

# Taiwan Report

Economic Research Department

August 2009



The Taiwanese economy was hit particularly hard by the worst global recession in the post War history. However, the worst appears to have passed. The economy is likely to recover faster on the prospects of better cross-strait relations and closer economic integration with Mainland China.

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# Executive Summary

## Executive Summary

Taiwan's economic structure, as a high-income, developed and small open economy, is dominated by the service sector. At the same time, it is heavily dependent on external demand. Among exports, electronic products occupy the largest segment. Taiwan's economic development was led by an export-oriented boom in the 1960s and 1970s. From mid 1980s, the currency appreciation compelled Taiwan to shift from cheap manufacturing to capital and technology intensive electrical industries. Taiwan thus became one of the world's largest producers of electronic products. Due to rising costs, Taiwan's manufacturing industries began to relocate production bases overseas. As the cross-Strait economic relation was eased in the 1990s, China mainland became an ideal location for Taiwan's investment as they shared the same language and culture. Currently 3 million Taiwanese work on the Mainland. The emigration wave, slower population growth and longer life expectancy have had a huge toll on Taiwan's demographics, which will cast a negative impact on the economic growth in the long term. However, the now more likely immigration flow from Mainland China could potentially offset this negative development.

Taiwan is poorly endowed with energy resources as it barely holds any fossil energy reserves and is almost totally dependent on imports in the form of crude oil, petroleum products, and coal and liquefied natural gas. Despite the lack of domestic fossil resources, almost 90% of energy needs are covered with fossil fuels. The industry sector is the biggest energy user, followed by transportation. The big reliance on fossil energies, together with its high rate of per capita energy consumption, explains why Taiwan's per capita carbon emissions are amongst the highest in the world, which is a clear challenge for the future.

Being one of the most open economies in the world, Taiwan economy was hit particularly hard by the collapse of exports amid the worst global recession in the post World War II history. However, the worst appear to have passed and the Taiwanese economy is now on the mend led by robust growth in Mainland China – specially given the recent boost in their bilateral relations - and the stabilizing global economy.

Despite the government's effort to stimulate the economy, the unemployment rate remains at a historical high. This poses a serious challenge for the incumbent government to gather consensus to push the free trade agreement with the Mainland, namely Economic Cooperation Framework Agreement (ECFA).

Taiwan's banking sector has generally fared well amid the crisis relative to other developed economies, reflected by high capital adequacy ratio, a slight rise in non performing loans and facing no major funding constraints or liquidity problems. But Taiwan's banking sector is relatively over-banked, and further consolidation is expected in the future. Against this background, the Mainland and Taiwan are taking further steps toward deeper financial ties and a further liberalization of their financial services. This should soon be reflected in an MOU in financial services between the two areas. In this way, Taiwanese banks will be able to follow their clients to Mainland by offering a variety of financial services to them. This will help enhance the returns of capital of Taiwanese banks, potentially making the financial services sector more competitive internationally. It is also very likely that Chinese banks will open branches in Taiwan soon as a first for their internationalization plans.

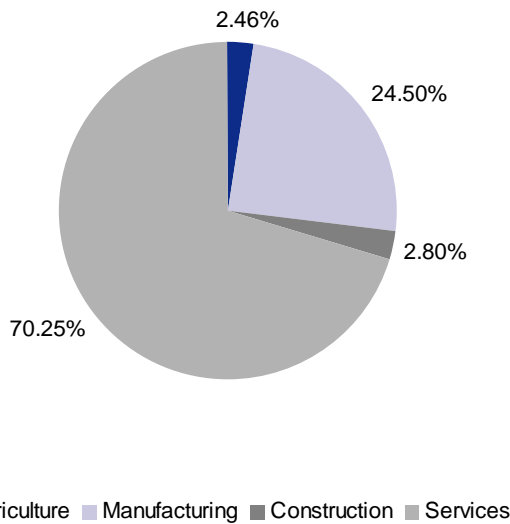


# Economy

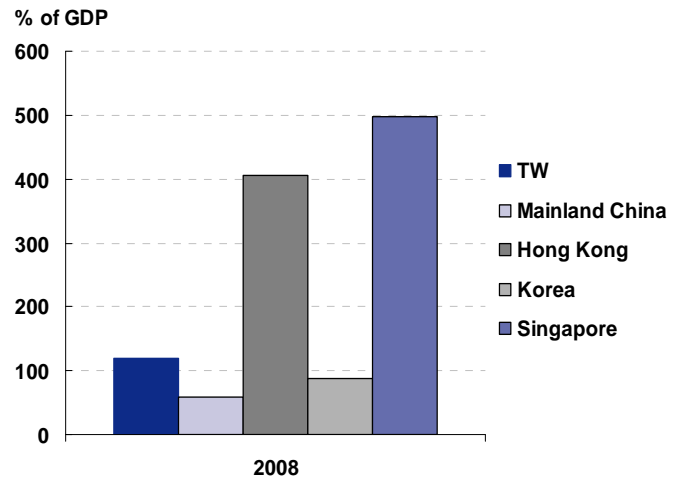
## Economic Structure

Taiwan is the 26th largest economy in the world and 9th largest in Asia. Relative to the Mainland China economy, it is about 1/10 and its economic size is comparable to China's Guangdong province and could be ranked as the 4th among the provincial economies of the greater China region. At per capita income of USD17,040, Taiwan is 15th richest economy in Asia and now ranked the third in the greater China region, following Hong Kong and Macau.

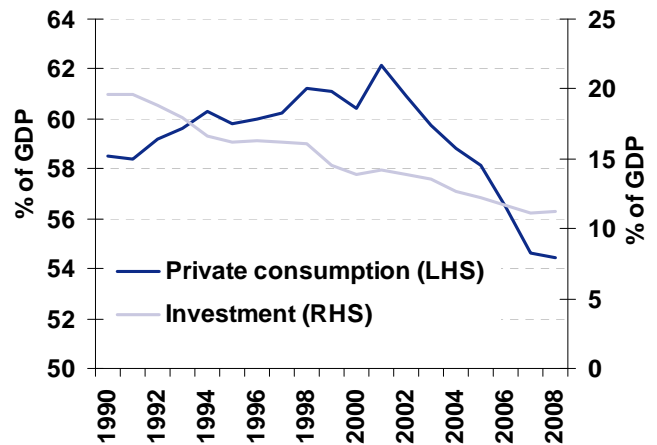
Like any other high-income and developed economy, its economic structure is dominated by service sector, while its manufacturing and primary sectors occupy a share to GDP of 24.5% and 2.5%, respectively.



Trade share to GDP



Share of Private Consumption and Investment in GDP

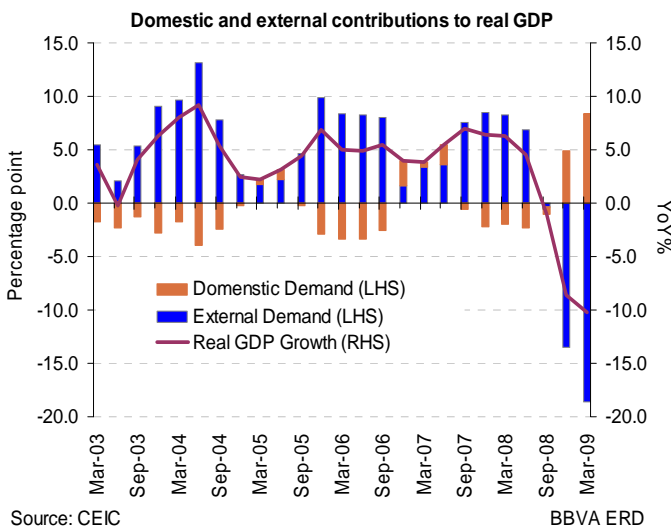
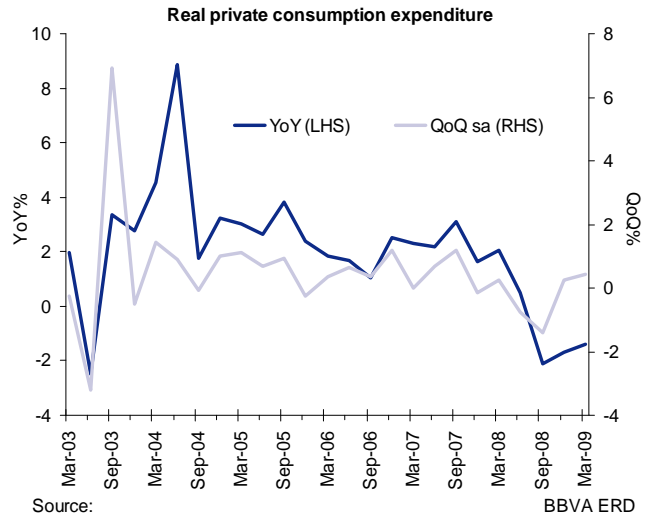


As a small open economy, the trade share of the GDP is quite high. It currently stands at over 110%, much higher than Mainland China and Korea but much lower than Hong Kong and Singapore.

Taiwan's investment and consumption shares to GDP appear to have been falling fast in recent years. Consumption share dropped from 61% in 2003 to around 55% in 2008 while investment share also declined from around 20% in at the beginning of 1990 to a little over 10% of GDP in 2008.

Over the last five years, the economy averaged a growth rate of 4.17%, about 1.13 percentage points lower than its 20 year average. Given the importance of trade in the economy, the Taiwanese economy had been primarily led by external demand until the eruption of the global financial crisis after mid 2008. The contribution of external demand accounts for an averaged 56.17% from 2003 to 2008, while that of domestic demand was 43.83 on average over the same period.

However, this trend was reversed after last quarter of 2008. With the collapse of international trade, the contribution from external demand fell by as much as 18% while that of domestic demand increased up to 8% thanks to government stimulus package such as the consumption coupon and other investment projects.

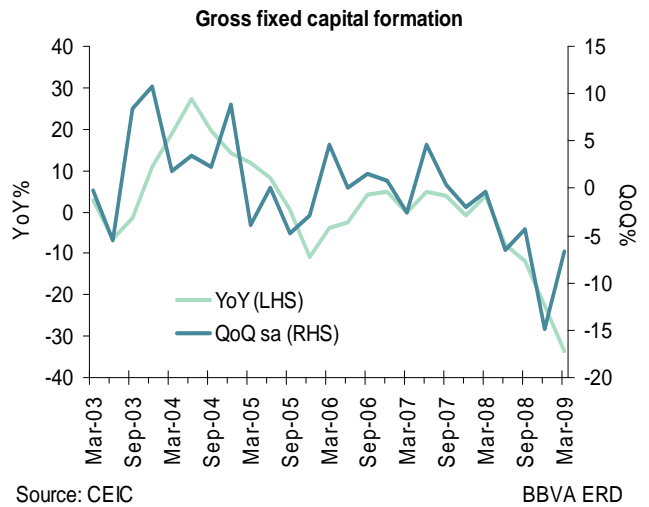


**Consumption**

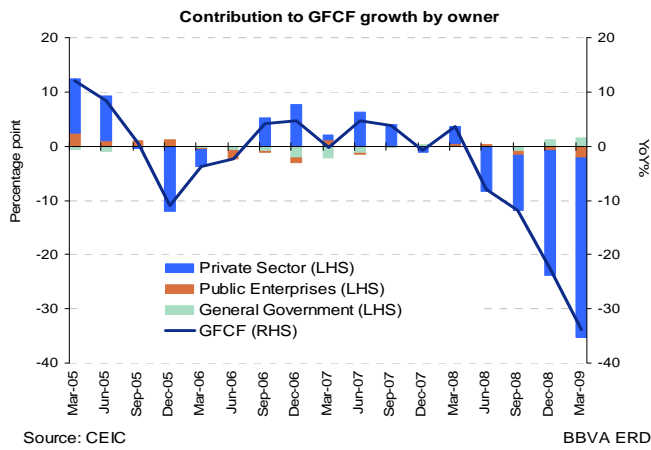
Growth in private consumption remains anemic since September 2003 at an averaged 0.66% quarter on quarter, seasonally adjusted basis (qoqsa). The anemic consumption growth may be partly explained by limited real wage growth and an exodus of Taiwanese entrepreneurs working on the Mainland, currently amounting to 3 million or 30% of Taiwan's working population. While on a year on year basis, growth in private consumption fell by close to 2 percentage points, it rebounded to positive territory qoqsa, benefiting from government consumption coupon program, estimated at around 2.5% of GDP.

**Investment**

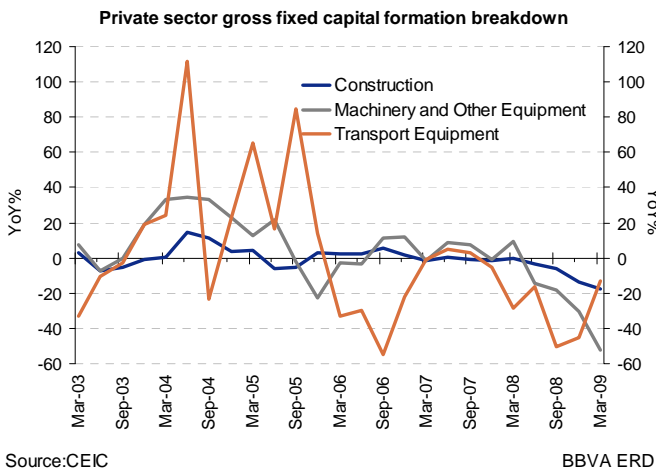
Similarly, there has been limited investment growth in Taiwan over the same period. The averaged investment growth was -0.05% qoqsa. Since the 2007, growth in investment started to fall on yoy basis, while it experience some rebound since 2009 Q4.



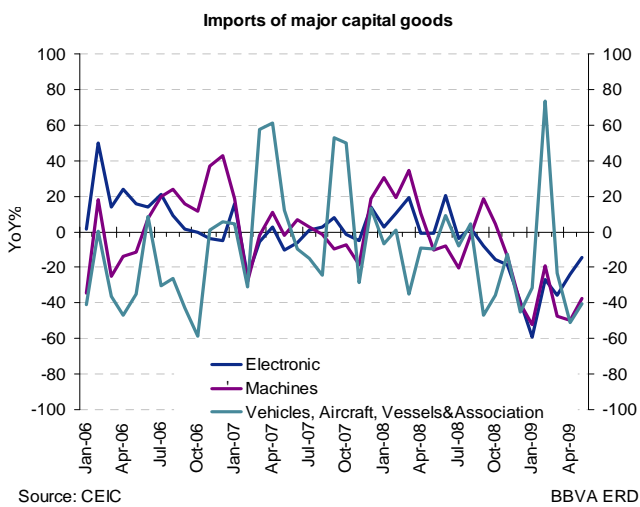
Both public and private enterprises had started to cut their investment plans way before the eruption of the global crisis in Q3 2008. The contribution to capital formation became negative since 2008, largely pulled down by enterprise investment, while the government investment has become quite positive since December 2008. Nevertheless, given the rather pessimistic sentiment among private firms, the public investment at the current scale was not able to reverse the sharply downward trend.



In particular, sectors such as construction, machinery and other equipment, and transportation experienced a rather deep cut in their investment projects.

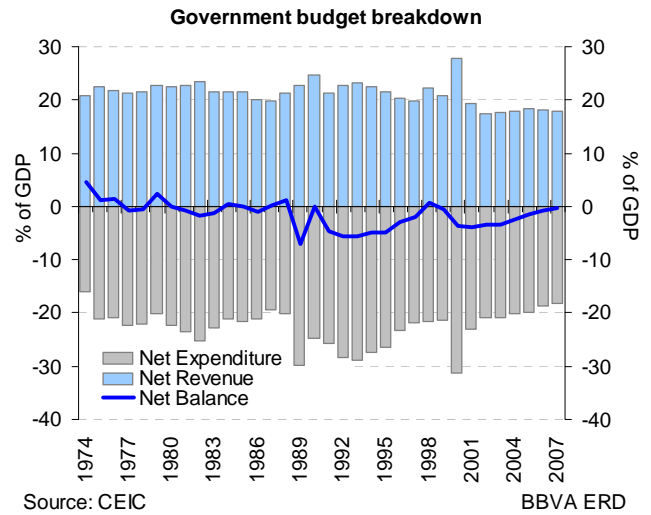


Given Taiwan's heavily dependency on capital goods, the falls in investment are also reflected by the import data on capital goods.



## Public Finances

The government had run a roughly balanced budget until 1989 because of the collapse of an asset bubble. Since then, the government have been running quite sizeable budget deficit up to -7.09%, because of the need for the government to engage in financial rescue of failed financial institutions. The run away budget deficit was finally balanced in 1998. However, the ensuing Asian financial crisis and the burst of IT bubbles have led to renewed deficit financing of the government until 2007. The expected budget deficit for 2009 will be around 3.5%, according to the latest forecasts.

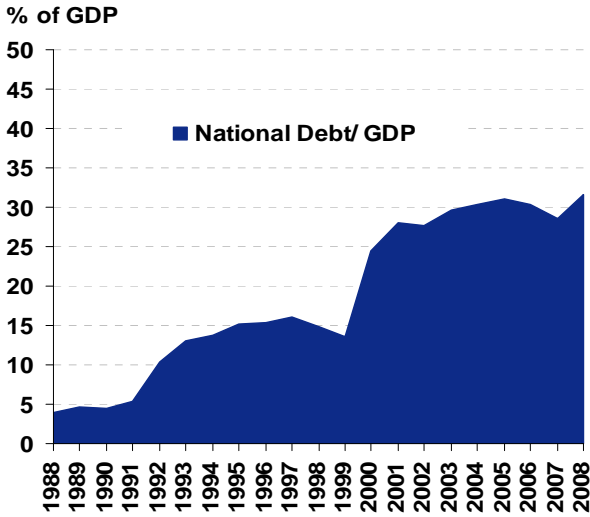


## Expected fiscal deficit in 2009

	Expected fiscal deficit (TWDbn)	Central Government (TWDbn)	Local Government (TWDbn)	% of GDP
Forecast at the beginning of 2009	950	750	200	25%
Forecast in August 2009	1100	-	-	35%

Taiwan's national debt level was quite low by the OECD standards, standing at slightly over 31% in 2008. However, this number is expected to rise to 35.8% in 2010, reflecting a significant increase in the government's deficit spending to finance the stimulus package to combat the severe recession. Despite the growing aging problem, it is unlikely that Taiwan will run into any debt unsustainability problem in the medium run.

**National Debt as a share of GDP**



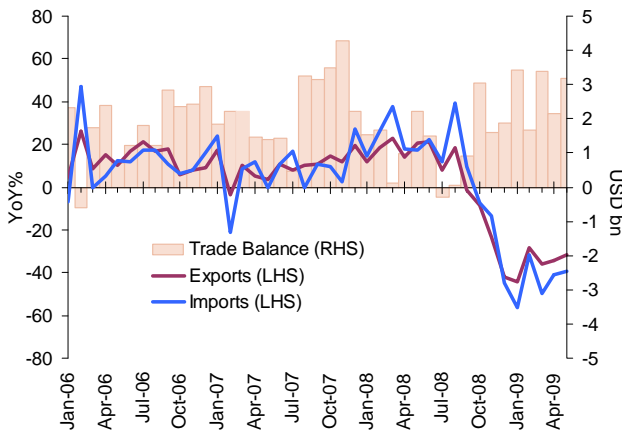
Source: CEIC

BBVA ERD

**External Trade**

As discussed in previous section, net exports have been the main contributors to economic growth in recent years. While growth in private consumption and investment remains stagnant, its trade sector has become the most dynamic part of the economy. Given Taiwan is one of the largest and perhaps the most sophisticated center for global electronics production and research and development, its exports often move closely with imports, largely because of the components needed for electronics production. Before the global financial crisis, growth in exports and imports was averaged at 12.79%. However, both exports and imports collapsed after the eruption of the global financial crisis, while the latest data show that the worst may have passed.

**External trade**



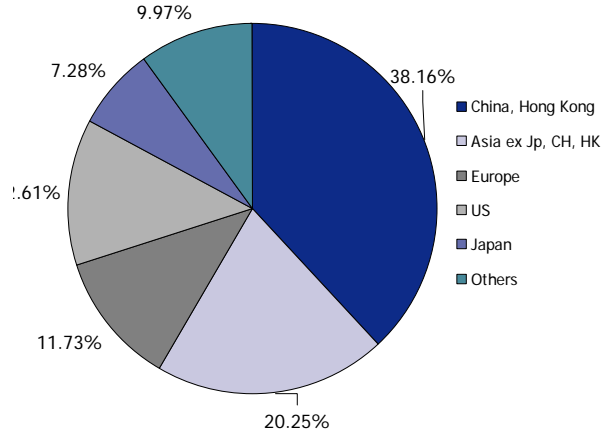
Source: CEIC

BBVA ERD

With respect to Taiwan's export destinations, Mainland China and Hong Kong are the largest market for Taiwan's exports, followed by the rest of Asia and Japan, with the US and Europe in distant third and fourth place.

In the aftermath of the severe global financial crisis, Taiwan's exports to both China and emerging Asia dropped the most, but have since experienced some strong rebound. Although the pace of export falls to G-3 markets was smaller than those to China and emerging Asia, it has not shown any visible signs of recovery in recent months.

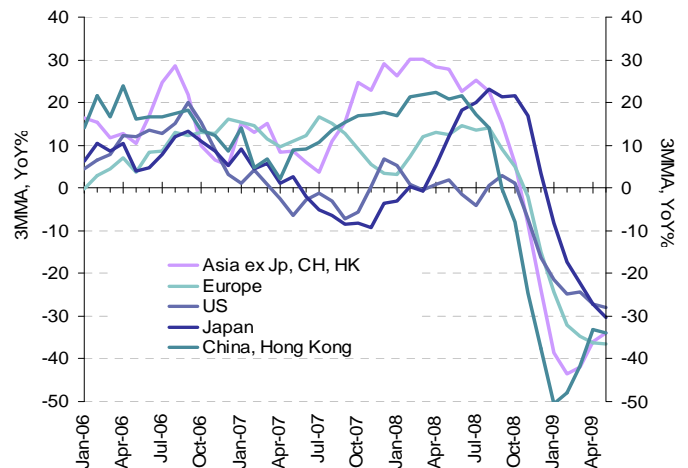
**Export Share to Major Markets**  
(% of total exports May 09, 12MMA)



Source: CEIC

BBVA ERD

**Exports growth by major markets**

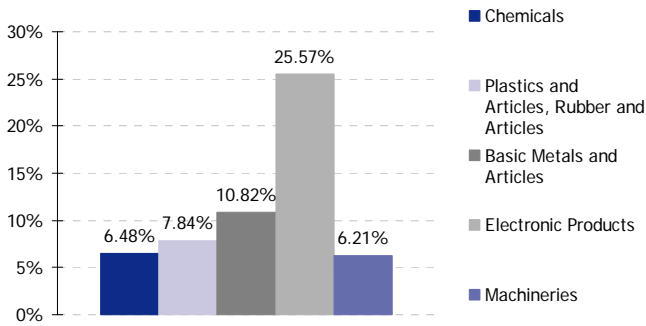


Source: CEIC

BBVA ERD

In terms of products Taiwan exports, electronic products occupy the largest segment with a share of close to 26 percent. This was followed by basic metals and articles and plastics.

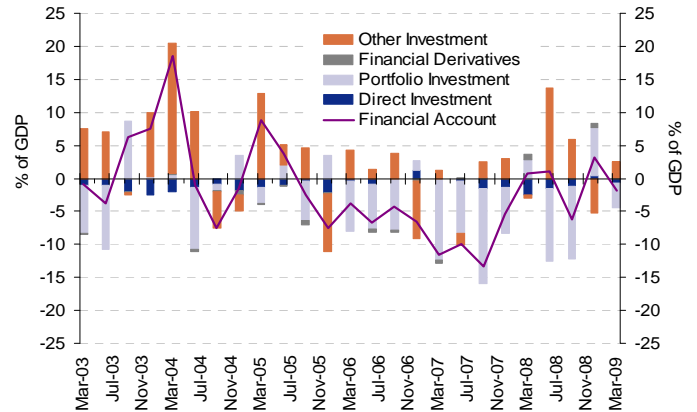
Share of Exports by Major products  
(% of Exports May 09, 12MMA)



Source: CEIC

BBVA ERD

Capital account by components



Source: CEIC

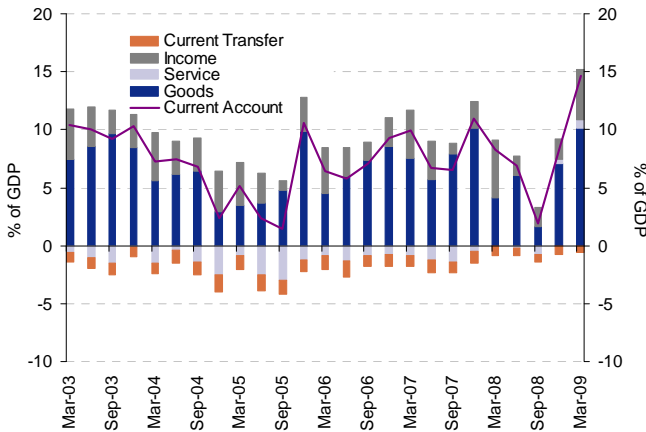
BBVA ERD

### Balance of Payments

Taiwan has been running a substantial current account surplus since 2001. In the last five years, its current account surplus was averaged at 6.59%. Out of the current account components, goods usually occupies the largest surplus, followed by income that is averaged at 2.74% over the same period, mostly attributable to the investment income from Mainland China.

Taiwan has been running a balance of payment surplus over the last five years. As a result, the central bank has been accumulating foreign exchange reserve at about US\$40 billion. Taiwan's foreign exchange reserve now stands at US\$310 billion, the fourth largest in the world.

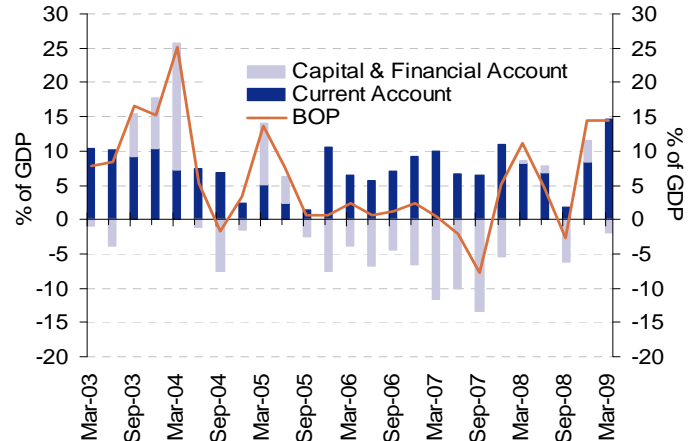
Current account by components



Source: CEIC

BBVA ERD

Balance of payment

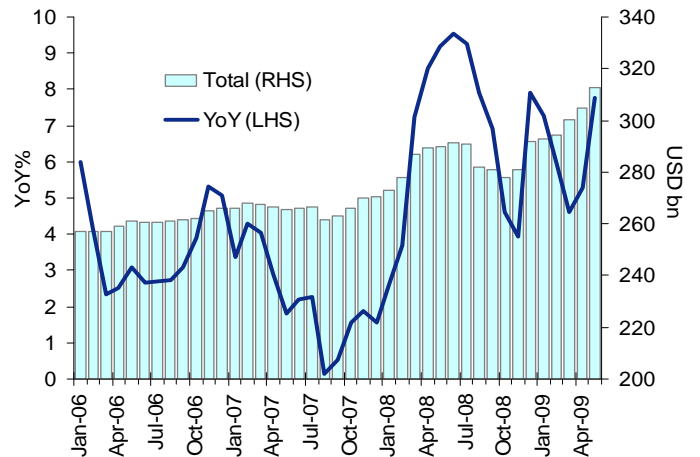


Source: CEIC

BBVA ERD

Taiwan runs a more or less balanced capital and financial account. Over the last five years, portfolio investment has been the major form of capital flows and it is quite sensitive to global market conditions. In the midst of the current global financial crisis, the outflow of portfolio investment was over 7% of GDP. Since March 2009, portfolio investment flows have become positive again, consistent with rising market sentiment in emerging market economies. The other most volatile part of capital flows is other investment which includes trade credits and others that are sensitive to global financial conditions.

Foreign exchange reserves



Source: CEIC

BBVA ERD



**Monetary Policy**

According to Article 2 of Taiwan's Central Bank of China Act, the primary monetary policy objectives are "to promote financial stability, to guide sound banking operations, to maintain the stability of the internal and external value of the currency, and to foster economic development". It appears that the central bank has multiple objectives other than price stability and economic growth normally assumed by G-3 central banks.

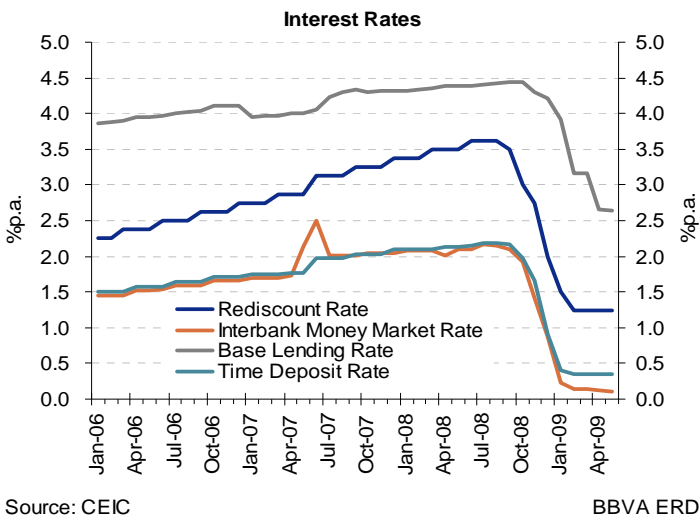
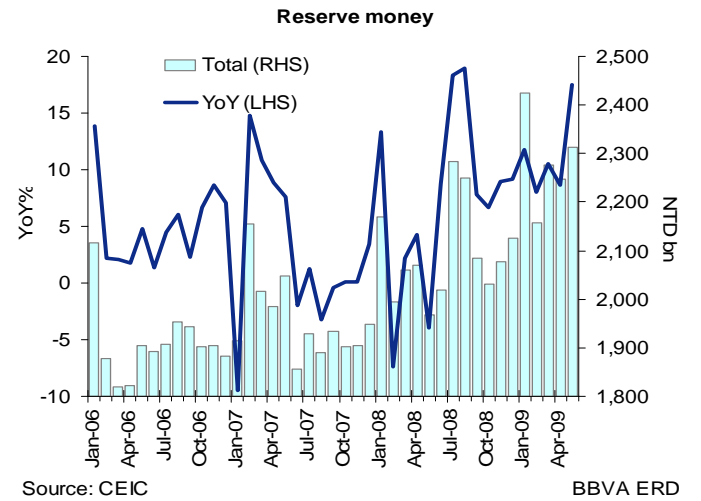
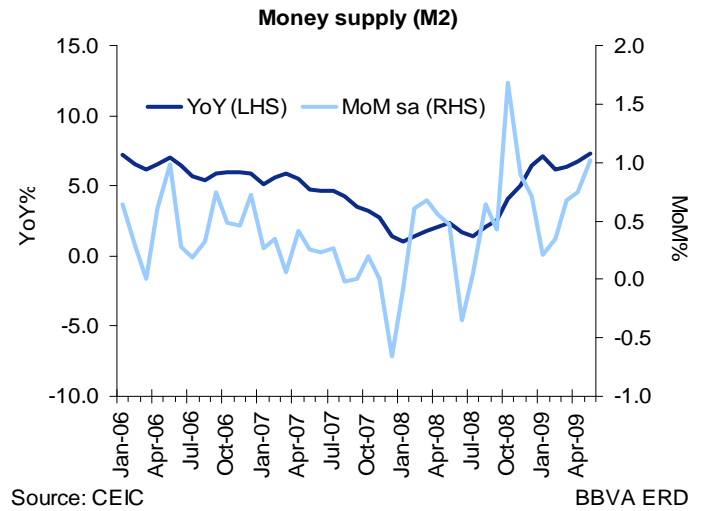
The monetary policy is conducted using the following set of instruments: 1) open-market operations with eligible securities, 2) discount window policy for commercial banks, 3) reserve requirements, 4) re-deposits of financial institutions, and 5) moral suasion and selective credit controls.

In addition, the central bank also pays a close attention to capital flows to prevent speculative activities.

The Board of Directors (BD) is in charge of formulating monetary policy. The Board is made of between eleven and 15 members who are nominated by the Executive Yuan and appointed by the president. The Executive Board within the BD, consisted of seven executive directors, usually execute monetary decision. The governor of the central bank, the minister of finance, and the minister of economic affairs are ex officio directors and executive directors. The agricultural, industrial and commercial sectors each have at least one representative on the Executive Board.

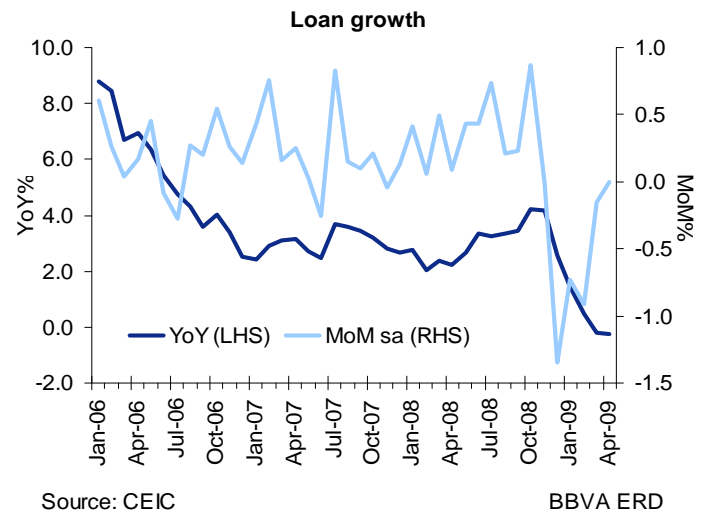
Since September 2008, CBC has cut interest rates by seven times, leaving the rediscount rate at 1.25%. Since the last rate cut in February, the CBC has refrained from further interest rate cuts citing improved asset market conditions, stabilizations in global economy, and a pick up in activities in the export sector.

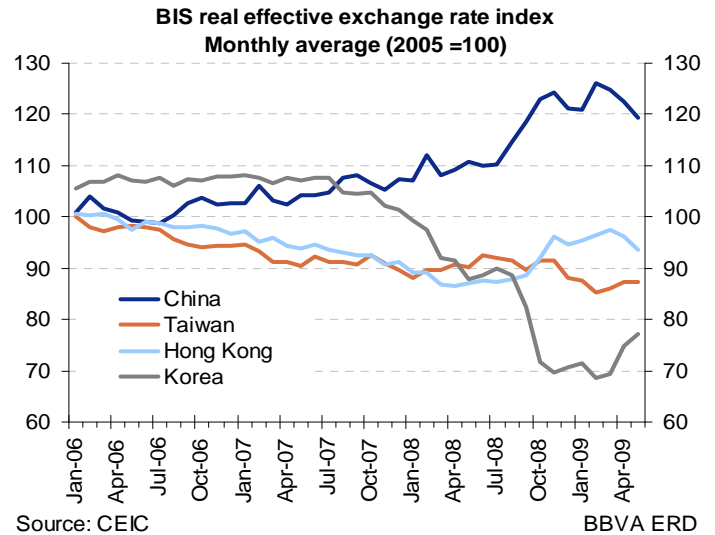
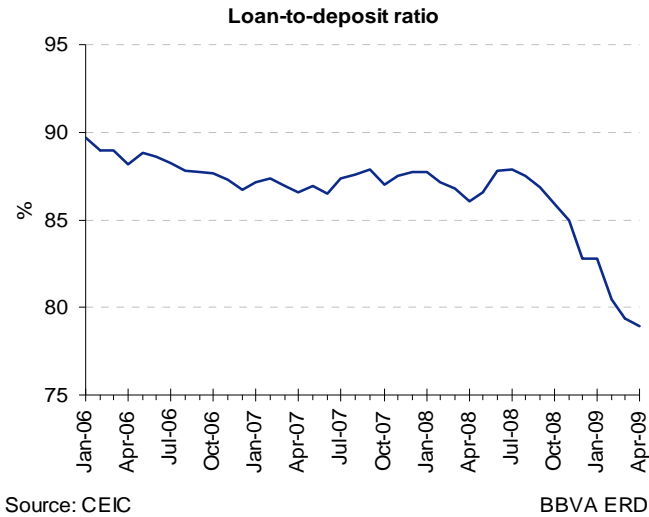
loan growth has reversed. It is expected to improve as signs of economic free fall show signs of stabilization.



While growth in both reserve money (M0) and M2 picked up strongly, loan growth continued to fall yoy. On a mom seasonally adjusted basis, the decline in

Meanwhile, with the slowdown in loan growth, the banking system liquidity has increased sharply as the loan to deposit ratio falls from previous over 85% to below 80%.

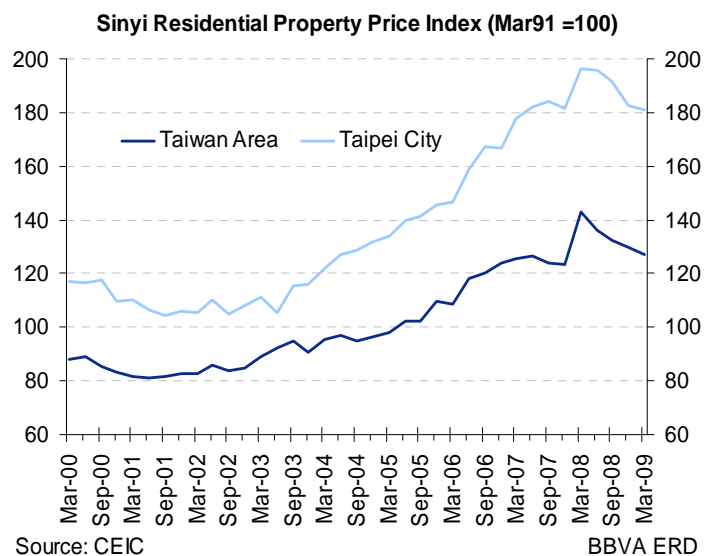
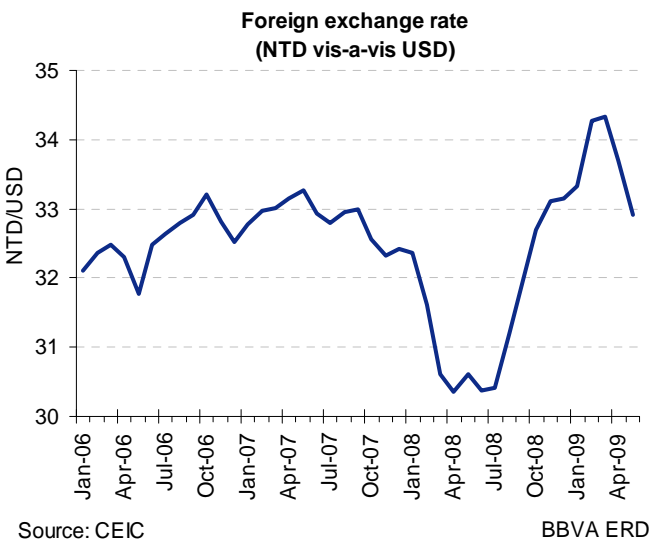
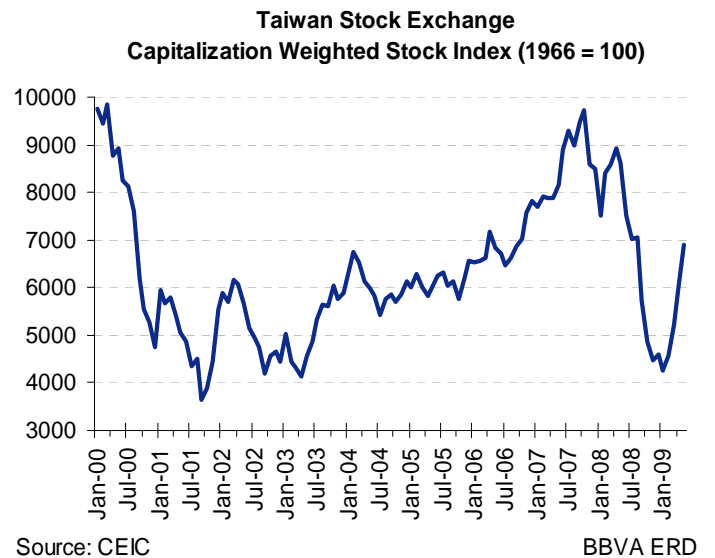




**Exchange Rate**

After a period of rapid depreciation of the new Taiwan dollar (NTD) against the US dollar after mid-2008, the currency had appreciated by over 10% until March 2009 because of the gloomy outlook of the economy that rely on exports for growth. However, the NTD has started to appreciate again after March on large capital inflows because of better than expected growth in China and improving export conditions. With nominal depreciation and falling inflation, Taiwan's competitiveness has also improved. The real effective exchange rate depreciated by less than 5%. The real depreciation is, however, much less than that experienced in Korea, Taiwan's main competitors in sectors such as electronic products.

**Asset Prices**

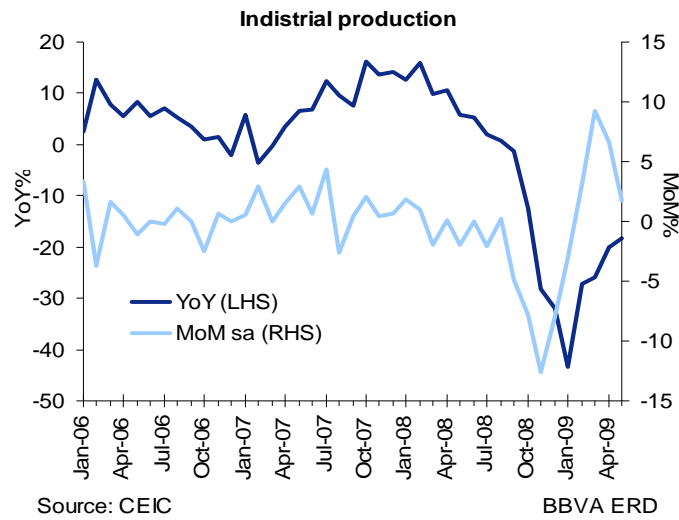


The stock market rebounded sharply since March 2009 becoming of one of the best performing markets

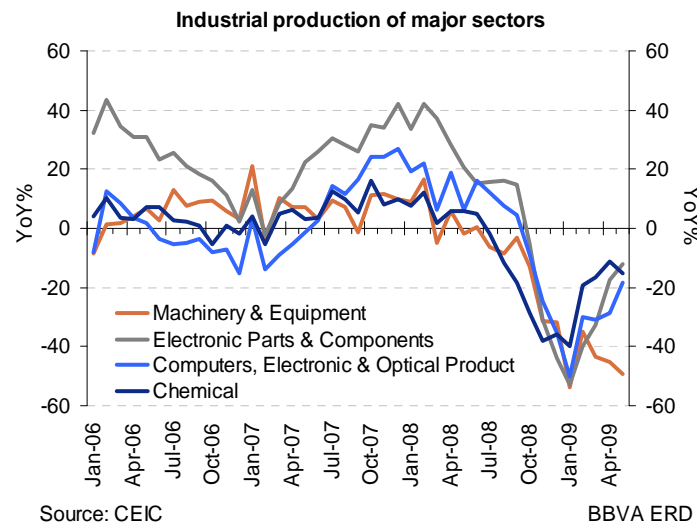
in the world, benefiting from the improvement in export performance in electronic sector, warmed cross-strait relationship that will promote investment from Mainland China and the return of Taiwanese capital currently in Mainland, and the prospects of a recovery. The property price, although still falling, has been declining at a slower pace with rising transaction volume.

**Latest Economic Developments**

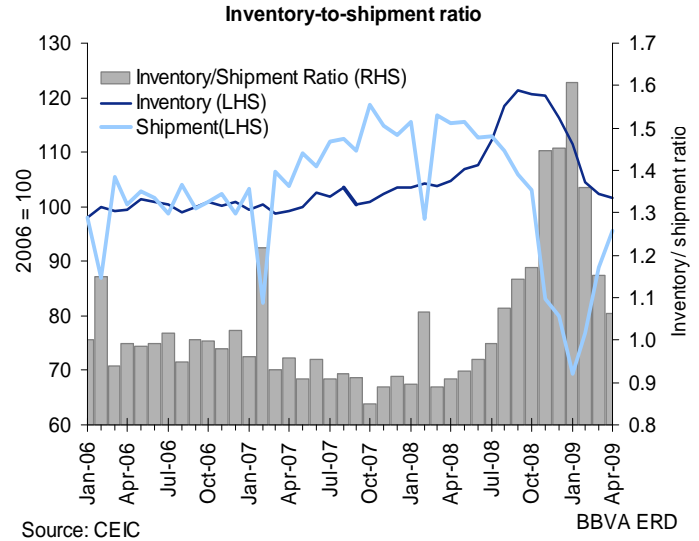
The latest monthly data indicate that the free fall in industrial production has bottomed out and recovery remains weak on a year on year basis. On a mom seasonally adjusted basis, a stronger sequential recovery appears to be under way.



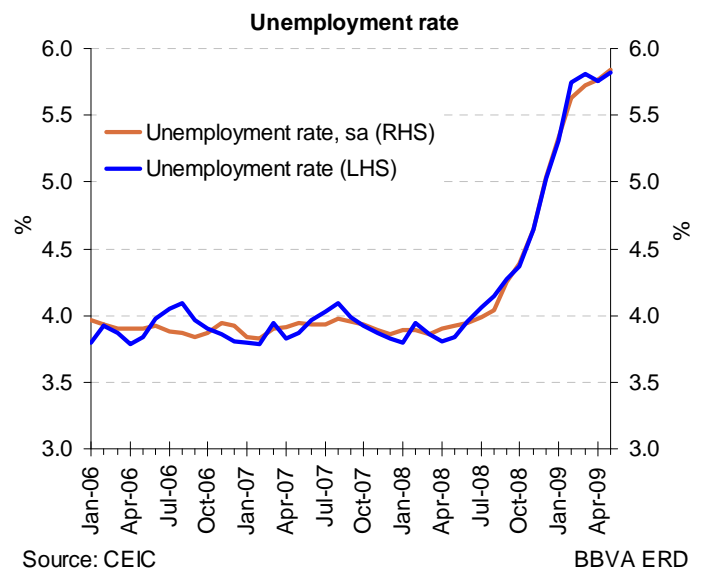
The sectoral level industrial production data also show a similar picture. Except for machinery and equipment sector, other key sectors of the Taiwan economy such as electronics, computers, and chemical have all reversed free falls in January 2009. Though still falling yoy, the pace of the fall in industrial production has slowed substantially.

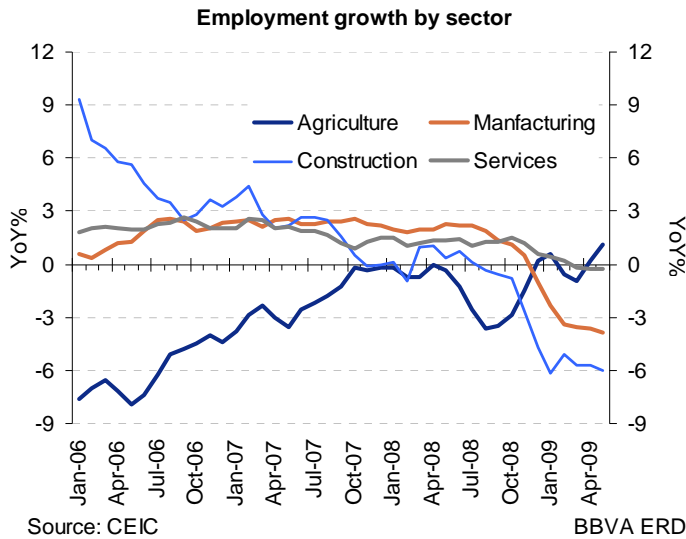


Indeed, the sharp fall in industrial production is closely linked with the rapid build up of inventories after July 2008, which peaked in October and November. As inventory has started to be depleted after December 2008, there is a need for production to resume again. However, this recovery process remains fragile because the G-3 economy remains weak despite strong growth data registered in Mainland China.

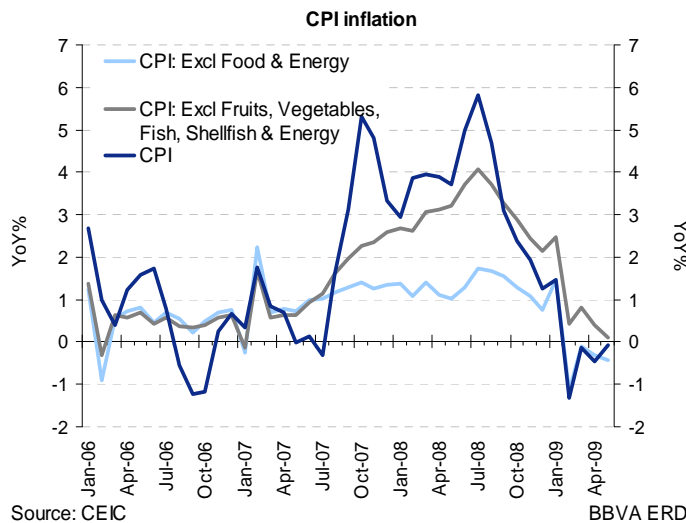


The severe economic recession has pushed the unemployment rate to a historical high of close to 6% from the level of around 4% before the eruption of the global crisis. Employment in the construction sector was hit the hardest, followed by the manufacturing sector, while the services and agricultural sectors fared better. It appears the agricultural sector experiences a small rebound in employment growth, possibly due to reverse migration from urban industrial sector to agricultural sector.

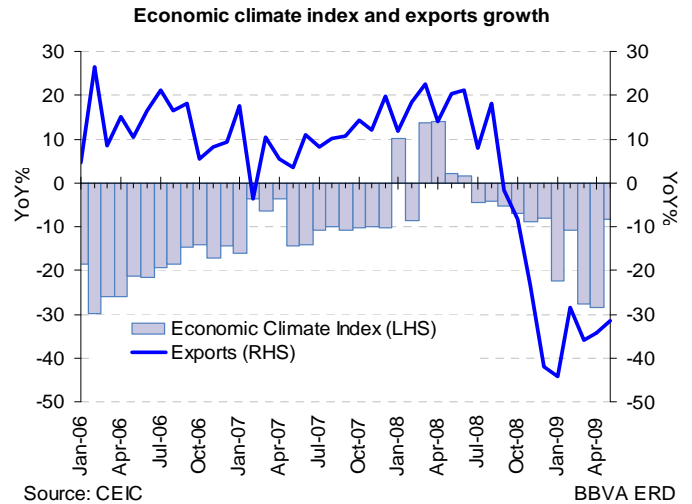




Because of the significant slack in the economy, inflationary pressures diminished fast. CPI inflation fell sharply from the peak level of close to 6% in July 2008 to -1% in January 2009. Deflation has since set in. Meanwhile, wholesale prices fell even more sharply. Given there is little wage pressure in the economy, we expect that inflation pressures will continue to remain subdued going forwards.



**Near-Term Outlook and Risks**



It appears the worst part of the recession has passed and the economy is on the mend. Economic climate index, a leading indicator, has rebounded sharply. The outlook for the economy has been revised sharply from the government forecast of -4.25% conducted in May to the last -1.1% by private research institutions.

Going forward, there are a number of favorable factors that may help speed up the economic recovery process in Taiwan. First, the possible signing of an MOU in financial services and Economic Cooperation Framework Agreement (ECFA) (see Boxes 1 and 2) will put the cross-strait economic relationship in a legally binding and a stable framework, which in turn will greatly facilitate tourism, trade, investment, and other type of capital flows. It is estimated that the ECFA will raise Taiwan's GDP growth by a range of 1.65-1.72%, increase employment by 263000 to 273000, and increase current account surplus by US\$1.7 billion, according to the a latest comprehensive study by the China Economic Research Institute.

Second, the service sector will continue to benefit from the increased tourism flows from Mainland China. The Hong Kong experience after 2003 in sectors such as hotel, retails, transportation, and theme parks suggests that the effect could be much larger than currently expected. Our estimates based on the Hong Kong experiences suggest that the impact on the economy is likely to be around 0.12% per year.

Third, the expected MOU will also bring more opportunities to the currently overbanked financial sector in Taiwan. Taiwanese banks will be able to follow their clients to Mainland by offering a variety of financial services to them. This will help enhance the returns of capital of Taiwanese banks, potentially making the financial services sector more competitive internationally. In addition, the reduced restriction of Mainland investment in Taiwan will also help reverse the declining trend of investment. If such investment is combined with sophisticated human capital in Taiwan, it will also make the island an international R&D center

in the electronic, chemical and pharmaceutical sectors, directly competing with the prominence of current global leaders.

Despite the government's effort to stimulate the economy, the unemployment rate remains at a historical high. This poses a serious challenge for incumbent government to gather consensus to push forward the free trade agreement with the Mainland. Indeed, ECFA, like any other FTA, will produce both winners and losers. Therefore, some trade adjustment policy initiatives are needed to make the sectors facing greater competition from Mainland competitors better prepared and create incentives for them to move up technology ladder and efficiency.

## Box 1: ECFA and Its Implications for Cross-Straight Economic Integration

As the East Asian region moves to a free trade area (FTA) by signing various free trade agreement among ASEAN + 3, Taiwan has run the risk of being marginalized due to its political isolation. The economic loss, in terms of Taiwan's GDP, of being politically isolated has been estimated in the range of 0.004% to 2.23% but these estimates could well be too low (Table 1).

Because none of the countries in the region recognizes Taiwan as a sovereign state and FTA is usually conducted between two sovereign states (or regions of sovereign states), it is therefore impossible for Taiwan to engage in any version of free-trade negotiation with any country, including ASEAN, Korea, and Japan. In order to avoid further marginalization and to anchor the cross-strait economic cooperation and integration in an institutional framework, the Ma Ying-Jeou Administration in early 2009 proposed to negotiate a free-trade agreement with Mainland China (Table 2). As a free trade agreement is usually signed between sovereign states and given the dispute of sovereignty issue between Mainland China and Taiwan, a different name had to be used. The title of the agreement has gone through a couple of revisions. It was first floated as a Comprehensive Economic Cooperation Agreement (CECA). Because of strong objections from Taiwanese political opposition due to CECA's alleged closeness with CEPA (Closer Economic Partnership Arrangement) -- signed between the mainland and its two special administrative regions, Hong Kong and Macau - the Ma Administration decided to rename it as Economic Cooperation Framework Agreement (ECFA). It also vows to apply the principles of the World Trade Organization (WTO) to negotiate with the Mainland government.

It is hoped that the negotiation for a FTA such as an ECFA will allow freer flows of merchandise, services, and capital between Taiwan and the mainland. Although the specific content is still left to be decided through bilateral cross-strait negotiations, the major areas of negotiation are to include: trade in goods (tariff and non-tariff measures), trade in services, investment protection, intellectual property rights, safeguard measures, economic cooperation, and trade dispute settlement mechanism. While there is no agreed prioritization of issues, those that are urgent and that can be reached through consensus between both sides have been agreed to be handled first. For example, they could include tariff reductions in export industries such as petrochemical, machinery, and automotive parts and components as well as those sectors that are sensitive to the impact of already signed FTA between ASEAN and Mainland China. Once these areas of agreement are reached, other issues will be handled gradually after consensus is reached.

Opponents to ECFA, mainly from those from the opposition -the Democratic Progressive Party (DPP) -, fear that the proposed agreement will lead to large job losses in sectors due to increased competition from the Mainland. DPP claims that normalizing economic relations with China will also bring Taiwan anew national security risk. Moreover, DPP argues that the proposed ECFA with the mainland will lead to the "Hongkongization" of Taiwan, increasing its economic dependence on the Mainland and ultimately downgrading the status of Taiwan. In response, the Ma administration reaffirmed that the negotiation between the two sides will adhere to the principles of equality, dignity, and fairness. In addition, the current government is adamant that Taiwan will not open its markets for Mainland China's agricultural goods and the government will not allow any labor movements between Taiwan and Mainland China.

But how large will be the economic impact on Taiwan once the ECFA is signed? The existing studies based on the computable general equilibrium (CGE) models suggest that the impact could be sizable. If Taiwan were to sign an FTA with Mainland alone, the impact on the Taiwanese economy will be about 0.16% increase in GDP growth permanently. However, if Hong Kong was included in the agreement, the economic impact on Taiwan could be as large as 2% additional growth. Furthermore, if this the FTA were to be signed with a large number of states by including ASEAN, China, Japan, and Korea, the economic impact on Taiwan could be as large as up to 3.42% (Table 3).

Indeed, it appears that an FTA with Mainland China will be generally an economic win-win situation, at least in aggregate terms. For Taiwan, it will help promote and normalize economic relations with the Mainland and reduce risks of cross-strait hostility. Furthermore, the agreement is likely to bolster the internationalization of Taiwan's economic relation with other economies in the region and help Taiwan overcome the current economic crisis by seeking new sources of growth. As for China, although it has to pay for the costs of incurring high trade deficits with Taiwan, it hopes to bring Taiwan closer politically and culturally, thus set stages for political discussions on the cross-strait relations

However, some sectors are bound to suffer from such FTA. In particular, given China and ASEAN economies will formally launch their FTA in January 2010, Taiwanese business will start feel the brunt of trade diversion of the FTA agreement between ASEAN and China as Taiwanese products will be forced out as a result of high tariff barriers. This will potentially affect employment opportunities and Taiwan's economic recovery from the global recession.

**Table 1: FTA in Asia and its Impact on Taiwan**

Unit: %

Scope of FTA	Scenario	Impact on GDP	Sources of Studies	
<b>ASEAN+ China</b>	Trade liberalization (static)	-0.009	Gu, et al (2004)	
	Trade liberalization (Dynamic)	-0.137		
	Trade facilitation (static)	-0.004		
	Trade facilitation (dynamic)	-0.046		
	Liberalization+facilitation (static)	-0.013		
	Liberalization+facilitation (dynamic)	-0.196		
	FTA		-0.040	Huan, et al (2004)
			-0.04	Chan, et al (2004)
			-0.19	Chen et al (2004)
			-0.08	Ma et al (2002)
		-0.0260	Chen et al (2005)	
	Removal of tariffs + service trade liberalization + trade facilitation	-0.49	Kawai et al (2008)	
<b>ASEAN + Japan</b>	FTA	-0.09	Ma et al (2002)	
	Removal of tariffs + service trade liberalization + trade facilitation	-0.21	Kawai et al (2008)	
<b>ASEAN + Korea</b>	Removal of tariffs + service trade liberalization + trade facilitation	-0.09	Kawai et al (2008)	
<b>ASEAN + (Japan, Korea, and China)</b>	Trade liberalization (static)	-0.035	Gu et al (2004)	
	Trade liberalization (dynamic)	-0.730		
	Trade facilitation (static)	-0.014		
	Trade facilitation (dynamic)	-0.217		
	Liberalization + Facilitation (static)	-0.050		
	Liberalization + Facilitation (dynamic)	-0.982		
	FTA without an FTA among Japan, China and Korea		-0.100	Huang et al (2004)
			-0.1	Chan, et al (2004)
	FTA with an FTA among Japan, China, and Korea		-0.160	Huang et al (2004)
			-0.16	Chan, et al (2004)
	FTA		-1.08	Chen, et al (2004)
			-0.0713	Chen, et al (2005)
			-0.25	M, et al (2002)
	Removal of tariffs + service trade liberalization + trade facilitation	-2.03	Kawai, et al (2008)	
<b>ASEAN+US+ China+Japan+Korea</b>	FTA	-0.50	Ma, et al (2002)	
<b>ASEAN + (Japan, Korea, China, Australia, New Zeland, India)</b>	Removal of tariffs + service trade liberalization + trade facilitation	-2.23	Kawa, et al(2008)	
<b>China, Japan, Korea</b>	FTA	-0.71	Chen, et al (2004)	
<b>China and Hong Kong</b>		-0.15		
<b>Japan and Singapore</b>		-0.02		
<b>Japan and Korea</b>		-0.08		

Source: Tung Cheng-Yuan, *East Asia Economic Integration and Taiwan's Strategy*, Taipei: National Chengchi University Press, 2009.

**Table 2: Summary of ECFA Events**

Date	Events
2007.06.04	First mentioned by Ma Ying-Jeou in his election platform and it was officially mentioned later in the Central Election Commission.
2008.12.31	Officially responded by Hu Jintao in the 30th anniversary conference for the issuance of "Letter to Our Compatriots in Taiwan"
2009.02	The English name was officially given out as ECFA
2009.04.26	Proposed at the 3rd round of cross-strait talk
2009.05.11	Ma Ying-Jeou claimed that it's possible to be discussed in the 4th round talk.
2009.07.13	Lai Shin-Yuan, Head of Mainland Affairs Commission, announced that ECFA will not be included in the 4th round talk and cannot be signed until next year, and financial stocks fell by over 6% later that day.
2009.07.14	Liu Chao-shiuan, Chief of Executive Yuan, stated that Taiwan will continue to push for an economic cooperation accord with China, adding "there's no delay" in the process.
2009.12	The 4th round of cross-strait talk will be held.
2010.01	The implementation of ASEAN+China FTA

Source: BBVA Estimate

**Table 3: Taiwan's Participation in Regional FTAs and the Impact on its Economy**

Unit: %

Scope of FTA	Scenarios	Impact on GDP	Sources of studies
Taiwan and Korea		0.289	
Taiwan and Japan		1.57	Chen, et al (2004)
Taiwan and the US		1.63	
Taiwan and the US		0.3	US International Trade Commission (2002)
Taiwan and the US		0.3	John Gilbert (2003)
Taiwan and the US	FTA	0.8	Chun Hwa Institute (2002)
Taiwan and China		0.1634	Chen, Liying et al (2005)
Taiwan, China, and Hong Kong		2.04	Chen, et al (2004)
ASEAN+Taiwan + China		0.1673	
ASEAN+Taiwan+Japan+Korea+China		0.1145	Chen, Liying et al (2005)
ASEAN+Taiwan+Japan+Korea+China		3.42	Chen, et al (2004)
ASEAN+Taiwan+Japan+Korea+China		3.28	Chan, et al (2004)
Global trade liberalization		4.54	Che, et al (2004)

Source: Tung Cheng-Yuan, *East Asia Economic Integration and Taiwan's Strategy*, Taipei: National Chengchi University Press, 2009.



## Box 2: MOU in the Financial Service Sectors

Although Memorandum of Understanding (MOU) is a statement of agreement used in an early stage of forming a contract or a treaty or an agreement between two or more parties, it is not a typical contract that is effective according to the law. MOU in Financial Service Sectors between Mainland and Taiwan is such a document to be negotiated. The outcome of the MOU is expected to ease or even eliminate the existing barriers in laws and regulations for financial exchanges, prepare for cross-strait financial cooperation, lower the requirements in accessing to the financial market of each other, and open opportunities for exchange between financial institutions from the Mainland and Taiwan alike.

Financial authorities from Mainland and Taiwan have stated all their willingness to build an MOU on cross-strait financial supervision mechanism since the first "Cross-Strait Economic and Trade Forum" in 2006. Early this July, Taiwan's government sent a group of ten lawmakers from the Legislative Yuan to visit China in order to better understanding the rationales behind of the MOU and discuss the details of a cross-strait financial agreement. The Mainland banking, insurance and securities regulators were all on the delegation's visiting list. It is hoped that the MOU is most likely to be inked latter this year.

In principle, the MOU in financial service sectors intends to achieve the following objectives:

- 1) to lower the threshold for Taiwan to invest in the mainland and promote further liberalization of the capital markets on both sides;
- 2) to enhance Taiwan's international competitiveness of the financial industry and avoid of being marginalized from the regional financial market;
- 3) to share experience between the Mainland and Taiwan and facilitate the faster financial development in both Mainland and Taiwan; and
- 4) Further strengthen the supervisory exchange and information sharing.

After the announcement of the MOU, most leading banks based in Taiwan have already stepped up preparations for upgrading their representative offices in China to full-fledged branches in order to boost the services to their customers with investment activities in China after the signing of the MOU.

But how the financial institutions from Mainland and Taiwan will be affected by the MOU in the financial service sectors? Although the details are not known to the public, the current concerns have been mostly on the forms of entry to each other's financial markets. This is because when the Mainland and Taiwan joined the WTO, Mainland China was identified as a developing member while Taiwan as a developed one. As a result, the two sides adopt different market entry standards for the financial market. If without the signing of the Economic Cooperate Framework Agreement (ECFA), this implies that the two sides cannot have equal market access in the cross-strait financial MOU under the current WTO framework. That is, when banks from Mainland China enter the Taiwanese market, they can immediately begin full financial services to customers. At the same time, banks from Taiwan can only start their RMB business after they have established branches on the Mainland for over 3 years. This will put Taiwan's banking industry under a considerable disadvantage (Table 1). In addition, the ownership restrictions and business scope restrictions under the WTO framework will also make Taiwanese brokerage firms under disadvantaged conditions (Table 2).

**Table 1: Specific issues related to the banking sector to be included in the MOU**

	<b>Present (before MoU)</b>	<b>Expected Outcome (after MoU)</b>
<b>Banking Sector</b>	<b>Taiwan</b> only allowed to operate representative offices on the mainland	allowed to set up sub-branches after having offices
	barred from lending	can start RMB business after have establish branches for over 3 years
	<b>Mainland</b> not allowed to operate in Taiwan	allowed to set up sub-branches and to conduct any business with their customers

Source: BBVA Estimate

**Table 2 Specific issues related to the securities sector to be included in the MOU**

	<b>Present (before MoU)</b>	<b>Expected Outcome (after MoU)</b>
<b>Securities Sector</b>	only allowed to operate representative offices on the mainland	allowed to set up subsidiaries on mainland
	barred from any brokerage related business	allowed to conduct full range of brokerage related business
	may only invest up to 0.4% of their net assets in mainland stocks and up to 10% in Hong Kong and Macau H-shares and red chip shares	able to buy large stakes in local financial institutions in the mainland
	the total shares held in a mainland securities company may not be less than 25%	expected to be lifted
	the investment ratio of Taiwan securities firms in mainland securities and futures is limited to 10% of the net worth of the securities firm	adjusted upward to 20%

Source: BBVA Estimate



# Banking

## 1. Structure of Banking System

### Banking Regulator

The Central Bank of China (CBC) performs the functions of both a central bank and a financial regulatory agency.

Another regulator, Financial Supervisory Commission (FSC) was set up in 2004. The partial duties of the Ministry of Finance (MOF) have been transferred to this new independent commission. The commission has four bureaus. Out of which, the Banking Bureau regulates and supervises the banking sector. The other three bureaus are in charge of the securities and futures, insurance, and bank examination respectively.

### Commercial banks

Taiwan's banking system comprises domestic banks and foreign banks. Domestic banks have four main sub-sectors: domestic commercial banks, medium business banks, credit co-operatives and credit departments of Farmers' and Fishermen's Association (FFA). Besides, there is another important non-monetary institution, i.e., Chunghwa Post Co., whose deposit market share is quite sizable. Table 1 present the size of each type of banks.

**Table 1: Taiwan's banking system, (unit: NT\$ bn)**

	Total Assets	Deposits	Loans
Domestic Commercial Banks	26,877.5	19,253.5	15,607.6
Medium Business Banks	1,112.8	833.4	781.6
Credit Cooperative Association	602.2	541.8	344.2
Credit Deptment of FFA	1,567.4	1,322.7	684.8
Foreign Banks	2,896.1	932.1	635.7
Chunghwa Post Co.	4,741.0	4,381.7	5.1

The data are as of May 2009.

Source: CEIC and BBVA.

### Domestic Banks

In this category, there are four types of domestic banks.

Domestic commercial banks are permitted to conduct all the usual banking transactions, such as lending, accepting deposits and with licensed foreign-exchange activities. There are 37 domestic commercial banks by May 2009, total assets amounted to NT\$ 26.9 trillion, representing the main force in Taiwan's banking system.

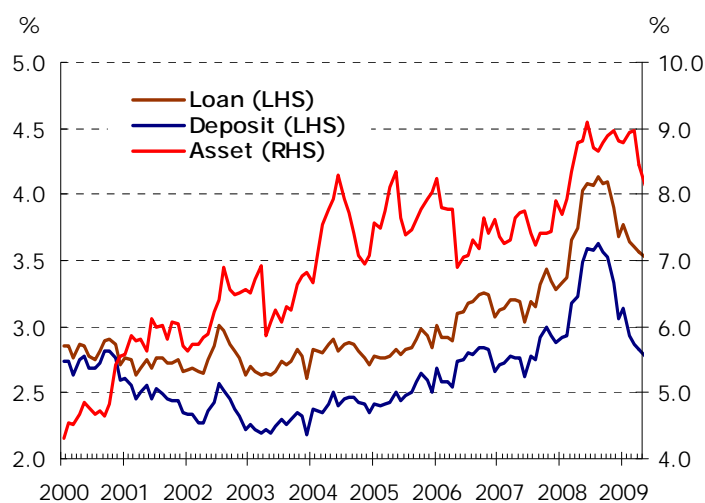
Medium-sized business banks are theoretically limited to operating in a particular geographical region. Up to now, only Taiwan Business Bank belongs to this category. As of end of May 2009, it had an outstanding loan of NT\$ 814 billion, and NT\$ 1 trillion in deposits.

Credit co-operatives and credit departments of FFA are an important source of lending for small and local enterprises. As of May 2009, there were 27 credit co-operatives and 264 smaller credit departments of farmers' and fishermen's associations. Government allowed Credit co-operatives to transform into commercial banks from 1995, but only a few have finished the transformation. Eventually, this category should be closed or merge them with larger domestic banks in further banking consolidation progress.

### Foreign Banks

Taiwan's banking system has opened up wider for foreign competition under the World Trade Organization (WTO) mandated liberalization. It has few regulations against the foreign banks operating in Taiwan given its entry status as a developed economy. The more relaxed regulations that have allowed foreign banks to enter have created abundant opportunities. However, the market share by foreign banks is still minimal, which only takes 8.1% in total assets (Chart 1).

**Chart 1: Foreign banks' market share by assets**



Source: CEIC and BBVA.

**Chunghwa Post Co.**

Another non-monetary financial institution worth mentioning is the Chunghwa Post Co., Ltd., which also provides a deposit and limited lending service. Its lending is quite smaller compared to its deposit. As of May 2009, the deposit amounted to NT\$ 4.38 trillion while the lending is only NT\$ 5.12 billion.

**2. Latest development in the banking sector**

**Regulation and performance**

During the Asian financial crisis in 1997-1998, Taiwan's banks have been hit badly as asset prices dropped, corporate bankruptcies soared, depreciation pressure on TWD mounted, and an exodus of capital took place. The government has learned the lessons from the Asian financial crisis and prompted the banks to carry out recapitalization and restructuring processes. Thanks to the oversight by the authorities, the risk management and banks' asset quality has been strengthened in recent years.

The banking operating efficiency has markedly improved and capital adequacy ratios have been strengthened through increased capital and shares issuances. Capital adequacy ratio rose to 11.5% in May 2009, compared to 10.8% in the beginning of 2008. This was well above the minimum international standard of 8.0%. (Chart 2)

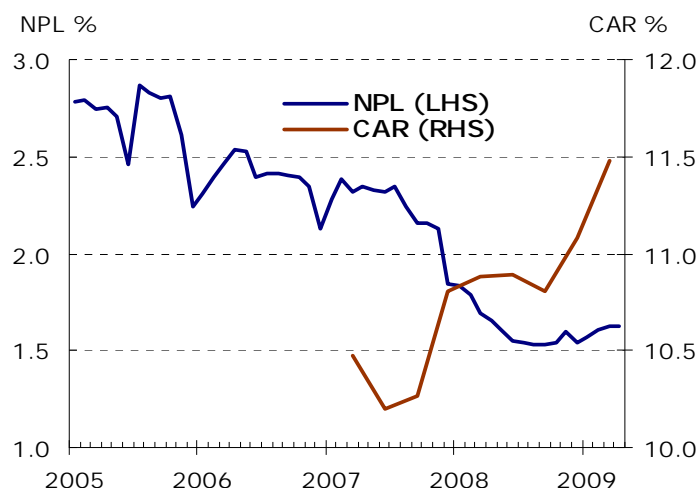
Banks' NPLs are one of the most closely watched statistics in Taiwan's financial sector. A new, broader definition of NPL, more in line with international standards, took effect in July 2005. Domestic commercial banks' average NPL level reached 1.61% in May 2009, only slightly up from a year earlier. (Chart 2)

Besides, Taiwanese banks did not face the major funding constraints or liquidity problems in 2008 experienced in several developed nations. Deposits grew faster than loans; and the loan-to-deposit ratio fell to 78.5% in May 2009 from 88% in the beginning of 2008. Taiwan's banking system is able to finance its operations through ample domestic deposits. (Chart 3)

However, the low loan to deposit ratio also reflect that Taiwan's banks are reluctant to lend during the current financial crisis, which could lead the much eased monetary policy ineffective and delay economic recovery.

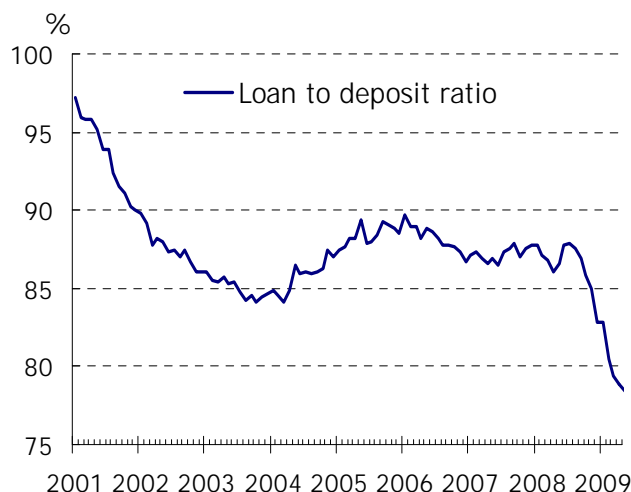
All in all, Taiwan's banks withstand the global financial crisis this time relatively well. Improved income streams and relatively healthy prudential indicators leave Taiwan's financial system much less risky than those seemingly better regulated G7 markets.

**Chart 2: Capital Adequacy Ratio and NPL Ratio**



Source: CEIC and BBVA.

**Chart 3: Loan to deposit ratio**



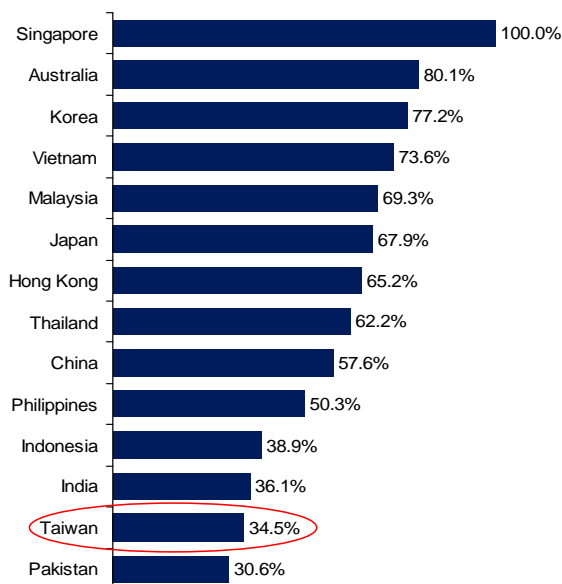
Source: CEIC and BBVA.

**Low market concentration**

By the end of 2008, outstanding bank loans represented 150% of GDP, and deposits 180%. Given the rather high savings ratio, it looks like large opportunities existing on the island. There are 37 domestic commercial banks, 32 foreign banks and other credit institutions serving a market of just 23m people. Therefore, although Taiwan's banking industry is advanced and mature, market concentration is low but competition is high.

Compared to other Asian Markets, Taiwan's market is less concentrated, the top 5 players only occupy 34.5% market share by assets. (Chart 4)

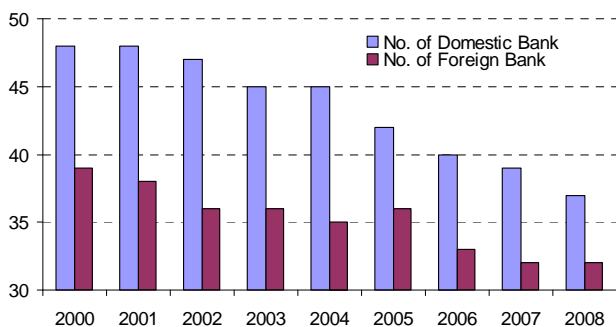
Chart 4: Top 5 players' market share by assets



Source: Central banks, EIU reports, Linklaters and BBVA.

During the recent years, the level of concentration, though still dispersed, has been enhanced compared to eight years ago, as the number of both domestic and foreign banks declined from 2000-2008. The number of domestic banks decreased from 48 in 2001 to 37 in 2008. And further consolidation expected to start with small banks (Chart 5).

Chart 5: The Number of domestic and foreign banks

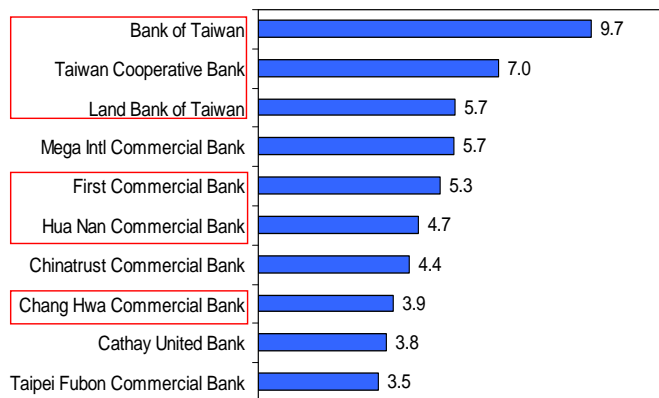


Source: CEIC and BBVA.

Among the largest 10 domestic banks, state-run banks take 6 seats, namely, Bank of Taiwan, Land Bank of Taiwan, Taiwan Cooperative Bank, First Commercial Bank, Hua Nan Commercial Bank, Chang Hwa Bank. The other state-run bank, Taiwan Business Bank, ranks 11th.

Bank of Taiwan has the largest market share of 9.7% in assets. Total assets by top ten banks account for 53.8% of banking industry as of May 2009.

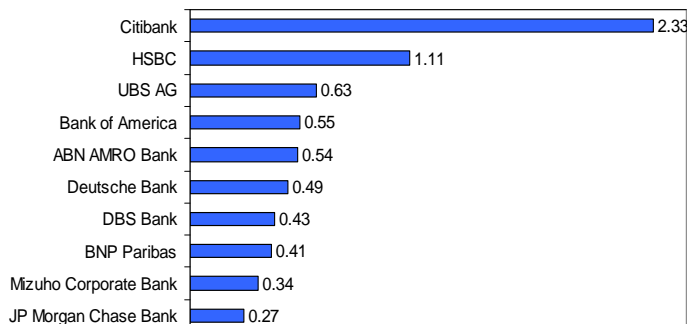
Chart 6: Top ten domestic banks by asset market share (%)



Source: CEIC and BBVA.

The number of foreign banks in Taiwan totaled to 32 as of May 2009, declining from 39 in 2000 (Chart 5). Compared to domestic banks, the market share by foreign banks is still minimal. Citibank is the largest, but market share in assets is only 2.33%. HSBC ranks the second, only half of Citibank's share. (Chart 7)

Chart 7: Top ten foreign banks in asset market share (%)



Source: CEIC and BBVA.

### Over-banked and low profit margin

Total 37 domestic commercial banks, 1 medium business bank, 291 credit cooperatives and departments, and 32 foreign banks run the business on the island. Furthermore, there are 4525 bank branches belonging to above institutions competing for the market share. It indeed leads to fierce competition and low profit margins.

As a consequence, the ratio of loans and deposits per branch was quite low, even compared to Hong Kong. The deposit per branch in Taiwan was USD 145 million, much lower than that in Hong Kong of USD 580 million, and similar to the loans per branch. (Table 2)

Therefore, Taiwan's banking system is relatively over-banked. High competition leads to low profit margin, even for the best situation in 2004, the profit margin as total asset before-tax return ratio was only 0.6%, and the volatility for profit margin is kind of large from 2000 to 2008. In 2006, the ratio was negative, and in 2008,

the profit margin was 0.15% as a result of a decrease in loan loss provisions. (Chart 8)

**Table 2:**

	Population Mn	Deposits		Loans		Branches unit
		Total	Per Branch	Total	Per Branch	
		USD mn	USD mn	USD mn	USD mn	
Taiwan	23.06	657,164	145	515,639	114	4525
Hong Kong	7.02	795,556	580	407,339	297	1371

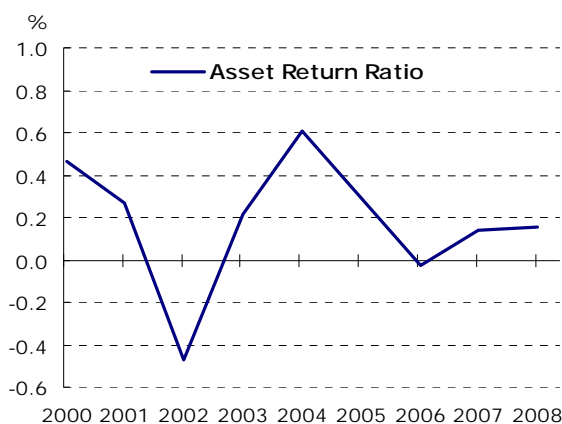
Note:

1 Data of deposits, loans and branches ended May 2009.

Population is as of 2008.

2 Branches include all monetary financial institutions.

**Chart 8: Asset Return Ratio**



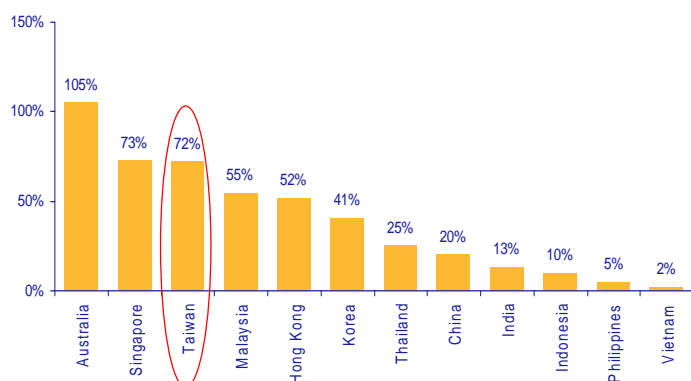
Asset Return ratio= net income before tax / total assets

Source: CEIC and BBVA.

### Development in retail banking

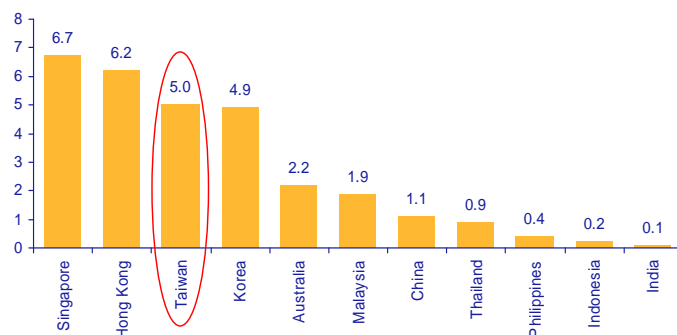
In the highly competitive environment, many banks have realized the potential growth in retail banking and have built up their retail lending portfolios aggressively. In terms of retail loans to GDP, Taiwan ranks next to Australia and Singapore in Asia-Pacific region. For the cards per capita, Taiwan also ranks the third. These ranks imply Taiwan's banking industry is very mature. (Chart 9 & 10)

**Chart 9: Rank of retail loans to GDP**



Source: Swiss Re, Moody's, Euromonitor, CEIC data

**Chart 10: Rank of cards per capita**



Source: Swiss Re, Moody's, Euromonitor, CEIC data

### 3. Policy Change

The warm up in the cross-strait relationship, especially the intended MOU to be signed for the financial sector, bodes well for Taiwan's financial sector. In April, the third round of cross-strait talks agreed to discuss the opening up of Mainland China's and Taiwan's financial sectors, as well as allowing foreign direct investment (FDI) into Taiwan from Mainland China. Following the agreements, China has approved qualified domestic institutional investment (QDII) to invest in Taiwan and issued policies to guide investment in Taiwan.

The two sides' efforts toward financial opening-up should be detailed further by signing a Memorandum of Understanding on cross-strait financial co-operation later this summer or this year (Box 2). The new framework would pave way for financial firms to move into each other's market. Taiwanese banks will be allowed to set up branches in China and to buy stakes in Chinese lenders, and vice versa.

According to Mainland China regulations, foreign banks need to set up representative offices in Mainland China for at least two years before applying for upgrading to a branch. China has not approved branch set-up from Taiwanese banks. Taiwan's banks could only stand and watch as other foreign banks rush into the booming Chinese market.

Indeed, the efforts are beneficial to both sides. Taiwanese banks can expand its operation from the over-banked market on island. The presence of Taiwan's banks can help many Taiwanese businesses on the mainland to expand their operations because of their existing relationship in Taiwan. Meanwhile, Taiwan's banks can bring much expertise to the Mainland China's large but still less developed banking sector based on a common language and culture with each other. The entry of Taiwanese banks is especially beneficial to small and medium enterprises in China given their expertise dealing with SMEs at home.

Seven Taiwanese banks with representative offices in Mainland China will be major beneficiaries of the coming cross-strait financial MOU, namely, Chang Hwa Commercial Bank, Hua Nan Bank, Cathay United

Bank, Chinatrust Commercial Bank, First Commercial Bank, Taiwan Cooperative Bank, Land Bank.

China's financial authorities have unveiled regulations that will guide the pilot scheme for cross-border trade to be settled in the Renminbi currency. The initiative can be extended further by establishing a cross-strait currency clearing mechanism to strengthen the banking and trade relation.

## 4. Outlook

Given that Taiwan's banking sector is relatively over-banked, many smaller banks will need to be consolidated. We expect more consolidation in the future, although the process has already started. Maybe the opportunities to expand to the Mainland China market and further opening of Taiwan's market for Mainland banks could act as a catalyst for further consolidation. As both sides take further steps toward deeper financial ties and more opening of their financial services, we expect more investment and penetration in each other after the signing of the MOU on financial industry by the two sides.

Meanwhile, Taiwanese banks will be affected by the crisis. Although the NPL ratio is still low, banks' asset quality will clearly worsen during 2009. However, it should stabilize in 2010 as the global economy starts to recover. In the same vein, the capital adequacy ratio should deteriorate in 2009 but not later. Overall, the Taiwan's banking system should weather the current global economic recession relatively well.



# Structural issues

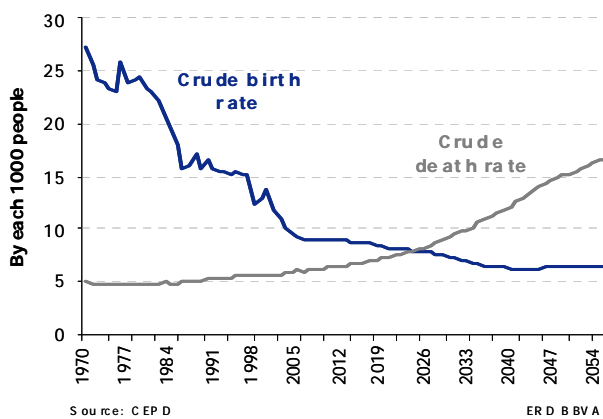
## Demographic and the Society

### Demographic transaction

Taiwan's demographic transition trend is similar to those economies that have transformed themselves from a developing economy to a developed one with relatively high income.

Birth rate has been experiencing a sustained fall since the 1970s, from 26 thousand children in 1970 to 8.9 thousand in 2008 for every thousand inhabitants.

**Birth and Death Rate (%) 1970-2056**



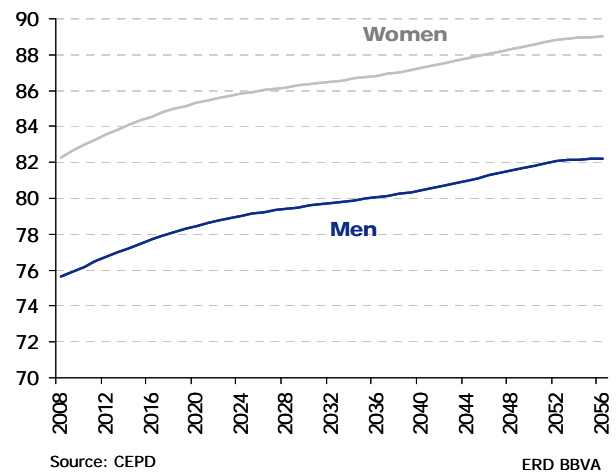
This level of birth rate is among one of the lowest on the planet. It is expected to remain relatively stable over the coming decades.

Meanwhile, life expectancy over the next 50 years is expected to increase in Taiwan at similar rates to those forecasts in developed economies. Presently, life expectancy of females and males has reached 82.3 and 75.6 years, respectively and it is expected to increase to 89 and 82 years by 2056 based on the current population trend.

The death rate, on the other hand, is expected to rise significantly in the medium and long term due to the aging of the baby-boom generation. Today, Taiwan records 6.2 deaths for every thousand inhabitants and

this number is expected to increase to 10.7 deaths for every thousand inhabitants over the next 50 years.

**Life Expectancy at Birth (year) 2008-2056**

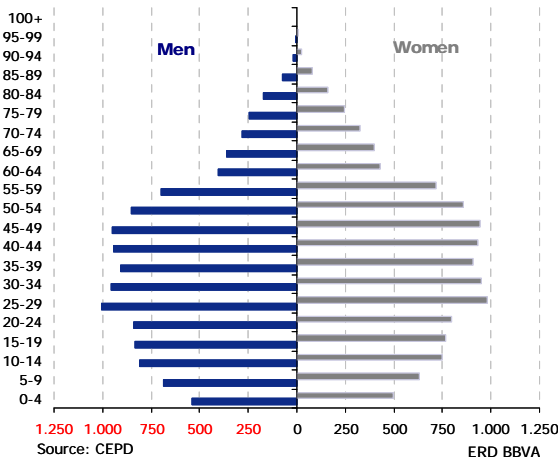


### Population by gender and age group

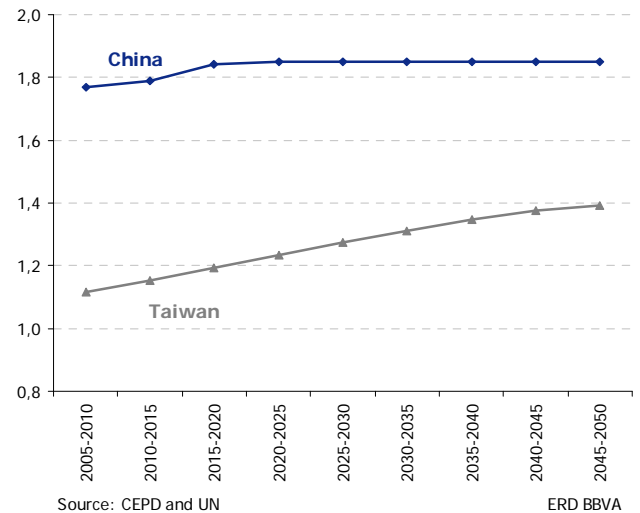
The current makeup of Taiwan's population pyramid is very similar to that of Spain (jar-shaped). The baby-boom generations belong to the age cohorts from 25 and 54 years old. The base of the population pyramid is getting narrower due to the progressive reduction in fertility levels. The declining birth rate, together with the increase in life expectancy and the aging of the baby boom generations, will make the island dominated by old age group in the world by 2050.



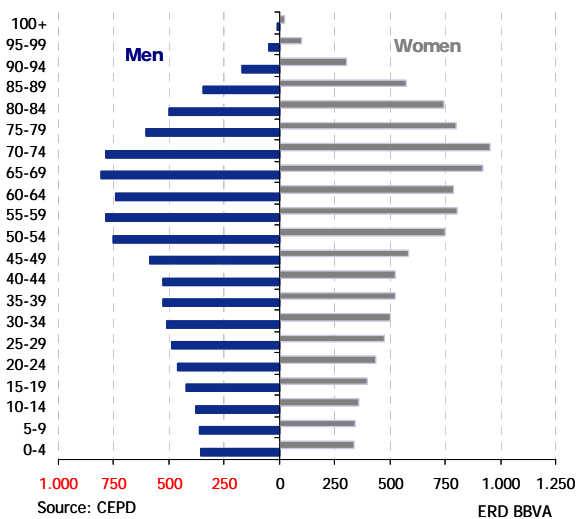
Population Pyramids 2008



Average Fertility Rate (%)



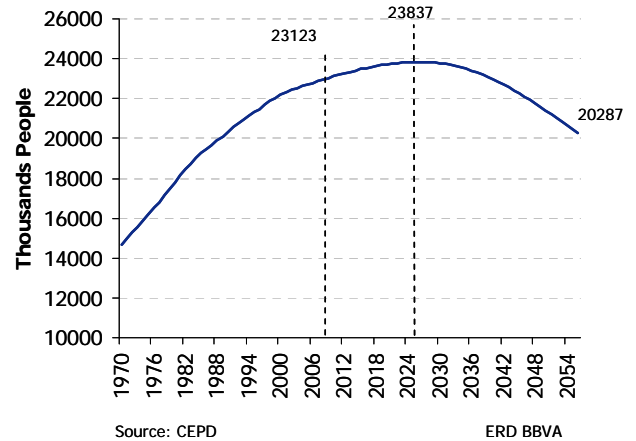
Population Pyramids 2050



According to current population forecast, Taiwan's fertility rate is likely to experience a slight upturn over the coming years, similarly to what would happen in Mainland China.

This then imply that the accrued population growth rate for 2010-2025 would be 3.1%, compared to the 2025-2056 period, which would drop by about 15%.

Population Projections (1970-2056)



While there is now one inhabitant over 64 years old for every 7 working age people between 15 and 64, this ratio will decrease sharply to 1.5 in 2050. Immigration is currently highly restricted, reaching 5,780 people (mostly from Mainland China) per year who are mostly stayed in north part of the island.

### Demographic forecast

Taiwan has a population size of 22.9 million. According to the latest official estimates from the Council for Economic Planning and Development (CEPD), the population size is expected to reach its highest level in 2026 at 23.8 million. The average population growth rate for 2010–2025 will be at 0.2%, while the growth rate for 2026–2056 will drop by 0.5% a year.

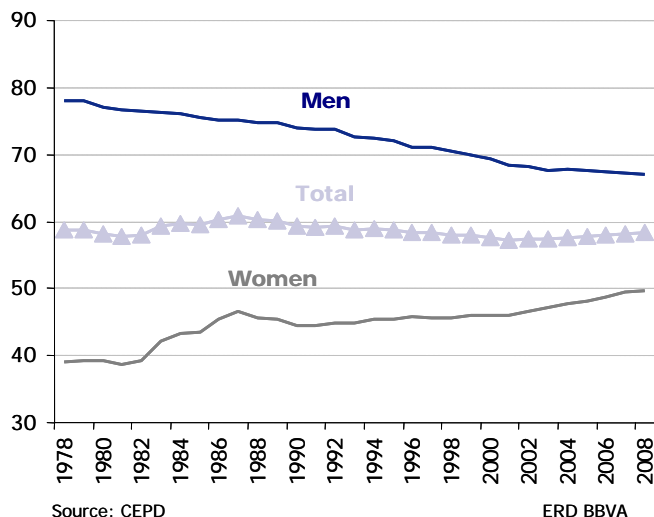
However, the demographic forecast scenarios do not take immigration into consideration. Due to the severe effect of population aging that will take place in Taiwan, the viability of immigration from Mainland China could potentially offset the aging effect should the cross straight relations continue to improve.

### The labor participation rate

Taiwan's labor participation rate has remained relatively stable over the last 30 years at around 59%. However, the breakdown by gender reveals a

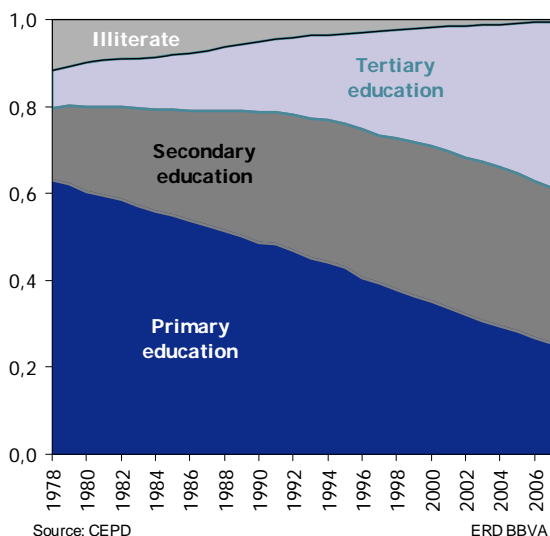
completely opposite trend. While the male participation rate has declined from 79% in 1978 to 68% in 2008, mainly due to early retirement, the female participation rate has gone the opposite way rising from less than 40% in the early 1980s to 50% in 2008. As a result, the drop in the male participation rate has been fully offset by the increase in the female participation rate.

## Participation Rate by Sex (%)



According to Vere and Wong (2002), while the workforce in Taiwan used to be mainly employed in manufacturing jobs (traditionally reserved for males), females could not find many niches. However, as the services sector developed and females increased their education attainment, the female participation rate rose considerably. It appears that the likelihood of continuing to work (after their first child) for Taiwanese females with higher-level education is much higher than for those without an education.

## Employment by level of Education (%)



The level of education attainment in Taiwan has been rapidly improved over the last 30 years. In the 1980s, the level of education in the labor force increased

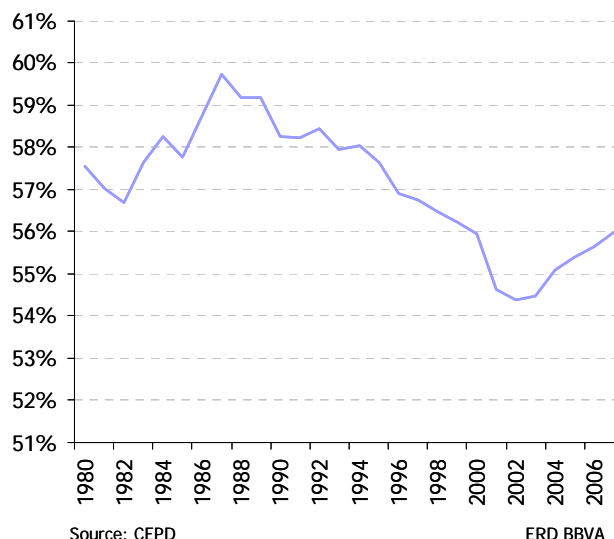
dramatically with a significant increase in workers with secondary education.

In the 1990s, the working population with higher-level education started to rise considerably. This transition was facilitated by an increased access to higher-level education by females. Presently, the level of training of Taiwanese workers is similar to that of the OECD average.

## Employment rate

The female participation rate and the unemployment rate tend to affect the changes in the employment rate in Taiwan. Between 1982 and 1987, the employment rate rose by over 2 percentage points, largely due to a significant increase in the female participation rate. From 1988 onwards, the employment rate followed a downward trend until around 2002, largely affected by rising unemployment rate while the participation rate remained relatively stable.

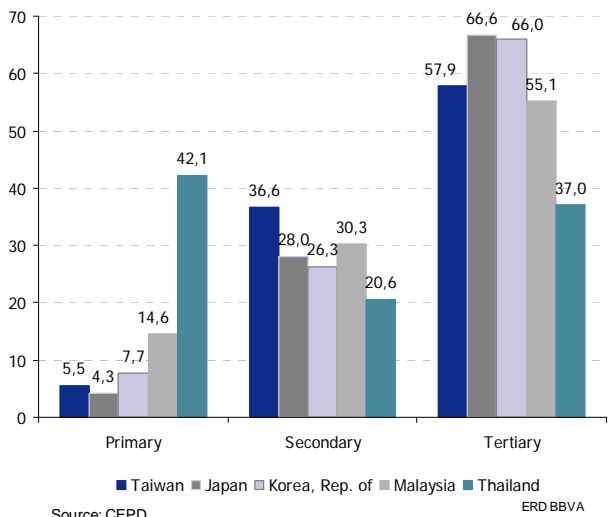
## Employment Rate



The upturn in employment from 2002 onwards helped the ratio recover somewhat.

The occupational structure by sector reveals that the weighting of the manufacturing sector (especially electronics) is higher than that of other sectors and it is higher than that of average of developed economies as well. Given Taiwan's high concentration in electronics industry, the collapse of the IT bubble in the early 2000s hit Taiwan particularly hard.

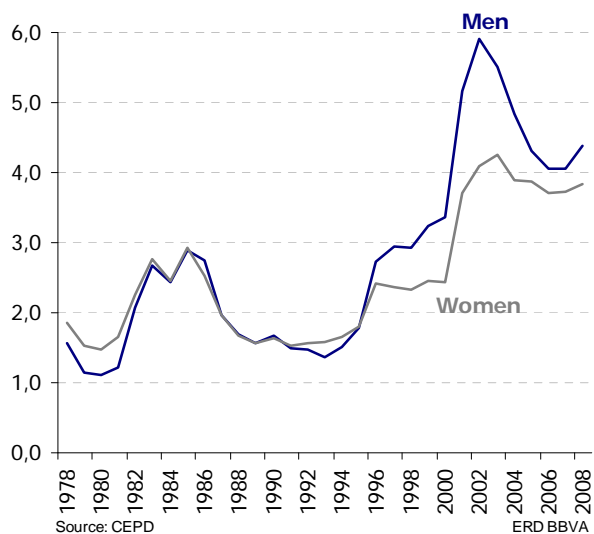
Distribution of Employment by Sector (%)



### Unemployment rate

During the rapid growth period between the late 1970s to 2000, Taiwan's unemployment was quite low at a range between 1% and 3%. In addition, there was not much gender difference, either.

Unemployment Rate by Sex (%)



The impact of the Asian financial crisis in 1997-98 and the collapse of the IT bubble in 2000 sent Taiwan's unemployment rate up to 6% for males and 4.1% for females. The increasing differences in gender may be due to the fact that many manufacturing jobs in the technology sector have traditionally been reserved for males. The ensuing rebound in global economy sent the unemployment rate to decline again and brought male and female rates closer to each other again. The unemployment rate picked up again strongly in 2009 because of the the severe global economic crisis.

Across the age group, there are also some interesting changes in participation ratio, employment rate, and

unemployment rate. The participation rate for 35 and 49 years rose from 71% in 1980 to 80.5% in 2008, a close to an increase of 10 percentage points, largely reflecting the improvement in the level of education of these population cohorts (especially among females). Better education attainment may explain the rise in labor market participation ratio.

YEARS OLD	1980			2008		
	PR <sup>1</sup>	ER <sup>2</sup>	UR <sup>3</sup>	PR <sup>1</sup>	ER <sup>2</sup>	UR <sup>3</sup>
15-34	59,9%	52,8%	2,17%	60,4%	54,3%	8,11%
35-49	70,9%	70,7%	0,26%	80,5%	77,7%	2,78%
50-64	56,8%	54,8%	0,40%	53,3%	50,8%	2,27%
65-over	8,5%	8,3%	0,00%	8,1%	8,0%	0,17%
TOTAL	58,3%	57,5%	1,23%	58,3%	54,6%	4,14%

1 Participation Rate, 2 Employment Rate = employed people/age by group, 3 Unemployment Rate  
Source: CEPD and ERD BBVA

However, in the group between 56 and 64, the participation rate has dropped by about 3 percentage points, probably due to early retirement, while the percentage of people aged 65 and over who stayed on the job market was over 8%, probably reflecting their pension eligibility.

Finally, the unemployment rate has risen in every age group in 2008 compared with that in 1980. The younger cohorts were particularly affected adversely.

### Life insurance: a potential private pension market to be developed

According to Datamonitor data (2008), the Taiwan insurance market is a rapidly-growing sector. Life insurance has recorded an average annual growth of 14.5% since 2003, achieving a market value of US\$43 billion in 2007 and exceeding other mature markets such as Japan (which grew at an average annual rate of 1.6% in the same period) and Korea which grew by 10% over the same period. Despite its relatively small population, the life insurance market was about 8% in the region, while the life insurance market in Mainland China and South Korea represented 10.30% and 12.80%, respectively.

However, the breakdown by insurance type in the life insurance sector clearly favors life insurance, which represented 87.6% of the market total in 2007 while the rest of the market share was taken over the insurance related to retirement funds.

The current makeup of the life insurance market may be largely due to legislation before the 2005 pension system reform that was not conducive to the development of private pensions for the population.

However, fast increase in population aging in Taiwan could result in long-term funding problems as the low rate of pension eligibility could force a large percentage of the population into poverty. The old system involved defined benefits, with contributions (between 2% and 15% of the average wage) paid by the employer. To be entitled for a pension, the contributor had to stay at the same company for 25 years (15 years if he or she was

older than 55 years). The employer's contributions on the worker's behalf could not be transferred to another company. In other words, if an individual changes company, he or she will lose the pension accumulated. At the time of retirement, the worker will receive a lump sum equal to 2 months of the average wage for each of the first 15 years worked, plus a salary for each year worked thereafter (see Yung-Ming Shiu (2005)).

This system had many drawbacks. Firstly, the company structure in Taiwan (mainly SMEs) has made it difficult for these companies to survive for long enough for their employees to receive a pension. Secondly, it discouraged labor mobility and has prevented older people from being hired because of very low rate of eligibility for pension.

From 1 July 2005 onwards, a new labor insurance model has been launched to cover contingencies such as maternity leave, occupational illnesses, and health and survival benefits.

This insurance scheme is compulsory for every worker and the employers have to pay contributions (depending on the worker's wage bracket). The pension system is based on defined individual contribution. In this case, the employer must contribute 6% of the gross wage (tax-free) to the employee's individual account. In addition, the worker can voluntarily contribute to another 6% of his or her wage, with significant tax advantages. These contributions can be transferred if the individual changes companies. At the time of retirement, the contributor can decide whether to retire in accordance with the old system, or receive the lump sum, or receive it as life income.

The contributions made are managed by the Bureau of Labour Insurance (BLI). This bureau is in charge of paying the pension at the time of retirement and ensures a minimum yield equal to the returns received from deposits of the last two years at a major local bank. The BLI can subcontract the financial management of the lump sum fund out to banks and insurance companies with a good reputation in the market.

In addition, companies with more than 200 workers can decide, with the approval of trade unions or the workers, to hire pension fund administrators to manage the contributions made by both employees and employers. This must be approved by the BLI.

	Fund	percentage
<b>I. Domestic investments</b>	<b>3210</b>	<b>75.50</b>
A. Cash or cash equivalent	560	13.17
(A) Banks savings	560	13.17
a. Current deposits	54	1.27
b. Time deposits	506	11.90
(B) Short-term bills	0	0.00
B. Equity	1479	34.80
(A) Investment by BLI	707	16.64
(B) Authorization	772	18.16
C. Bonds	271	6.37
(A) Government bonds	56	1.30
(B) Corporate bonds	37	0.87
(C) Financial bonds	172	4.05
(D) Financial asset backed securities	6	0.15
D. Real estate investments	42	0.98
E. Government loans	72	1.69
(A) Economic construction loans	2	0.04
(B) Farmers health insurance loans	70	1.65
F. Bail out loans	786	18.49
<b>II. Overseas investments</b>	<b>1041</b>	<b>24.50</b>
A. Cash or cash equivalent	23	0.54
B. Equity	309	7.26
(A) Investment by BLI	22	0.51
(B) Authorization	287	6.75
C. Bonds	709	16.70
(A) Investment by BLI	229	5.40
(B) Authorization	480	11.30
<b>Total</b>	<b>4251</b>	<b>100.00</b>

Source: Bureau of Labour Insurance (BLI).

The table above shows that the value of lump sum pension funds until April 2009 totaled US\$4.251 billion. The investment of these funds can be domestic or overseas. As for asset management, variable-income investment prevails with local companies and foreign companies occupying 34.8% and 7.26%, respectively. The local currency market and bail-out loans are also noteworthy.

The BLI can also delegate the financial management of its funds to renowned pension administrators.<sup>1</sup> Up until now, the administered amount totals US\$ 1.539 billion or 36.2% of the total.

The labor insurance also supplements employment insurance, which is combined with vocational training and the job service system. This fund accrues deposits and bonds worth €2.256 billion, as shown in the table.

	Total Fund	percentage
<b>A. Cash or cash equivalent</b>	<b>2183</b>	<b>96.77</b>
(A) Banks savings	2177	96.48
a. Current deposits	52	2.30
b. Time deposits	2125	94.18
(B) Short-term bills	7	0.29
<b>B. Bonds</b>	<b>73</b>	<b>3.23</b>
(A) Government bonds	57	2.51
(B) Corporate bonds	11	0.48
(C) Financial bonds	5	0.24
<b>Total</b>	<b>2256</b>	<b>100.00</b>

Source: Bureau of Labour Insurance (BLI).

The life insurance market structure is dominated by the Cathay Life Insurance, which has a 23% market share. However, there are only three multinational companies on the market with a significant percentage (AIG, ING and Allianz). The rest of the market is filled by local companies with lower shares.

	Revenue	Percentage
Cathay Life Insurance	10121	23.10%
Nan Shan Life Insurance (AIG)	6249	14.30%
Shan Kong Life Insurance	477	10.90%
Chungwa Post Co., Ltd. Life Insurance Dept. (renamed Taiwan Post Co. in February 2007)	3563	8.10%
ING Life Ins. Co. of America, Taiwan Branch	3262	7.50%
Fubon Life Assurance	2410	5.50%
Allianz President Life Insurance	1605	3.70%
MassMutual Mercuries Life Insurance	1501	3.40%
China Life Insurance	1494	3.40%
PCA Life Assurance	1144	2.60%

Source: PWC

<sup>1</sup> The main pension administrators are: ING Securities Investment & Trust, Cathay Securities Investment Trust, SinoPac Securities Investment Trust, Fubon Securities, Investment Trust, Fuh Hwa Securities Investment Trust, Jih Sun Securities Investment Trust.

## Rule of Law

Compared to other economies in the Asian Pacific region, Taiwan is the sixth least corrupt (behind New Zealand, Australia, Singapore, Hong Kong and Japan) according to the Corruption Perceptions Index published by Transparency International (2008). Globally, Taiwan's rank is less impressive – 43 out of 179 (1=least, 179=most) economies analysed. There are also signs that corruption in the political process has deteriorated further: After former President Chen Shui-bian left office in 2008 after two terms in office, he was arrested on charges of money laundry and embezzlement of state funds.

## Media

Taiwan enjoys a very high degree of press freedom and plurality, which is an important bench mark of an open society. The media on the island is amongst the most competitive in Asia. A wide variety of political, social and economic views are reflected in the hundreds of newspapers and magazines which are published on the island. About 85% of households are connected to multi – channel cable TV which is one of the highest take-ups in the region. That said, the politically partisan terrestrial TV channels dominate the market. The government is now planning to end state ownership of the media previously owned by the government, the military and the political parties. Internet is widespread with more than 70% of households connected to the internet.

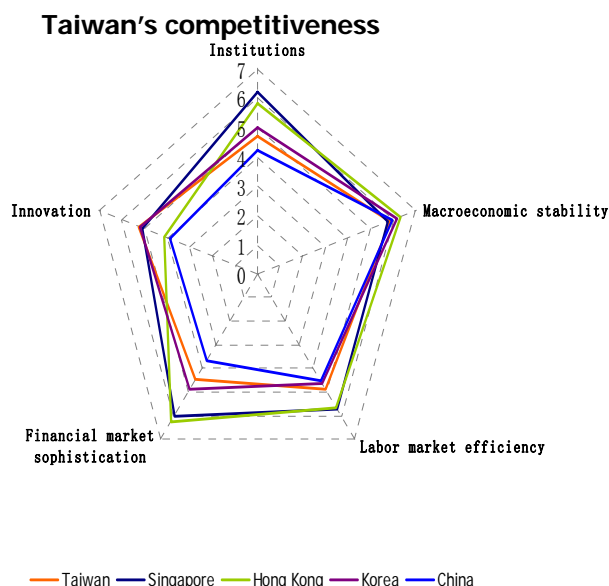
## Social and Economic Development

Because it has no representation at the UN, Taiwan is not listed in the Human Development Index. As a result, comparative analysis is difficult. According to data from the Chinese government, however, life expectancy in Taiwan (82 years for women and 76 for men) compares favourably with other economies in the region and is much better than Mainland China (74 and 71 years respectively).

There is also a high level of literacy (96.1%). Taiwan is ranked 24th of the 109 economies of the International Gender Empowerment Index which measures the involvement of women in commercial and political life and is above Japan or South Korea.

With a Gini coefficient of 0.326, Taiwan is comparable to South Korea or the United Kingdom in terms of income distribution.

According to the latest World Competitive Report, Taiwan has fallen behind other newly industrialized economies in Asia such as Korea, Singapore, and Hong Kong in areas of institution quality, financial market sophistication. However, it maintains decisive edge in technology innovation and macroeconomic stability.





# Energy

With less than 1% of the Asian population, Taiwan produces more than 9% of its GDP and consumes some 3.4% of its primary energy. It is an important economic and trading center of Asia, with one of the busiest ports in the world. Its relatively high per capita income and well developed industry make it a high energy consuming economy in Asia.

The following chart shows a comparative summary of some key energy indicators of the Taiwan, China and OECD economies.

**Primary energy statistics for selected countries (2006)**

	Taiwan	China	OECD
<b>Total Primary Energy Supply (TPES)</b> (Mtoe)	108	1879	5537
<b>TPES per capita</b> (toe/capita)	4.74	1.43	4.70
<b>TPES/GDP</b> (toe/000 2000 US\$)	0.27	0.9	0.19
<b>TPES/GDP (PPP)</b> (toe/000 2000 US\$ PPP)	0.18	0.22	0.18
<b>Electricity consumed per capita</b> (kWh/capita)	9984	2040	8381
<b>CO<sub>2</sub>* per capita</b> (t CO <sub>2</sub> /capita)	11.87	4.27	10.93
<b>CO<sub>2</sub>/GDP</b> (kg CO <sub>2</sub> /2000 US\$)	0.69	2.68	0.44
<b>Net Imports</b> (Mtoe)	99	136	1845

Source: International Energy Agency

\*CO<sub>2</sub> Emissions from fuel combustion only.

As can be seen, Taiwan's energy indicators are similar to the OECD levels and far ahead of the level reached in Mainland China. Per capita primary energy consumption (most notably for electricity) is even higher in Taiwan than that of the OECD average. This is also the case after adjusting for PPP.

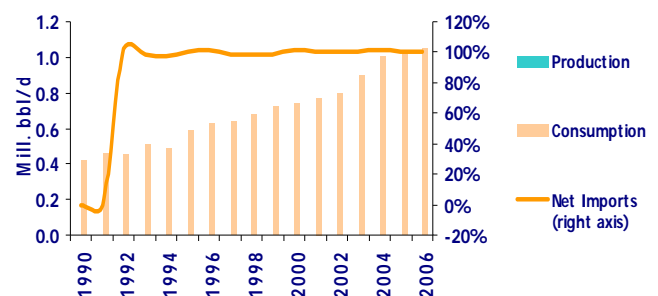
The industry sector is the biggest energy user, occupying 38% of the total in 2006, followed by transportation, with 22%. Households accounted for 8% of the final energy consumed, compared to 28% in Mainland China or 43% for Indonesia.

However, Taiwan is not well endowed with energy resources as it barely holds any fossil energy reserves (considerably less than 0.1% of the world proven reserves of oil, coal and gas). It has encouraged investment in domestic oil and natural gas projects but its tiny reserves show that these efforts are unlikely to yield sufficient energy resources for it. As for coal, the

economy no longer produces any domestic coal and has to import 100% of its coal needs.

Taiwan is also heavily dependent on oil and gas imports to cover its energy demand and it will likely continue to do so in the future.

**Oil Balance. Taiwan 1990-2006**



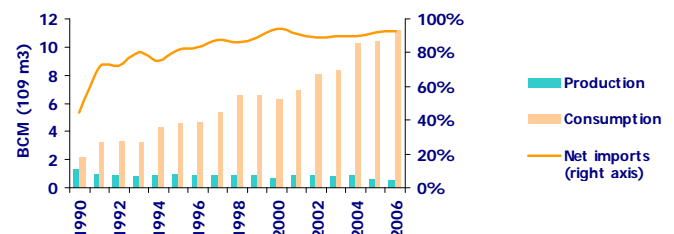
Source: Enerdata

BBVA ERD

Taiwan's oil consumption has increased from 0.4 million barrels a day (mbd) in 1990 to slightly more than 1mbd in 2006. Estimated total oil production has remained flat for many years, averaging some 0.01 mbd at present, according to EIA. Most of this production corresponds to refinery gains (i.e., imported crude oil which is refined in the island) as crude oil production amounts to less than 0.001 mbd). In terms of oil imports, 80% of them come from the Middle East<sup>2</sup>

A similar picture can be observed for natural gas, for which Taiwan must import roughly 95% of its needs. Natural gas consumption in Taiwan has consistently trended upwards, rising from 2 billion cubic meters (BCM) in 1990 to 8 BCM in 2002 and 11 in 2006 according to the available statistics.

**Gas Natural Balance. Taiwan 1990-2006**



Source: Enerdata

BBVA ERD

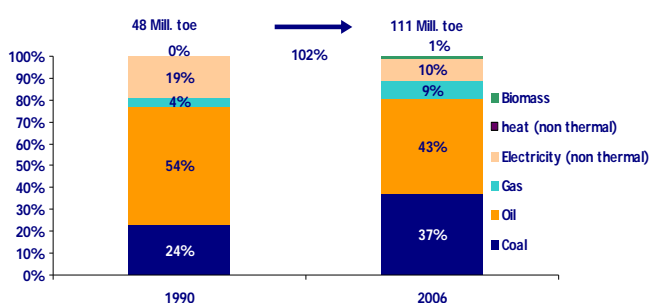
<sup>2</sup> Taiwan has an important and well developed petrochemical industry where, among other products, it refines some imported crude oil.

Although natural gas was primarily consumed in the residential and industrial sectors in the eighties, nowadays roughly 80% of it is used for power generation. Due to environmental concerns and the construction of new natural gas-fired power plants, the government anticipates an increase in natural gas demand and rising liquefied natural gas (LNG) imports for the future.

According to US Energy Information Agency (EIA), concerns have grown over Taiwan's future LNG supply security, particularly after Indonesia's Pertamina canceled ten LNG cargoes to Taiwan in late 2004. Moreover, it seems that Indonesia does not intend to renew a LNG contract with Taiwan that is currently set to expire in 2009, due to concerns about falling output. Finally, another major contract between both parties is set to expire in 2017. The national oil and gas company (CPC) is now seeking alternative long-term LNG contracts, mainly from Qatar and Australia, in order to diversify the risk of supply.

Despite the lack of domestic fossil resources, almost 90% of energy needs are covered with fossil fuels (43% with oil, 37% with coal, and 9% with natural gas in 2006). Both coal and gas (mainly LNG) have raised substantially their consumption shares since 1990, mainly due to their increased use in power generation and some other industrial uses.

Total Primary Energy Supply by Source. Taiwan 1990-2006



Source: Enerdata

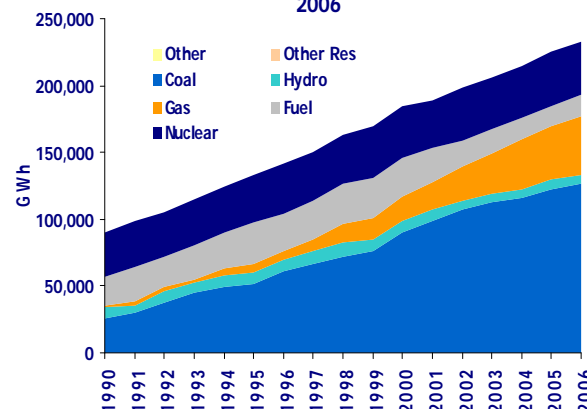
BBVA ERD

The big reliance on fossil energies, together with its high rate of per capita energy consumption, explains why Taiwan's per capita carbon emissions are amongst the highest in the world. This is an issue that may become a challenge for the future, although for the time being Taiwan is not a signatory of the Kyoto Protocol.

## Power sector and electricity consumption

The majority of electricity in Taiwan is generated from conventional thermal sources, including nuclear.

Gross electricity generation by source. Taiwan 1990-2006



Source: Enerdata

BBVA ERD

Renewable sources are almost inexistent, except for hydraulic power, which provides a tiny 3-4% of the total gross electricity generated. As for nuclear, in the mid-1980s it provided roughly half of the total electricity generated but today the share stands below 20%. However, it is expected that the share will increase back in the future, with the construction of a big nuclear plant at Lungmen that would increase the installed nuclear capacity by 50%. Construction of the new plant (with two advanced reactors) has been controversial for long but the government has recently backed it firmly citing CO2 emission concerns.

According to the International Agency for Atomic Energy, completion of the first unit is expected to be in 2010, in 2011 for the second one. Commercial operation is expected in 2011-2012. As of March 2009, the project was 90% complete but \$1.15 billion was required to finish it. The uncertain future of the fourth nuclear plant has caused hesitation in other power plant construction plans.

With respect to electricity consumption, the International Energy Agency (IEA) reports that access to electricity in Taiwan approaches 99% (as in China). Moreover, the use of traditional biomass in residential consumption is almost inexistent, in stark contrast with the average 60% observed in the Southeast Asian region.