent effect of the Asian crisis, the 9/11 terrorist attacks, or the current downturn is detectable. The long-term trend persists and is more due to the magnetic effect of being alongside the PRC, and the sharing of the culture, history, and language links that make Taipei,China firms investment in the PRC more natural and inevitable than firms from Japan, the Republic of Korea, or Singapore.

Thus, the rebalancing of industries is due to this trade relationship rather than in response to the current global economic crisis. The SMEs are affected differently than large enterprises, but that simply reflects the pursuit of expanding markets, and is the result of the flexible and mobile nature of SMEs. Again, the main effect has little to do with the current crisis. With this said, the SMEs do face more dire circumstances than larger firms as they are considered riskier business (and more costly) from the banks’ point of view. A workable proposal is presented that will allow the Taipei,China government to increase aid to SMEs in exchange for accounting reform, which in the long-run will make it easier for SMEs to obtain bank

³² The ADBI conference titled Global Economic Crisis: Impacts and Implications for Industrial Restructuring in Asia, held in Tainan City; Taipei,China; on 19–20 August 2009, for which the original version of this paper was prepared.

credit at better rates. For the long run, I propose an industrial strategy that links one of Taipei,China's most important resource, human capital, to R&D, and to explicitly link it to SMEs. R&D has often been a weak link among SMEs, the proposed profit-sharing scheme in R&D development may provide a platform that channels government subsidy and guidance to product development and design that would foster SME growth.

I should emphasize that crisis implies opportunity. This is especially true for SMEs. By complying with the proposed government initiative to bring transparency to their accounting procedures, they can gain government guaranteed credit, which will see them through this difficult period. With their accounting practices up to standard, this dramatically reduces their risk in the eyes of financial institutions and will greatly increase the probability that they will obtain credit through the banks in the intermediate run. If the government does move to the proposed bottom-up R&D and the SMEs buy into this system, they will be able to open a pipeline of product design and advancements that will spur growth in the long run. Combined, the SMEs will be able to maintain and increase international competitiveness. The crisis will undoubtedly identify weak firms, which means those that do work with the government will have the chance to grow and expand their market share.

Two other areas are highlighted: picking the next industrial area of Taipei,China, and developing the other sustainable green industry—tourism. The former can be for larger firms and upwardly mobile SMEs. Tourism from the PRC is a unique comparative advantage that the Taipei,China economy has, which has no competition. It would be foolish not to exploit this abundant source of income. This will have considerable multiplier effects on the service industry in Taipei,China, which is also dominated by SMEs.

Taipei,China and the PRC share the same history, culture, and language; whatever the political differences that may exist in the interim, the strengthening economic ties necessitates the replacement of competition and suppression with cooperation and collaboration to make the two economies reach complementarity that will benefit people on both sides of the strait.

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