

**Financial Liberalization and
the Impact of the Financial Crisis
on Singapore**

MICHAEL LIM MAH-HUI AND JAYA MARU

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Third World Network

**Financial Liberalization and the Impact of the Financial Crisis
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is published by
Third World Network
131 Jalan Macalister
10400 Penang, Malaysia.
Website: www.twinside.org.sg

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Printed by Jutaprint
2 Solok Sungei Pinang 3, Sg. Pinang
11600 Penang, Malaysia.

ISBN: 978-983-2729-93-8

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ACKNOWLEDGEMENTS

This paper was prepared as part of a Third World Network research project on financial policies in Asia directed by Yilmaz Akyüz. An earlier version was presented at the Conference on the Effects of the Global Financial Crisis on Asian Developing Countries and Policy Responses and Lessons, held in Penang, Malaysia on 18-20 August 2009 and organized by the Third World Network and Consumers Association of Penang.

The authors wish to thank Stephen Santos, Xylee Javier and Chen Qun for their excellent research assistance and to acknowledge the helpful discussions with Drs. Khor Hoe Ee, Chan Huan Chiang and Goh Soo Khoon. The usual disclaimers apply.

Chapter 1

INTRODUCTION

THE key issue and challenge facing many emerging market countries today is how to manage economic growth and financial stability in a globalized economy where capital flows and financial markets are increasingly liberalized. The huge surge of capital into Asian economies, coupled with current account deficits in these countries in the first half of the 1990s, eventually resulted in massive currency, financial and economic crises in 1997 and 1998. Mainstream economists identified, among other things, the semi-pegged system of foreign exchange practised by many Southeast Asian countries as one of the major causes of the crisis. After the crisis, many economists propounded “corner solutions” for emerging countries to manage their foreign exchange system. Typical is Larry Summers’ comment: “... the choice of (the) appropriate exchange system, for economies with access to international capital markets, increasingly means a move away from the middle ground” (cited in Khor et al., 2007:7). However, in reality, many Asian countries still practise intermediate positions between the corner solutions of rigid fixity and free float.

This paper examines the development of Singapore’s capital account and financial liberalization policies and their impact on the country’s economic growth and stability.

Early Years of Singapore’s Development

After Singapore separated from Malaysia and became independent in 1965, its small domestic market and lack of natural resources necessitated

an outward-oriented growth. It started to diversify away from dependence on entrepot trade, and developed its industrial sector based on export-oriented growth and foreign direct investments. This together with its decision to become an international financial centre in the late 1960s underpinned the start of the liberalization of its capital account and financial sector.

The Monetary Authority of Singapore (MAS) began in the 1970s to progressively liberalize foreign exchange controls with the floating of the Singapore dollar (S\$) in 1973, followed by gradual lifting of exchange control regulations allowing Singapore residents and companies to invest in foreign currency deposits or equities.¹ Asian Currency Units were established in banks to accept foreign currency deposits from Singapore residents and non-residents. In 1975, the bank cartel on fixed interest rates was abolished. By 1978, all foreign exchange control regulations were lifted and Singapore residents and companies were allowed to borrow and lend in all currencies. The absence of capital controls greatly facilitated the development of Singapore's capital and financial markets such that by the 1980s it had become an important financial centre with many international financial institutions. Singapore had around 100 financial institutions in the mid-1970s and by 1990, this number had increased to 450.

Singapore's initial phase of industrial growth was highly dependent on foreign direct investments. Between 1965 and 1984, Singapore experienced persistent current account deficits averaging 10% of GNP, reflecting strong growth in private investments.² The large deficits were not a concern because they were invested in industrial development rather than spent on consumption. At some point, foreign direct investments constituted 80% of total investment in the manufacturing sector (Tan, 2000). The economy imported large amounts of capital goods and moved from labour-intensive production in the 1960s to more capital-intensive manufacturing industries like petroleum refining in the 1970s, and later to higher-value-added production like electronics and chemicals in the 1980s.

¹ Note: All \$ refer to Singapore dollar unless stated otherwise.

² For an excellent overview of the structural changes in Singapore's balance of payments from 1965 to 2003, see MAS (2004).

Since gross exports and imports were over two times Singapore's GDP, its economic growth and inflation rate were highly dependent on the external sector; hence, a credible foreign exchange policy was pivotal to its economic health. Also, the absence of exchange controls made Singapore vulnerable to turbulence in international currency markets and oil price shocks. Recognizing that a stable S\$ was crucial to maintaining steady non-inflationary domestic growth, and that movements in the foreign exchange rate had more impact on economic growth than the interest rate, MAS shifted to an exchange-rate-centred monetary policy in 1981.³

MAS uses the exchange rate as an intermediate instrument to achieve its primary objective of maintaining price stability as a sound basis for sustainable economic growth. Under this system, MAS cedes control over domestic interest rates and money supply; these are largely determined by foreign interest rates and investors' expectations of the future value of the S\$. Singapore has successfully maintained an inflation rate below the international inflation rate; hence its interest rates are normally below US interest rates, reflecting market expectation of gradual appreciation of the S\$.

Basket, Band and Crawl (BBC) Exchange Regime

MAS's specific mechanism of managing the S\$ exchange rate is through the use of the basket, band and crawl (BBC) system popularized by Williamson. This system allows the country to manage short-term currency fluctuations and volatility as well as to adjust long-term misalignment to its macroeconomic fundamentals (MAS, 2001; Khor et al., 2007).

The S\$ is managed against a basket of currencies of its trading partners and competitors on a weighted basis. The trade-weighted exchange rate is allowed to fluctuate within a policy band, the level and slope of which are announced semi-annually. The band provides room to absorb short-term

³ Khor et al. (2007) showed that a 1% appreciation in the exchange rate has a greater adverse effect on GDP, exports and inflation as compared to a 1% increase in interest rates.

fluctuations and is reviewed periodically to ensure it is consistent with the underlying economic fundamentals. Thus it incorporates a crawl feature that allows continual assessment of the path of the exchange rate to avoid misalignments in currency value.

Over the long term, Singapore's exchange rate policy is to allow the S\$ to appreciate in order to maintain price stability by dampening external demand and wage pressure through incremental increases in purchasing power of the S\$, as well as to provide an impetus for exporters to move up the value chain to remain competitive. Singapore's per capita income has risen from \$11,000 (US\$5,200) in 1981 to \$50,299 (US\$36,000) in 2007.

Another feature of its exchange rate policy is counter-cyclicality. MAS tends to adopt a "lean against the wind" policy. For most of the 1990s, MAS intervened to moderate the nominal effective exchange rate (NEER) appreciation, while in contrast, during the Asian crisis, it intervened to support the currency to prevent the exchange rate from falling below the policy band. (See Appendix 1 for a chronology of MAS's monetary policy since the 1990s.) However, the government does not only use the exchange rate to maintain competitiveness. This is done in concert with other instruments, in particular, adjustments of factor prices. During the mid-1980s crisis, the government effected most of the adjustment in the real effective exchange rate (REER) in the real economy by reducing business and wage costs through a cut in the employer pension contributions and control of or reduction in wages. The NEER was allowed to depreciate modestly. But because the US dollar depreciated following the 1985 Plaza Accord, the S\$ strengthened 12% against the USD but depreciated 44% against the yen and 36% against the deutschemark between 1985-88 (MAS, 2001:6). Between 1988 and mid-1997, the S\$ appreciated again in both NEER and REER terms, reflecting strong external demand and GDP growth. The onset of the Asian crisis affected Singapore and the S\$ depreciated against the USD but appreciated against the regional currencies. MAS again eased the exchange rate policy when the crisis deepened and only shifted to a pre-emptive stance on inflation after the recovery.

Non-internationalization of the Singapore Dollar

The non-internationalization of the S\$ was promulgated in 1983 after Singapore had adopted the exchange rate as the instrument to implement its monetary policy in 1981. This policy was codified in MAS Notice 621 and adopted to discourage internationalization of the S\$ out of fear that a large offshore market in the S\$ could destabilize capital flows and cause greater exchange rate and interest rate instability (Ngiam, 2000). Banks were required to consult with MAS before providing S\$ credit facilities greater than \$5 million to non-residents, or to residents where the proceeds of the loan were to be used outside Singapore. By itself, this policy would not have been effective in discouraging speculation if it was not accompanied by prudent fiscal positions, strong macroeconomic fundamentals, and consistent and credible government policies. Fortunately, Singapore met all the other necessary conditions.

There were a few instances of speculative attacks on the S\$ that were effectively managed. Following the recession in 1985, MAS allowed the S\$ to depreciate but speculators over-estimated the extent to which the authorities were prepared to allow the S\$ to depreciate and the S\$ came under speculative pressure in August and September of 1985. MAS then intervened by spending US\$100 million (less than 0.1% of its foreign reserves) to purchase S\$. The consequence was an immediate jump in the overnight inter-bank rate, which reached 120% on September 18, and the S\$ strengthened 5% in four days, resulting in substantial losses for the speculators (Kapur, 2005). The very healthy foreign reserves (over six times its monetary base), its non-pegged system (meaning speculators faced a “two-way” bet), and the non-internationalization of its currency all created conditions to lessen Singapore’s vulnerability to speculative attacks. In fact, even during the height of the Asian crisis in early 1998 when the S\$ depreciated 18% (compared to a 5% depreciation in 1985), the S\$ did not come under speculative attack; it actually benefited from “safe haven” status and received large inflows from the region.

Singapore moved towards greater financial and capital account liberalization after the 1997/98 Asian crisis. One of the drawbacks of the non-internationalization of the S\$ was that it discouraged the development

of the domestic bond market. The Asian crisis had exposed the dangers of being over-dependent on the banking sector for credit and growth; hence, the government wanted to deepen and broaden Singapore's capital markets. To do this, it had to relax its non-internationalization policy. In 1998, MAS introduced Notice 757 to replace Notice 621. The highlights of this new policy were a full liberalization of the S\$ credit facilities to residents, and relaxing the credit facilities of S\$ to non-residents for equity listing and issuance of S\$ bonds. It also allowed a restrictive use of derivatives for hedging interest rate and currency risks. All these moves were in line with the thrust to make Singapore an international financial centre. (See Appendix 2 for a chronology of the non-internationalization of the Singapore dollar.) Banks are still required to consult with MAS for credit facilities of over \$5 million to non-resident non-bank financial institutions, thereby allowing MAS to keep a close watch on financial speculators. The relaxation of the non-internationalization of the Singapore dollar did not have much impact on the currency during the current global crisis as MAS relies more on other considerations, such as strong macroeconomic fundamentals, prudent fiscal policies, foreign exchange alignment with economic fundamentals, credible and firm monetary policies etc., rather than the non-internationalization of its currency to maintain exchange rate stability.

Measures in the liberalization of the financial sector can be grouped into three categories (Lim, 2002). The first involved a paradigm shift for MAS, moving away from regulation towards supervision, following the Anglo-Saxon model of financial liberalization. After 1998, MAS shifted from a one-size-fits-all approach in risk management regulatory system to a risk-based management system for banks. This new approach relies on market players to provide full and timely disclosure, and the market to discipline their behaviour. Secondly, MAS decided to gradually remove the protection accorded to domestic financial institutions in order to foster competition and financial innovation. Lastly, MAS undertook measures to develop the capital markets to complement the banking loans market. These developments are evidenced in Table 1 that shows the growth in the size of the capital market between 1991 and 2008. Between 1995 and 2007, domestic bank loans to non-bank customers only grew twofold while the bond markets rose 7.4

times to reach \$171 billion or 74% of the bank loans market. Likewise, stock market turnover rose 20 times compared to the 3.6-fold increase in the loan market between 1991 and 2007.

Table 1: Banking and Capital Market Indicators

<i>\$\$ billion</i>	1991	1995	1999	2005	2007	2008
GDP Current Price	75.3	118.2	144	199.4	243.2	257.4
Bank Assets	136.1	224.6	326.3	425.2	582.9	668.5
Loans to Non-bank Customers	64	109	147.2	183.1	233.3	272.1
Stock Market Capitalization	97.8	292.5	470.8	420.9	776.1	384.7
Bond Market Debt Outstanding	N.A.	23	43	136.8	171.3	N.A.
Stock Market Turnover	30.5	97.4	196.9	205.2	604.6	386.6
New Issues of Debt Securities	1.9	3.8	9.3	20	30	N.A.
New Issues Equity	1.9	1.7	6.3	11.7	22.6	N.A.

Source: Lim, 2002: Table 4; MAS, Annual Report, various issues

Table 2 shows that the number of bank financial institutions has consolidated and been declining while the number of capital market financial institutions like insurance companies, stockbroking firms and investment advisers and fund managers has risen.

Table 2: Number of Financial Institutions

	1990	1995	2000	2005	2008
Banks	141	140	140	111	113
- Local	13	12	8	5	6
- Foreign	128	128	132	106	107
Finance Companies	28	23	14	3	3
Merchant Banks	68	77	63	48	49
Insurance Companies	124	141	153	140	151
Stockbroking Companies	57	81	77	65	93
Investment Advisers	60	136	154	91	110

Source: Lim, 2002: Table 1; MAS, Annual Report, various issues

By charting such a course, namely towards an open and fully liberalized economy, Singapore's economic growth is essentially determined by external factors – rising in times of global boom and dropping in times of world recession. However, having built up persistent current account surpluses and huge foreign and fiscal reserves, it is able to weather the economic and financial storms better.

We now turn to the impact of the present global financial crisis on Singapore and its policy responses.

Chapter 2

GLOBAL FINANCIAL CRISIS – CHANNELS OF TRANSMISSION

SINGAPORE is experiencing the sharpest economic downturn in over two decades, one that is even more severe than that experienced during the Asian financial crisis. While the impact of the Asian crisis on Singapore was felt quickly, the impact of this global financial crisis was delayed and started to bite only in the third quarter of 2008. (See Chart 19.) The Asian crisis hit the financial sector hard. But in this crisis the financial and banking sector is relatively unscathed, with the exception of the stock market that tumbled furiously. Most of the shocks are transmitted through the trade sector and capital and financial flows impacting the real economy.

Impact on Banking Sector: Toxic Assets

The most direct channel of financial shock is the distribution of toxic financial assets by US financial institutions to the rest of the world. Singapore, being a regional financial centre and aiming to catch up with the sophistication of the Anglo-Saxon financial model, naturally had its fair share of toxic assets. The bigger and more sophisticated domestic banks in Singapore invested in collateralized debt obligations (CDOs) and other structured products, with DBS, the largest domestic bank, taking the lion's share at \$2.4 billion, OCBC with \$430 million and UOB with \$392 million (*Straits Times*, August 25, 2007). While these amounts are substantial, they did not materially weaken the capital base of these banks. The total capital of domestic banks was \$39 billion. These banks parked these structured assets in special

investment vehicles that were off the balance sheet. Also, much of these assets were sold to institutional and private banking investors.

Singapore targeted financial wealth management as one of the pillars in the development of its financial market. The export boom in Asia coupled with the big run-up in commodity prices brought a huge amount of funds into the country. Singapore was competing with Switzerland to be a world financial wealth management centre; private bankers and fund managers sprung up like wild mushrooms after a spring shower. The total assets under management in Singapore rose from \$150 billion in 1998 to \$720 billion by the end of 2005. Funds sourced from the Middle East and South Asia expanded by 30% and 56% respectively. Nearly 47% of the funds were invested in equity, the rest allocated to bonds, commodities, derivatives and money market products (People's Daily Online, 2006). By 2007, the amount of funds managed had nearly reached \$1.2 trillion and the number of investment professionals in this industry was 2,185 (MAS, 2008a:32).

There was a big push in financial sector reform in 2001 with the passage of the Securities and Futures Act (SFA) and the Financial Advisers Act (FAA). "The FAA aims to improve the level of services and the quality of advice delivered by financial advisers... Consumers and investors will have a wider choice of investment products to choose from as distributors and product manufacturers would be able to cross-sell each other's products" (MAS, 2002:12ff). With this push, every other banker was pushing structured products to not only the more affluent and sophisticated depositors but also pensioners and the ordinary folk in the street.

DBS sold about US\$360 million of structured notes linked to Lehman Brothers Holdings Inc. in Hong Kong and Singapore. Most of these structured notes – including DBS High Notes 5 in Singapore and the Constellation series in Hong Kong – have been given a value of zero by DBS Group Holdings Ltd. as a result of the financial crisis (AsiaOne, October 29, 2008). A recent MAS study also revealed that Singapore banks issued \$508 million of Lehman Minibond Programme Notes, \$103 million DBS High Notes 5 and \$28 million Merrill Lynch Jubilee Series 3 LinkEarner Notes – all of these sold to thousands of retail investors, with 28% having bought \$10,000 or less (MAS, 2008b:51). Many of these investors have taken class action

against the banks, particularly DBS. In July 2009, more than 200 investors who lost a total of about \$17 million on DBS High Notes 5 filed a lawsuit against the bank in a bid to get their money back. The investors have called for their notes to be declared “void” and their stakes repaid (*Straits Times*, July 10, 2009).

Many financial institutions have already compensated the less sophisticated investors who were affected by the toxic structured notes. Hong Leong Finance paid \$57.6 million to 2,048 investors; this is the highest amount of compensation paid out. Maybank offered \$25.3 million to 1,100 investors, while ABN Amro paid 262 investors \$14.1 million. DBS compensated 197 investors \$7.6 million. According to MAS, the total settlements for decided cases amounted to \$105 million (Channel NewsAsia, July 8, 2009).

In sum, though the above have made headlines and caused embarrassment to banks and the regulatory authorities, the fallout from toxic assets (0.5% of total banking assets) in the banking industry is minimal. With total assets of \$581 billion and a capital base of \$39 billion, the banking industry is not significantly affected by this episode. However, MAS is undertaking an extensive review of existing practices in the sale and marketing of investment products in light of these developments. On July 1, 2009, MAS imposed bans on the sale of structured notes by 10 financial institutions (ABN Amro Bank, CIMB-GK Securities, DBS, DMG and Partners Securities, Hong Leong Finance, Kim Eng Securities, Maybank, OCBC Securities, Philip Securities and UOB Kay Hian), which had distributed toxic structured notes linked to Lehman Brothers. The ban has been stipulated to be from a 6-month to 2-year period but will remain in place until MAS is satisfied there are adequate measures to ensure proper training for financial advisory representatives and consistent risk rating procedures for structured products sold by these financial institutions (Channel NewsAsia, July 8, 2009).

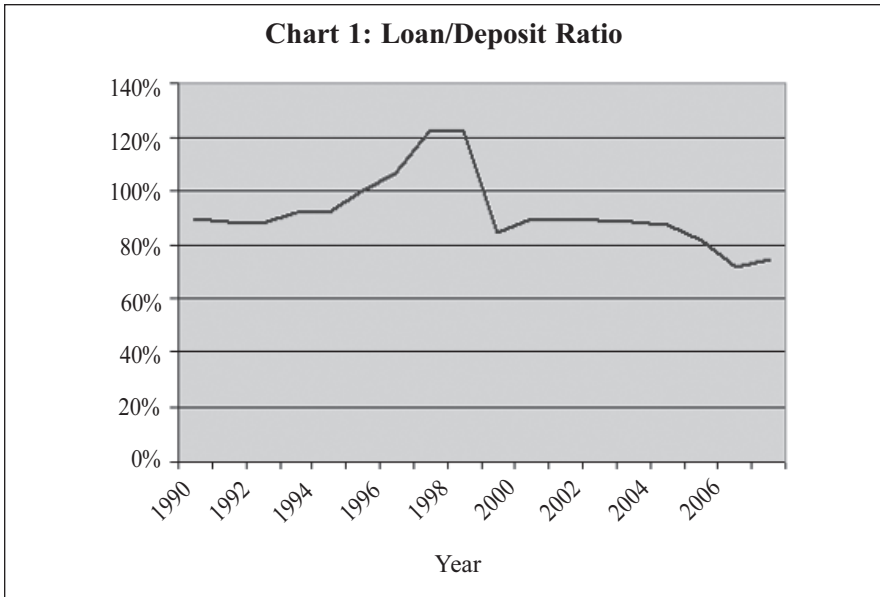
Singapore’s banking sector is strong and has improved since the Asian crisis. Between 1997 and 2007, its loan-to-deposit ratio dropped from 121% to 74%. Its ratio of shareholders’ equity to total assets has declined from a high of 9.9% in 2001 to 6.8% in 2007 due to a sharper rise in total assets. (See Table 3, Chart 1 and Chart 2.) A MAS 2008 report showed the equity-to-total-assets ratio of local banks at 8.5% and their ratio of regulatory capital

to risk-weighted assets at 14.3% in the third quarter of 2008. Asset quality also improved with non-bank non-performing loans at 1.4% of non-bank total loans in Q3 2008, down from 3.8% in 2005 (MAS, 2008b, Table B2:59).

Table 3: Selected Financial Indicators, 1997-2007

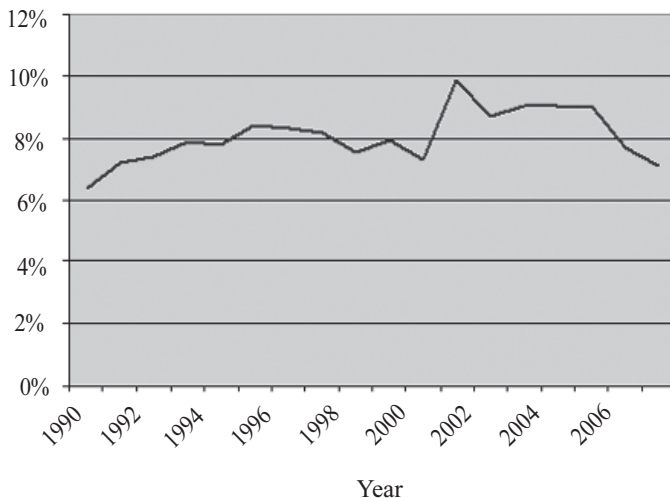
<i>S\$ billion</i>	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Total Bank Assets	289.6	310.0	321.0	335.8	373.7	353.1	362.5	398.2	425.2	508.6	580.9
Equity	23.7	23.3	25.3	24.5	36.9	30.6	32.7	35.9	38.2	39.0	39.3
Deposits (non-bank)	118.2	124.1	174.5	171.3	182.6	180.1	194.2	206.2	223.7	272.5	315.0
Loans (non-bank)	143.2	151.6	147.2	154.0	162.9	161.3	171.4	179.1	183.1	194.6	233.4
Ratios (%)											
Loan/Deposit	121.2%	122.2%	84.4%	89.9%	89.2%	89.5%	88.3%	86.9%	81.8%	71.4%	74.1%
Equity/Total Assets	8.2%	7.5%	7.9%	7.3%	9.9%	8.7%	9.0%	9.0%	9.0%	7.7%	6.8%

Source: MAS, Annual Report, various issues



Source: MAS, Annual Report, various issues; Singapore Department of Statistics, Yearly Statistics, various issues

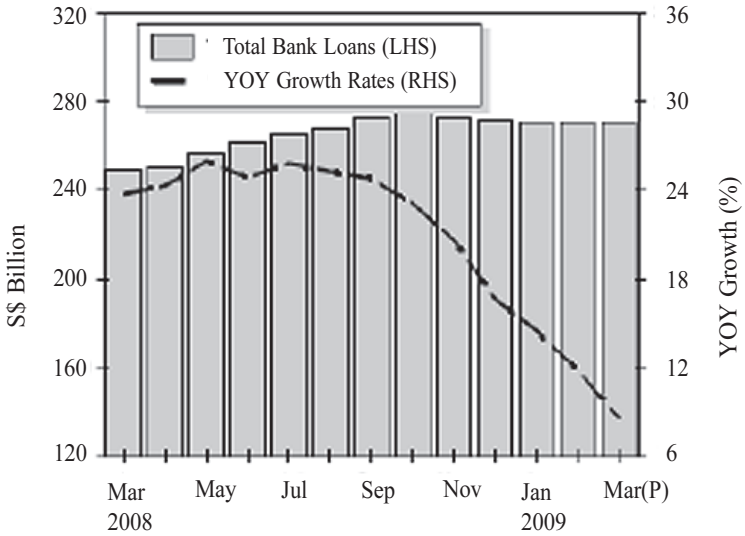
Chart 2: Equity/Total Assets Ratio



Source: MAS, Annual Report, various issues; Singapore Department of Statistics, Yearly Statistics, various issues

Whilst the banking sector has remained strong and healthy, it is not completely immune to risk aversion as evidenced in a number of banking activity indicators. The year-on-year growth rate of loans to non-bank customers of domestic banking units (DBUs) fell from about 26% in May 2008 to about 7% by March 2009, with the steepest falls after November 2008 (Chart 3). Overall, the interbank market was not badly affected and continued to function relatively smoothly but the three-month interbank rate spiked up from 1% to 2% between July and September 2008. It recovered and dropped to below 1% by November 2008 and rose again slightly in December and thereafter returned to normal (Chart 4).

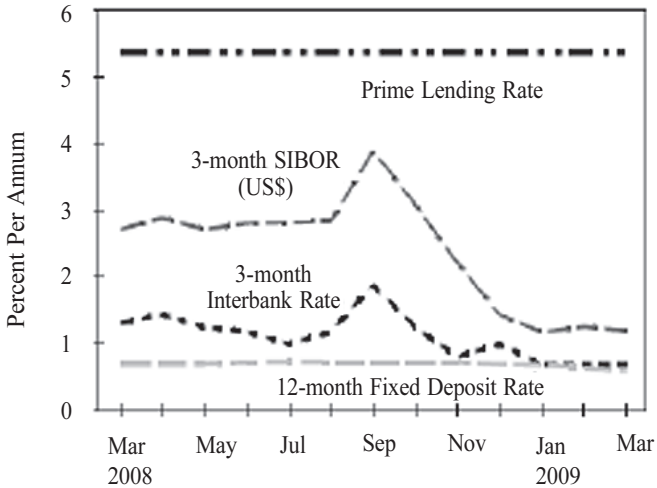
Chart 3: DBUs' Loans to Non-bank Customers



Note: (P) = preliminary estimate

Source: MAS, Monthly Statistical Bulletin, April 2009

Chart 4: Interest Rates

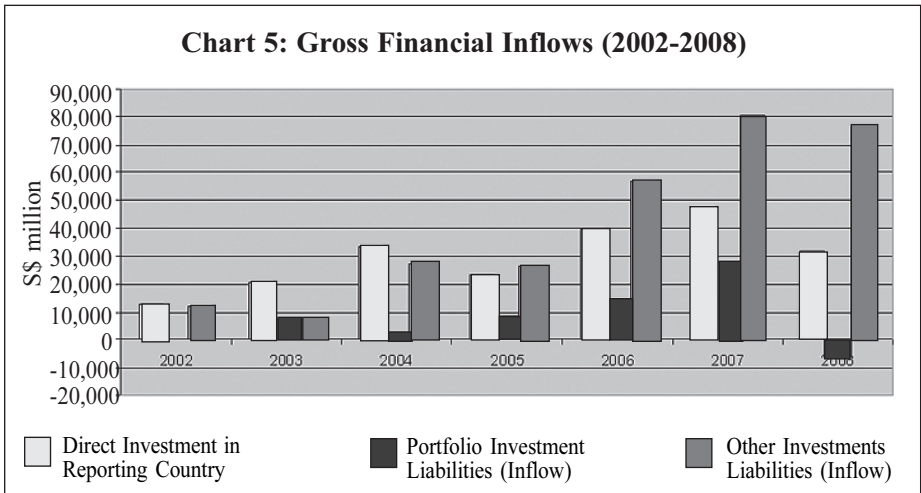


Source: MAS, Monthly Statistical Bulletin, April 2009

Equity Market and Portfolio Investment Flows

The most severe and immediate impact of the global financial crisis on Singapore is on its equity markets. Singapore’s equity markets have grown by leaps and bounds in line with its policy of financial liberalization and the deepening and broadening of its capital markets. Its stock market capitalization grew from \$98 billion in 1991 to \$776 billion in 2007 before falling to \$385 billion in 2008 (see Table 1). In terms of market capitalization to GDP, this ratio rose from 130% in 1991 to 319% in 2007.

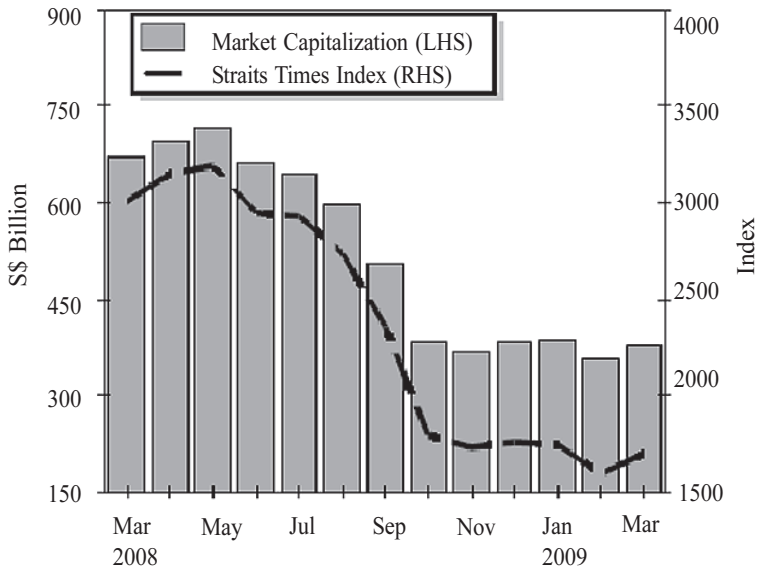
No information exists on the foreign share of Singapore’s stock market; some estimate it to be 40% or 50%. The average stock market capitalization of Singapore was \$500 billion between 2005 and 2008 (see Table 1) while the foreign reserves of the country stood at \$250 billion in 2008. Gross inflow of portfolio investments from foreign sources recovered strongly after 2002 though they remain highly volatile – jumping from \$391 million in 2002 to \$7.5 billion in 2003 and reaching a peak of \$28 billion in 2007 before plunging to an outflow of \$6.5 billion in 2008 – a swing of more than \$34 billion in one year (see Chart 5).



Source: Singapore Department of Statistics, Yearbook of Statistics, 2008; Monthly Digest of Statistics, March 2009

The Singapore stock market reflected this movement – the Straits Times Index rose from 2400 in mid-2006 to a high of 3800 at the end of 2007 before plunging over 50% to a low of 1600 by February 2009. This sharp drop no doubt had an impact on household wealth and consumption, as we shall see later.

Chart 6: Stock Market Capitalization and Straits Times Index



Source: MAS, Monthly Statistical Bulletin, April 2009

Impact on Balance of Payments

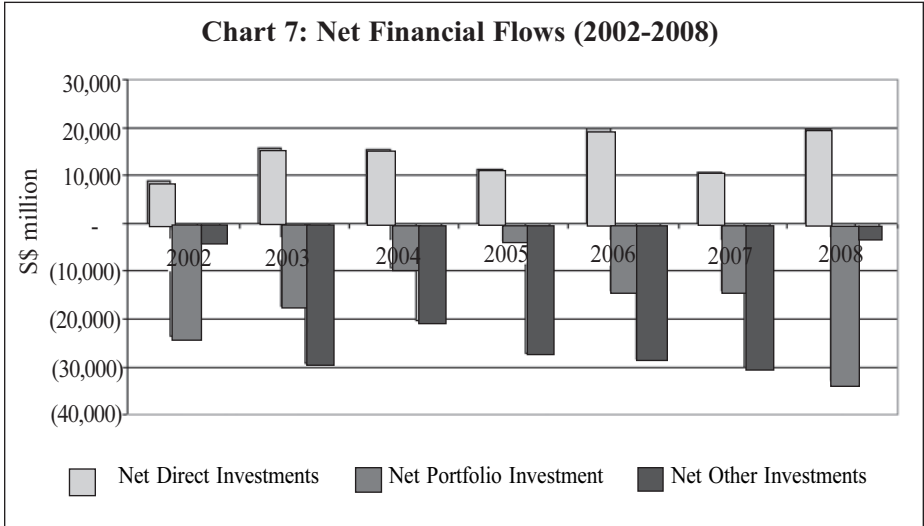
Table 4 provides an overview of Singapore’s balance of payments from 2002 to 2008. Singapore has enjoyed a positive and rising current account balance over all these years except in 2004 and in 2008 when the surplus dropped 35% over 2007. The current account surplus averaged 19% of GDP during this period, compared to 21% between 1998 and 2003. This surplus is mirrored in the financial account deficit, which, however, has not risen as

Table 4: Balance of Payments, 2002-2008

<i>S\$ million</i>	2002	2003	2004	2005	2006	2007	2008
Current Account Balance	19,919	37,612	30,821	37,075	47,295	59,092	38,176
Capital & Financial Account Balance	(18,737)	(31,329)	(14,703)	(21,428)	(22,779)	(33,917)	(16,259)
Overall Balance	2,286	11,775	20,469	20,397	26,996	29,297	18,531
CAPITAL & FINANCIAL ACCOUNT							
Net Capital Account	(286)	(292)	(310)	(335)	(367)	(390)	(435)
Net Direct Investments	8,723	15,627	15,256	11,630	19,865	10,688	19,520
Abroad	(4,169)	(4,694)	(18,258)	(11,555)	(19,450)	(36,861)	(12,632)
In Reporting Country (inflow)	12,892	20,321	33,514	23,185	39,315	47,549	32,152
Net Portfolio Investment	(23,537)	(17,492)	(9,236)	(5,485)	(14,207)	(14,360)	(32,784)
Assets (outflow)	(23,928)	(24,993)	(11,916)	(13,872)	(28,275)	(42,394)	(26,315)
Liabilities (inflow)	391	7,501	2,680	8,387	14,068	28,034	(6,469)
Net Other Investments	(3,636)	(29,172)	(20,412)	(27,238)	(28,069)	(29,856)	(2,560)
Assets (outflow)	(15,289)	(36,687)	(47,793)	(53,629)	(84,800)	(110,095)	(78,937)
Liabilities (inflow)	11,653	7,515	27,381	26,391	56,731	80,239	76,377

Source: Singapore Department of Statistics, Yearbook of Statistics, 2008; Monthly Statistical Digest, April 2009

much; the difference is reflected in the rising overall balance of payments and its foreign reserves that rose to US\$174 billion in 2008, equivalent to 6 months' imports. In other words, Singapore is a net exporter of capital (see Table 4).



Source: Ibid.

Direct Investments

Analyzing Chart 7, we see that the only category in the financial account that registered a net positive inflow is direct investment, ranging from \$8.7 billion (2002) to \$19.9 billion (2006). Singapore is not starved for foreign direct investment (FDI). In fact in 2007, Singapore's direct investments abroad reached \$37 billion (see Table 4). The stock of foreign direct investment in Singapore rose at an annual rate of 8.5% from \$195 billion to \$346 billion between 2000 and 2006, while its stock of direct investments abroad grew at 12.7% from \$98.3 billion to \$226.3 billion over the same period (see Chart 8).

Singapore's dependence on foreign direct investments is more for technology transfer, upgrading its industrial base, and building Singapore into a regional financial centre. This is evident from the composition of the

Chart 8: FDI in Singapore and Singapore's Direct Investment Abroad, 2000-2006

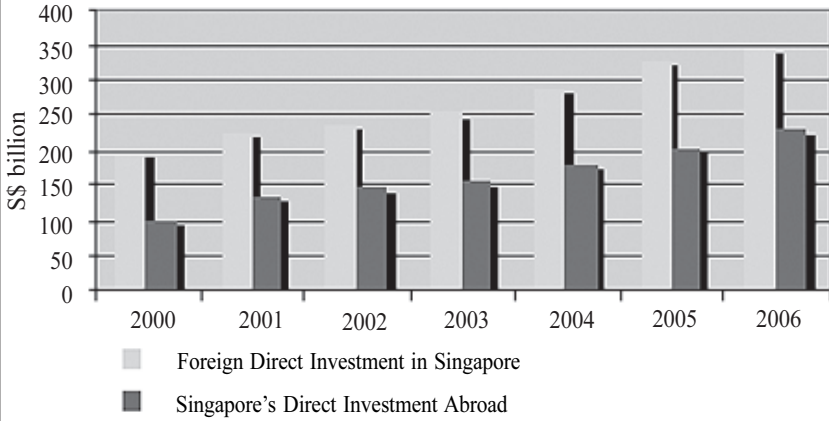
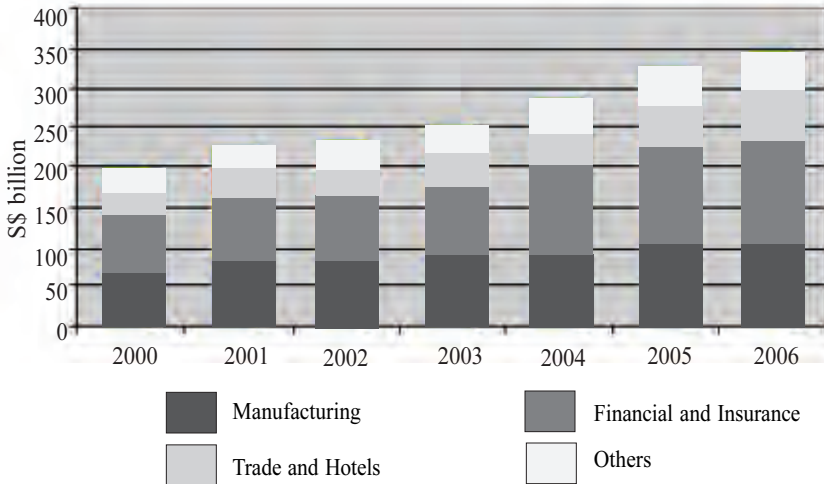


Chart 9: FDI in Singapore by Industry, 2000-2006



Source: Singapore Department of Statistics, Yearbook of Statistics, 2008, Tables 5.11 and 5.12

stock of foreign direct investments in the country, where 38% and 32% are invested in the financial services and manufacturing sectors respectively (see Chart 9).

Portfolio Investments

In terms of portfolio investments, Singapore is a persistent net exporter of capital. From 2002 to 2008, total portfolio investment assets (\$172 billion) were three times higher than portfolio investment liabilities (\$55 billion). (See Table 4.) Portfolio investment inflows by foreigners only recovered in 2002 and averaged \$8 billion annually between 2002 and 2008, reaching a high of \$28 billion in 2007 before reversing to an outflow of \$6.5 billion in 2008 at the height of the financial crisis. On the other hand, outflow of portfolio investments by Singaporeans abroad averaged \$25 billion yearly, with a peak of \$42 billion in 2007 when government-owned investment vehicles took the opportunity to invest in many distressed financial institutions in the US and Europe such as Citibank, Merrill Lynch, UBS, etc.

Singapore is well known for its two sovereign wealth funds – Temasek Holdings and Government of Singapore Investment Corporation (GSIC). For most years between 2000 and 2008, portfolio investment assets by official (government) institutions were more than those of private institutions and individuals. Because of the limited domestic investment opportunities, government and government-linked corporations have been active in overseas investments. Data on the types of investments and their performance are closely guarded except for occasional public announcements reported in the newspapers. However, the impact of the recent financial turmoil on the profits and assets of Singapore’s sovereign wealth funds has necessitated release by the government of some information to the public.

After its recent forays into the purchase of shares in financial institutions at the start of the financial crisis, Temasek Holdings Pte Ltd’s portfolio suffered substantial losses and its assets shrank by \$58 billion (31%) from March 2008 to November 2008. Temasek sold its 3.8% stake in Bank of America Corp from its acquisition of Merrill Lynch at a loss of US\$4.6

billion (*Star*, 2009a). As of July 31, 2009, with the global equities markets rally, Temasek's portfolio rebounded to \$172 billion from \$130 billion in March 2009; this was still 7% below the March 2008 peak of \$185 billion. Net profit for Temasek dropped 66% for the fiscal year 2008/09 (*Star*, 2009b). The report of the GSIC only states that its performance over the last 20 years till March 2008 (the peak) was 4.5% above world inflation (GSIC, 2008). No information on amount of investments was provided, though one report puts it at US\$300 billion (Brown, 2009).

Other Investments

Financial flows in the “other investments” category refer to flows through the banking system undertaken by banks, financial institutions, individuals and corporations. These transactions comprise mainly loans, deposits, inter-bank deals and inter-company debts, including those in the Asian Dollar Market. Of the three categories of financial flows – direct investments, portfolio investments and other investments – the last category is the most volatile, driven by financing requirements and interest rate sensitivity (MAS, 2004).

While net direct investments are consistently positive, net other investments are persistently negative due to the consistently large outflows of Singapore residents' deposits in ACU and foreign banks (see Table 4). Singapore is an international banking centre where the amount of assets in the non-domestic banking units, i.e., the Asian Currency Units (ACUs), is much larger than the assets in the domestic banking units; the ACUs' assets were US\$912 billion (\$1.3 trillion) versus DBUs' \$600 billion in 2008 (MAS, 2009). Huge amounts of bank deposits flow in and out of Singapore responding to interest rates, foreign currency movements and risk perception, accounting for the great volatility in this category of financial flows. The big surge in inflows of other investments in 2007 was in anticipation of appreciation in the Singapore dollar. On October 30, 2008 MAS and the US Federal Reserve established a six-month US\$30 billion swap facility designed to improve liquidity conditions and mitigate difficulties in obtaining USD funding. It aimed to reassure several multinational financial institutions with

global operations based out of Singapore that it has access to USD liquidity. This facility has been extended till February 2010 (ENP Newswire, October 31, 2008).

Another measure adopted by MAS to avoid erosion of bank deposits in Singapore's banking system was the introduction of the Deposit Insurance Scheme in October 2008. Under this scheme, the Singapore government has guaranteed all Singapore dollar and foreign currency deposits of individual and non-bank customers in banks, finance companies and merchant banks licensed by MAS until 31 December 2010. This guarantee is backed by \$150 billion of Singapore government reserves. MAS however did emphasize that this measure was taken solely as a response to similar guarantees extended by regional economies although Singapore's banking system continued to be resilient (MAS press release, October 16, 2008).

The volume of inflows of other investments has been much higher than that of foreign direct investments and portfolio investments particularly after 2005 (Chart 5). Likewise the volume of outflows of other investments is two to five times larger than the volume of direct and portfolio investment outflows. On a net basis, the "other investments" category is negative, i.e., more deposits and other assets are transferred out of the Singapore banking system than those coming in. Again, Singapore is a net exporter of capital in this category.

Quarterly Flows Since Mid-2007

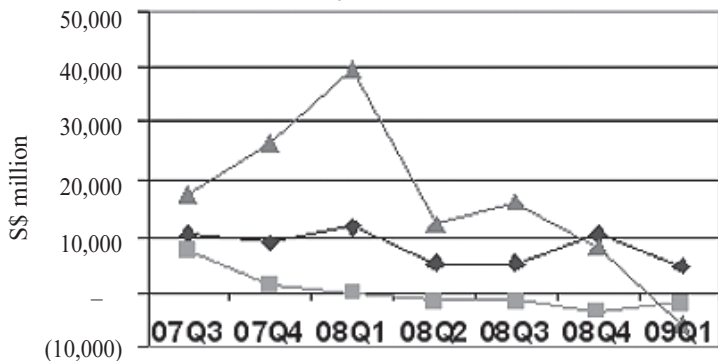
Table 5, together with Charts 10 and 11, give an overview of the balance of payments from Q3 2007 to Q1 2009. Table 5 shows that, first, despite the financial crisis, Singapore still registers a current account surplus though it has fallen 26% on a year-on-year basis in Q4 2008 – the most severe in recent years. But the current account surplus was not accompanied by an equivalent financial account deficit so that the overall balance was positive and reserves rising. Second, over this period, except for Q3 2008, net direct investments were positive and actually rose in Q4 2008 as foreign direct investments are more long-term-oriented and not as volatile. Third, there was net outflow in portfolio investment every quarter, which resulted more

Table 5: Quarterly Balance of Payments, 2007-2008

<i>SS million</i>	2007Q3	2007Q4	2008Q1	2008Q2	2008Q3	2008Q4	2009Q1
Current Account Balance	17,465	9,059	11,256	9,181	11,036	6,701	5,998
Capital & Financial Account Balance	(12,038)	1,045	2,795	(5,129)	(12,277)	(1,648)	(11,309)
Overall Balance	6,031	12,614	11,965	4,290	(2,141)	4,416	(3,747)
CAPITAL & FINANCIAL ACCOUNT							
Net Capital Account	(109)	(91)	(100)	(97)	(123)	(114)	(126)
Net Direct Investments	1,522	248	7,940	4,101	(638)	8,117	2,465
Abroad	(9,012)	(8,605)	(3,758)	(1,062)	(5,676)	(2,135)	(2,091)
In Reporting Country (FDI)	10,534	8,853	11,698	5,163	5,038	10,252	4,556
Net Portfolio Investment	(2,633)	(11,951)	(5,942)	(8,048)	(7,534)	(11,257)	(11,378)
Assets (outflow)	(10,313)	(13,458)	(5,662)	(6,776)	(6,094)	(7,782)	(9,386)
Liabilities (inflow)	7,680	1,507	(280)	(1,272)	(1,440)	(3,475)	(1,992)
Net Other Investments	(10,818)	12,841	900	(1,084)	(3,981)	1,606	(2,270)
Assets (outflow)	(28,369)	(13,598)	(38,879)	(13,436)	(20,091)	(6,529)	3,464
Liabilities (inflow)	17,551	26,439	39,779	12,352	16,110	8,135	(5,734)

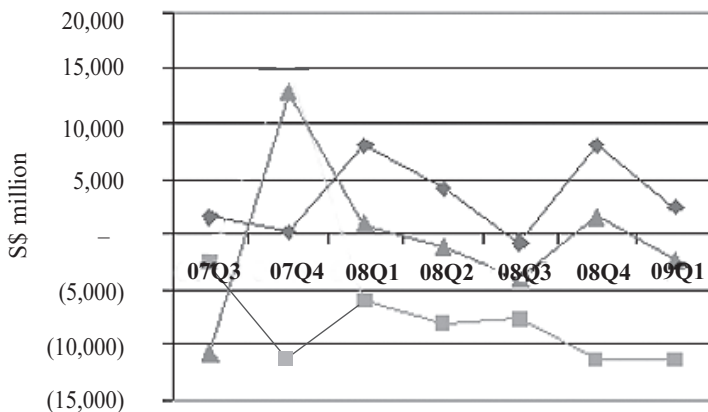
Source: Singapore Department of Statistics, Yearbook of Statistics, 2008; Monthly Digest of Statistics, March 2009

Chart 10: Quarterly Gross Financial Inflows



- ◆ Direct Investment in Reporting Country (FDI)
- Portfolio Investment Liabilities (Inflow)
- ▲ Other Investments Liabilities (Inflow)

Chart 11: Quarterly Net Financial Flows



- ◆ Net Direct Investments
- Net Portfolio Investments
- ▲ Net Other Investments

Source: Singapore Department of Statistics, Yearbook of Statistics, 2008; Monthly Digest of Statistics, April 2009

from Singapore's opportunistic purchase of foreign equities during the crisis than from the repatriation of foreign funds in the domestic stock market. Foreign portfolio investments started to turn negative only from Q1 2008 onwards and reached -\$3.5 billion in Q4 2008. Fourthly, the net flows of other investments are more volatile, rising sharply in Q4 2007 and then plunging into negative territory in the second half of 2008 due to the large outflow of Singapore's bank-related deposits and assets abroad although inflows were also sizeable.

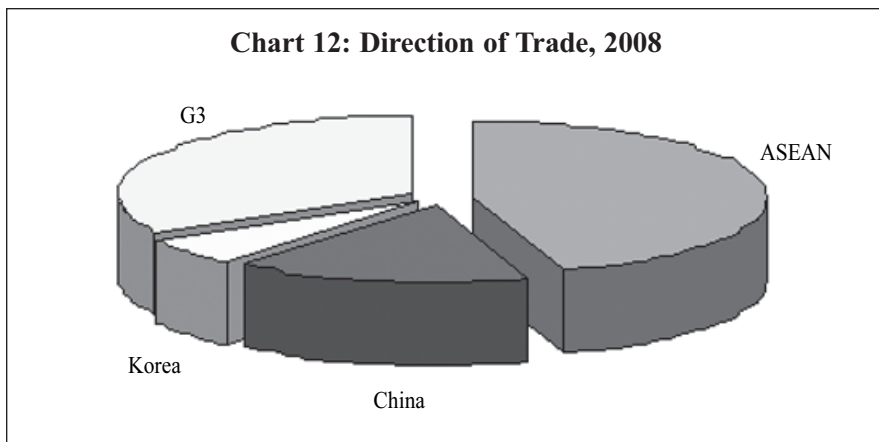
Impact on Trade

In the Asian crisis, growing current account deficits in several Asian economies such as Thailand, Indonesia and Malaysia allowed speculators to attack their currencies, resulting in massive devaluation that triggered a financial and economic crisis. In contrast, most Asian economies are now enjoying comfortable current account surpluses, healthy foreign reserves and strong currencies. Nevertheless they have not been spared the fallout of the present crisis transmitted through trade channels. This time the impact came through the collapse in external demand for Asian exports. In 2008, 33% of Singapore's exports were absorbed by the G3 (Japan, the US and Europe), with the US alone accounting for 14%; China and South Korea absorbed another 22%; three of Singapore's fellow members in the Association of South-East Asian Nations (ASEAN) – Malaysia, Thailand and Indonesia – took 45% of its total exports (see Chart 12).

Singapore's current account balance dropped sharply from \$16.6 billion (Q1 2007) to \$6.7 billion (Q4 2008), led by the steepest fall in the net goods balance while the net service balance held steady and the negative net income balance actually improved (see Chart 13).

Singapore is a small country with few options except to grow outward. In 2007, its exports and imports were 254% and 225% of GDP respectively. Chart 14 shows the structural changes in Singapore's economy. Net exports as a percentage of GDP rose from 10% in 1990 to 30% in 2006 before plunging to 20% in 2008. During this same period between 1990 and 2008, private consumption declined in importance from 47% to 39%; gross capital

Chart 12: Direction of Trade, 2008



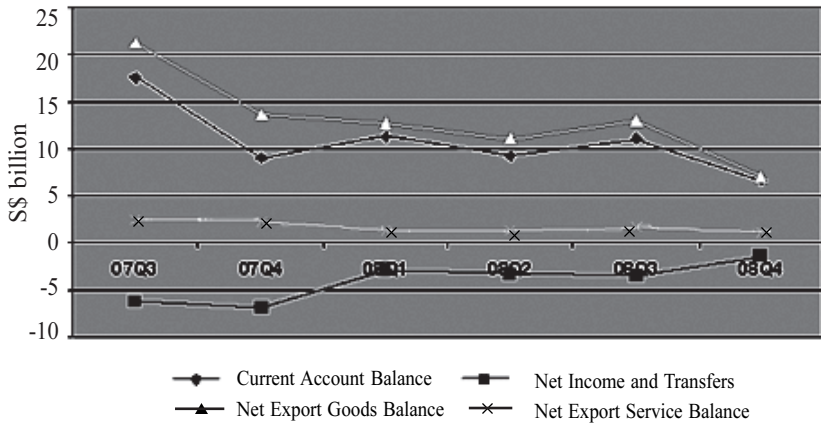
Source: Singapore Department of Statistics, Monthly Digest of Statistics, March 2009, Table 10.3

formation likewise dropped from 34% to 29%, while public consumption remained stable at around 10%. Hence net exports became a major driver of growth. The downside to this is that exports are also the most vulnerable in times of external recession and will drag the economy into the doldrums.

The US recession started at the end of 2007; its impact on Singapore's trade began to be felt in Q4 2007. Net exports declined 11% on a year-on-year basis in that quarter and then dropped precipitously in the second half of 2008 (see Table 6 and Chart 15). The deterioration in net exports was caused by imports declining more slowly than exports.

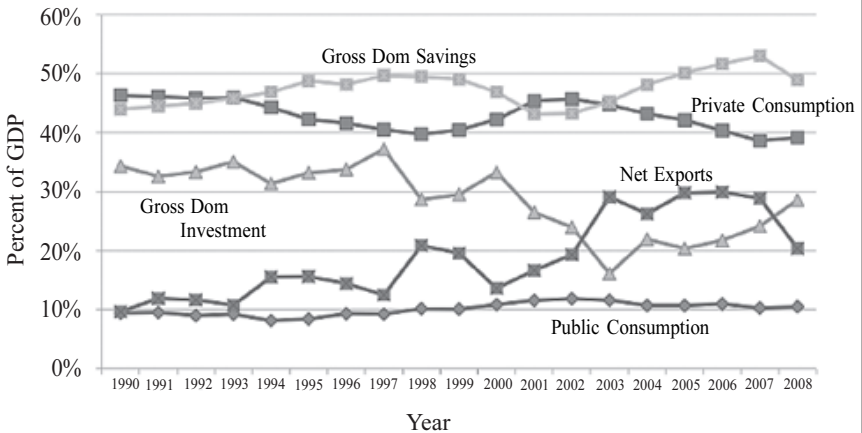
Which sectors were most affected? Three major sectors accounted for 85% of Singapore's exports in 2007: electronics and electrical (55%), mineral fuels and crude materials (18%), and chemicals and chemical products (12%). Total exports actually rose 5.8% in 2008 while two sectors registered negative growth: -12.8% for chemicals and -6% for electronics (see Chart 16). As stated, the contraction came in late 2008 and early 2009. Between September 2008 and February 2009, total exports declined 36%, led by the drop in mineral fuels exports (52%), followed by electronics (42%), manufactured goods (35%), and chemicals and chemical products (26%) (see Chart 17).

Chart 13: Quarterly Current Account Balance



Source: Ibid.

Chart 14: GDP Composition, 1990-2008



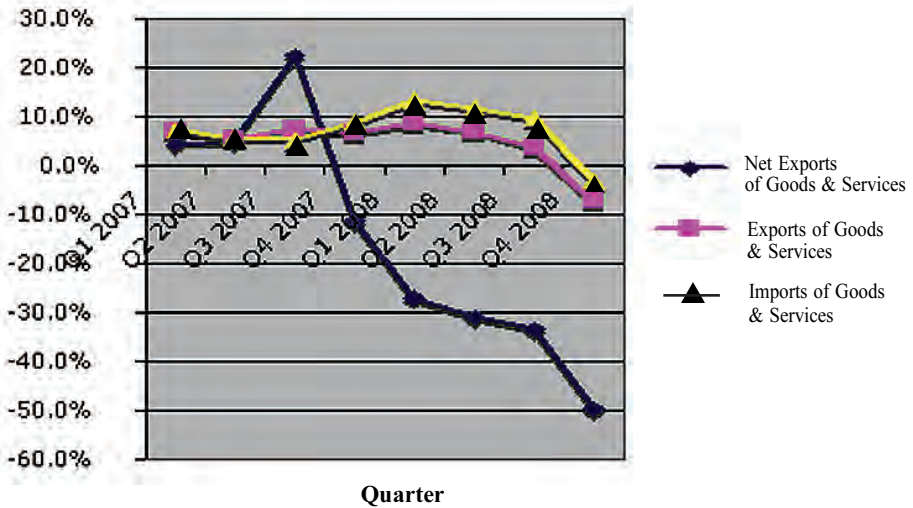
Source: ARIC (Asian Regional Integration Centre) database of the Asian Development Bank; Singapore Department of Statistics, Yearbook of Statistics, various issues

Table 6: Main Economic Indicators, 2007-2008

S\$ billion	2007				2008				2009	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q1
<i>Constant Price - 2000</i>										
Real GDP	55.4	57	59.4	59	59.1	58.5	59.4	56.6	53.1	53.1
Private Consumption	21.5	22.3	22.1	22.6	22.5	23.4	23.1	22.8	21.4	21.4
Public Consumption	7.8	4.5	5.2	5.9	9	4.7	5.7	5.9	8.3	8.3
Gross Capital Formation	13.8	14.3	14.5	17.2	17.9	17.7	16.4	15.4	15	15
Net Exports of Goods & Services	15.5	16.1	20.9	13.9	11.3	11.1	13.9	7	7	7
Exports of Goods & Services	140.1	141.6	150.7	150.5	152.5	151.3	156.2	139.5	122.4	122.4
Imports of Goods & Services	124.6	125.5	129.8	136.6	141.2	140.2	142.3	132.5	115.4	115.4
<i>Growth Rates % (Year-on-Year)</i>										
Real GDP	7.00%	9.10%	9.50%	5.40%	6.70%	2.60%	0.00%	-4.10%	-10.20%	-10.20%
Private Consumption	2.40%	5.40%	5.70%	5.10%	4.70%	4.90%	4.50%	0.90%	-4.90%	-4.90%
Public Consumption	0.30%	3.90%	0.70%	5.10%	15.40%	4.40%	9.60%	0.00%	-7.80%	-7.80%
Gross Capital Formation	21.40%	27.60%	17.10%	16.50%	29.70%	23.80%	13.10%	-10.50%	-16.20%	-16.20%
Net Exports of Goods & Services	4.30%	4.80%	22.30%	-11.50%	-27.10%	-31.10%	-33.50%	-49.60%	-38.10%	-38.10%
Exports of Goods & Services	7.00%	5.40%	7.40%	6.60%	8.90%	6.90%	3.60%	-7.30%	-19.70%	-19.70%
Imports of Goods & Services	7.30%	5.50%	5.40%	8.80%	13.30%	11.70%	9.60%	-3.00%	-18.30%	-18.30%

Source: CEIC; Ministry of Industry and Trade; Singapore Department of Statistics, Monthly Digest of Statistics, August 2009

Chart 15: Quarterly Year-on-Year Growth in Exports and Imports (2007-2008)



Source: Ibid.

Impact on Other Sectors of Real Economy

The transmission flowing from the trade and finance channels is working its way into the real economy, as manifested in the industrial production index (IPI). From March 2008 to February of 2009, the IPI for the whole manufacturing sector dropped 28%. The hardest hit was the electronics sector that fell 40%, followed by the chemicals sector (33%). Even the wearing apparel and textiles sectors fell by 24% each (see Chart 18).

As industrial production fell, business confidence dimmed and investments declined. The Singapore Department of Statistics (SDOS, 2009c:Table 5.1) shows negative sentiments for various indicators for Q4 2008 – general business expectations were down 57%, number employed fell 28%, output was down 52% and new orders received showed a decline of 39%. Cessation of businesses rose by 14% on a year-on-year basis to 10,479 in 2008, with the largest increases in restaurants (58%), professional services (15%) and financial services and manufacturing (9% each) (SDOS, 2009c:Table 6.2).

Chart 16: Year-on-Year 2008 Export Growth

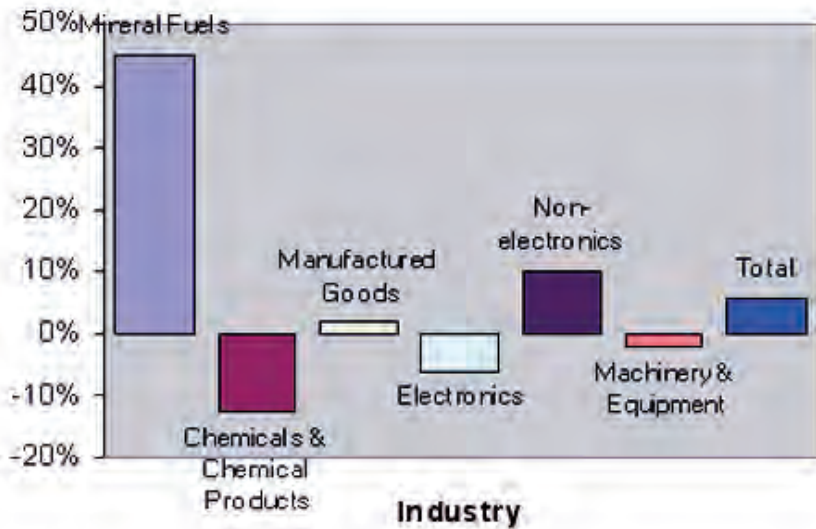
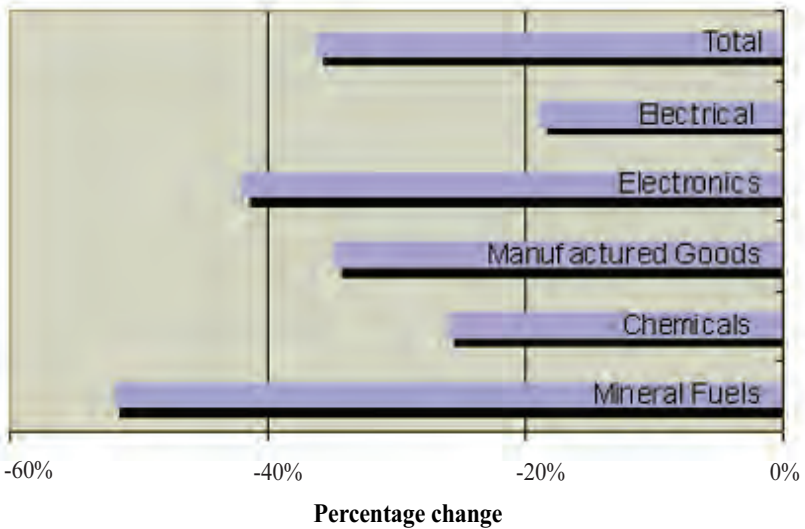
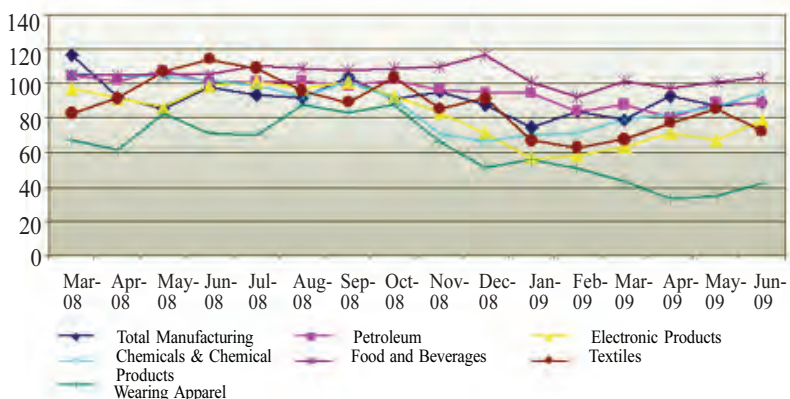


Chart 17: Decline in Exports (Feb 09 vs. Sep 08)



Source: Singapore Department of Statistics, Monthly Digest of Statistics, March 2009, Table 10.5

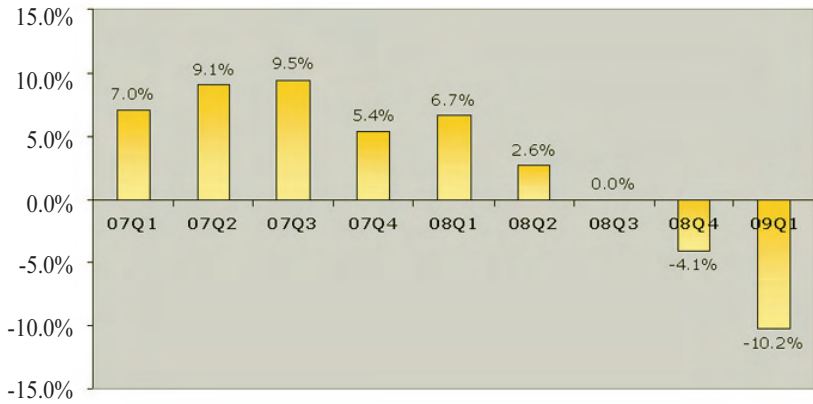
Chart 18: Industrial Production Index (Mar 08-Jun 09)



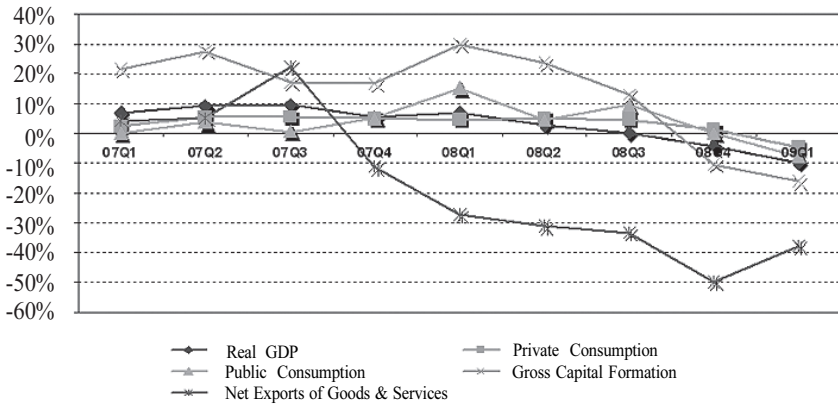
Source: Singapore Department of Statistics, Monthly Digest of Statistics, August 2009, Table 7.1

All these are reflected in the macroeconomic indicators, with real GDP growth falling from 6.7% in Q1 2008 to -4.1% in Q4 2008 on a year-on-year basis (see Table 6 and Chart 19). The latest release shows that GDP contracted 10.2% in Q1 2009. Likewise the real growth rate for gross capital formation plummeted on a year-on-year basis from 30% in Q1 2008 to -10% in Q4 2008. The sharpest drop was in net exports growth, which fell from -27% to -50% over the same period. Similarly, private consumption and public consumption growth rates also fell, though less markedly at 0.9% and 0% respectively in Q4 2008. In terms of absolute numbers, gross capital formation dropped from \$17.9 billion to \$15.4 billion between Q1 2008 and Q4 2008, private consumption went up slightly from \$22.5 billion to \$22.8 billion, while public consumption declined from \$9 billion to \$5.9 billion. Given the depth of the economic crisis, the drop in public spending in 2008 was quite unexpected. However, in January 2009, the government introduced a significant stimulus package to the tune of \$20.5 billion to prevent the recession from deepening, pushing the budget deficit to a record \$8.7 billion (3.5% of GDP).

Chart 19: Real GDP Growth Rate (Quarterly Year-on-Year)



**Chart 20: Key Economic Indicators 07Q1 - 09Q1
(Quarterly Year-on-Year Growth)**

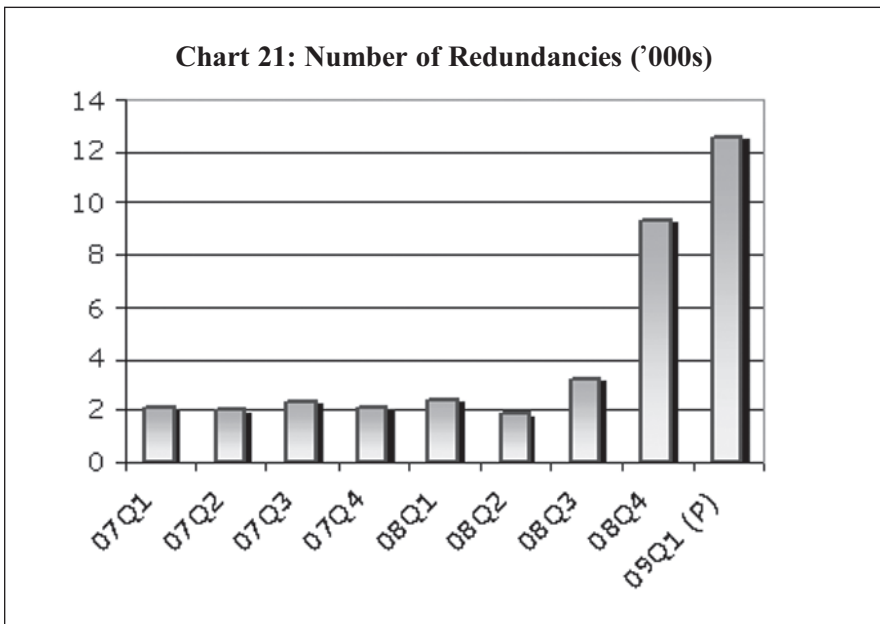


Source: CEIC; Ministry of Industry and Trade; Singapore Department of Statistics, Monthly Digest of Statistics, April 2009

Labour and Employment

The decline in economic activity took its toll on employment although the impact was not as severe compared to the 1998 and 2001 recessions due to a series of measures taken by the government under its stimulus package. The number of redundancies (retrenchment and early contract termination) for 2008 was 16,880 compared to 32,800 and 27,570 in 1998 and 2001. The number of redundancies climbed from 1,880 workers in Q2 2008 to 9,410 in Q4 2008 and an estimated 12,600 in Q1 2009 (see Chart 21). The impact may be felt more in 2009.

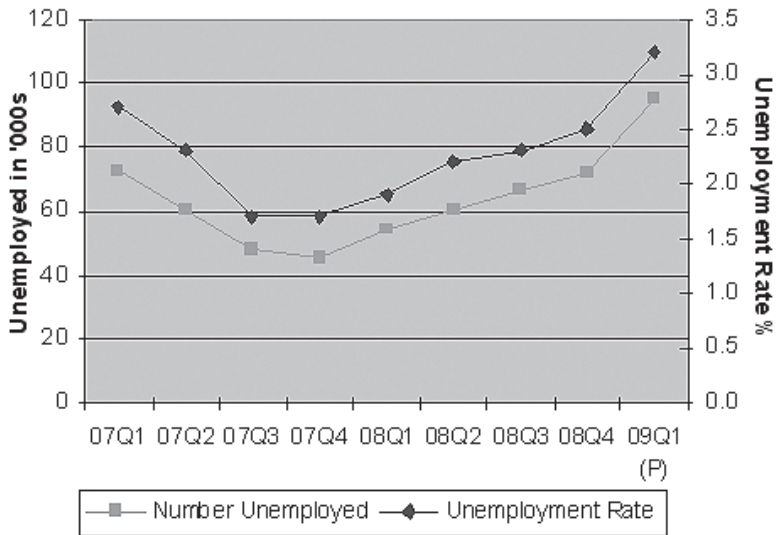
The rate of unemployment in Singapore has hovered between 2.5% (1998) and 4.0% (2003) in the last 10 years. In 2008, it averaged 2.2%, with the quarterly rate rising from 1.9% in Q1 to 2.5% in Q4 (Chart 22). The provisional unemployment rate for Q1 2009 is 3.2%, still below the high of 4.0% in 2003, although this may further rise in 2009. This time around, the



Note: (P) = preliminary estimate

Source: Ministry of Manpower website

Chart 22: Quarterly Unemployment Data



Note: (P) = preliminary estimate

Source: Ministry of Manpower website

government and industries took various steps to reduce the unemployment impact, such as introduction of the Jobs Credit Scheme in January 2009, whereby employers receive a 12% cash grant on the first \$2,500 of monthly wages for each employee on the Central Provident Fund (CPF) payroll in 2009. Many companies have also reduced the number of workdays per week and require employees to take compulsory leave in order to reduce operating costs. Hence the employment impact on the local workforce as of early 2009 has not been as severe as in the last few recessions, even though this is the deepest recession experienced in Singapore.

It should be noted that these numbers pertain to only Singaporeans and Singapore residents. Foreign labour forms a quarter of Singapore's labour force. Many multinational companies have either laid off or sent home their expatriate staff. Anecdotal evidence from falling rental and apartment occupancy rates, and smaller numbers of taxi passengers, all point to a significant fall in employment.

The recession has hit hardest one class of labour that is most vulnerable, unprotected and less visible in society, namely, the lower-income and low-skilled foreign workers who number in the hundreds of thousands doing the tough jobs in construction, handling of cargo, domestic help, etc. Non-governmental organizations have reported a huge increase in the number of these workers being laid off and who have nowhere to go and no place to eat. These organizations have offered free meal facilities in the Little India district and these places are packed to the brim. These volunteers report of many newly arrived workers from South Asia who had borrowed and paid \$10,000 to agents to work in Singapore, only to find themselves without jobs and compensation. Meanwhile their debt is piling up at home and they have no resources to return. The human toll on this segment of the labour force that is most expendable is tremendous.

Chapter 3

POLICY RESPONSES

Monetary Policy Response

SINGAPORE continually seeks to maintain a balance between inflation, on the one hand, and export competitiveness and growth, on the other hand, in its exchange rate policy. Traditionally, its exchange rate weakens during periods of crisis but at a rate that continues to maintain confidence in its currency.

We have seen from the economic data presented in the earlier sections that the full impact of the current financial crisis was not felt until mid-2008. In its April 2008 Monetary Policy Statement, MAS decided to re-centre the S\$ exchange rate band and continued with its four-year policy of gradual appreciation of the S\$ (upward shift in the policy band). MAS shifted its policy stance to a zero percent appreciation of the policy band in October 2008 with no re-centring of the band or change to its width. However, MAS stated that it stood ready to intervene to dampen excessive volatility in the S\$ should this become necessary.

On April 19, 2009, MAS decided to re-centre the exchange rate policy band to the prevailing level of the S\$ exchange rate. It said, “MAS will keep the zero per cent appreciation path. The width of the band will remain unchanged. The Singapore economy continues to be anchored by sound fundamentals and a resilient financial system. There is no reason for any undue weakening of the Singapore dollar.” This response was different from its response to the Asian crisis and SARS outbreak when the S\$ was allowed to depreciate. The S\$ has depreciated slightly against the USD, yen and euro

but appreciated against the regional currencies, reflecting strong fundamentals. Therefore we see that the exchange rate was on an appreciating stance when the crisis broke out and only shifted to a neutral/depreciating stance when the Singapore economy was hit by the plunge in exports and inflation had started to trend downwards.

Fiscal Policy Response

This crisis is no doubt the most severe shock to Singapore's economy since its independence, and in January 2009, the government unveiled a huge and rather innovative stimulus package amounting to \$20.5 billion. This would result in a budget deficit of \$8.7 billion or 3.5% of its GDP, which the country can well afford given its past budget surplus and huge reserves.

The package, termed the Resilience Package, has four goals – saving jobs, enhancing competitiveness of firms and workers, income relief for the lower classes, and strengthening physical and social infrastructure. Several policy measures have been instituted to achieve the goals. The first is a Jobs Credit Scheme of \$5.1 billion whereby the government subsidizes employers by paying 12% of the first \$2,500 of each employee's monthly wages; this should help in avoiding worker layoffs. The second policy measure, aimed at ensuring continued flow of credit to businesses, is a Special Risk Sharing scheme for bank loans whereby the government assumes 80% of risks on private bank loans of up to \$5 million. The third measure is income tax relief to businesses through a reduction in corporate tax from 18% to 17%. Fourth, to strengthen workers' competitiveness, the government will pay up to 90% of retraining fees of workers. Fifth, the government will spend \$4.4 billion on improving physical infrastructure, health, housing and other facilities. Finally, cash handouts to lower-income households will be raised by 50% (Kennedy, 2009; Lim, 2009).

The first two policy measures aim at tackling the supply side of the equation by improving competitiveness and ensuring that businesses have enough cash flow and credit to continue operations. The demand side is addressed through the normal fiscal stimulus pump-priming plus handouts

to the distressed, with the latter being a rare move for a government that is loathe to introduce social welfare schemes. However, there is still no cover for the unemployed; although the purpose of the Jobs Credit Scheme is to minimize retrenchment, the unemployment rate is nevertheless still expected to rise.

Chapter 4

CONCLUSIONS AND POLICY IMPLICATIONS

SINGAPORE stands out as a successful model of an intermediate foreign exchange regime as opposed to corner solutions. Instead of a big-bang approach to financial and capital account liberalization, it implemented the process gradually, not necessarily in rigid sequential stages, but in a pragmatic manner. Policy changes were introduced whenever the economic authorities faced specific challenges, as in 1981 when they decided to use the exchange rate as the main instrument to conduct monetary policy; this was then accompanied by the non-internationalization of the currency by restricting lending in the Singapore dollar for speculative purposes. Even the non-internationalization policy was eventually whittled away as conditions called for the development of the country's domestic capital markets.

How was Singapore able to maintain exchange rate flexibility without sacrificing exchange rate stability? Whilst the use of the basket, band and crawl exchange system no doubt conferred on Singapore the flexibility to deal with short-term volatility in its currency and to manage any long-term misalignment with underlying economic fundamentals, sound institutional and economic fundamentals were even more important in achieving financial stability. As Khor et al. (2007:21) wrote, "Increasingly, the key issue facing policymakers lies not in the particular choice of exchange rate per se, but in the institutions and policies underpinning it. The exchange rate system itself should therefore be viewed as a sort of 'monetary overlay' on real economy foundations." They identified the following key support factors:

Firstly, sound and credible macro- and microeconomic policies that minimize vulnerability to short-term volatility include having strong foreign reserves followed by firm and credible actions taken to counter speculative attacks, with Singapore reserving the right, and having the possibility, to limit use of its currency for speculative transactions. Singapore has the advantage of strong fiscal and current account surpluses. At the public level, MAS has the necessary resources to focus on maintaining price stability and not worry about financing the government; at the private level, price and exchange rate stability with resultant low domestic interest rates discourage private borrowers from having to borrow in foreign currencies, thus avoiding currency mismatch. This lack of balance sheet weakness cushions the economy in times of crisis.

Secondly, Singapore uses monetary tools in conjunction with other, more direct measures to cope with economic challenges. Its strong political control allows it to extract flexibility in the factor markets. Hence at times, instead of tinkering with the REER, the government resorts to controlling wages, reducing contributions to the pension fund by employers or reducing taxes to maintain competitiveness.

Thirdly, Singapore has a sound banking system with a low loan-to-deposit ratio, low non-performing-asset ratio, strong capital adequacy and low exposure to currency mismatch, and a growing capital market to complement the banking sector. This is aided by strict regulatory and supervisory authorities. As a result of a compulsory savings scheme operated by the Central Provident Fund, Singapore has high aggregate savings, and with the present demographics, contributions to the fund generally exceed withdrawals (Tyabji, 1998:176).

Singapore has a track record of coping with externally generated crises aided by the above factors. Despite a strong financial system, its openness renders it unable to escape the consequences of any world economic downturn that work through the real sectors, as we are now witnessing.

The present crisis has exposed some fundamental weaknesses in the world financial system as well as the export-oriented growth model of many Asian countries. Though the latter has served these countries well over the last few decades, fundamental rethinking is required as to its strengths and

weaknesses. There are three major macroeconomic imbalances that underpin today's financial and economic crisis. The first is the extreme and unsustainable trade imbalances between exporting and importing countries, particularly between the United States and Asia. The second is the growing wealth and income imbalance between a super-rich minority and a vast majority with limited income. Over the past few decades, an increase in productivity in the United States has not been accompanied by an increase in real wages for the workers, resulting in a decline in their real income. The under-consumption of the majority was "resolved" through borrowing; hence household debt rose much more rapidly than income so that it reached 100% of the US GDP by 2007, contributing to the debt bubble. On the other hand, the rich with their excess savings parked their funds with bankers and financiers who invented fancy financial instruments to enhance their yields. These two processes contributed to financial instability. Third is the unhealthy imbalance between the financial sector and the real economy in the US. Finance at 20% of GDP has become the largest sector in the economy, twice the size of the second largest sector (trade). Finance also accounts for over 30% of the total corporate profits, compared to 20% for the manufacturing sector. These imbalances must be redressed.

Are these imbalances relevant to Singapore? Singapore is one of the countries with a large and persistent current account surplus. It has undergone three major phases in its current account balance history (MAS, 2004). (Refer to Chart 14.) The first phase was from 1965 to 1987 when the country had a persistent current account deficit averaging 9% of Gross National Income (GNI); the second phase was from 1988 to 1997 when it moved into a current account surplus averaging 12%; and the third phase from 1998 to the present with an average current account surplus of 21% (1998-2003) and 24% (2003-2008). In other words, Singapore has been having a growing current account surplus over the last 20 years.

After independence, Singapore embarked on rapid industrialization based on foreign investments and massive capital imports that contributed to the current account deficit. By the mid-1980s, however, Singapore had built up its industrial and export base and the country started to register a current account surplus. The current account surplus can be explained in

terms of the saving-investment (S-I) gap. This S-I gap in the second phase was driven by a surge in the saving rate and a stabilization of the investment rate. The saving rate rose from 20% in the 1970s to 40% in the 1980s due to demographic factors (such as a decline in the population dependency ratio and increased labour force participation) as well as prudent fiscal policies and the use of the CPF savings scheme. In the third phase, particularly after the Asian financial crisis, the investment rate declined to a low 20% while the saving rate rose and hovered around 50%. Between 1998 and 2003, there was a sharp drop in construction activity particularly after the housing bubble burst. Property prices only started to climb back after 2005, driving up domestic investments again.

Chart 14 also shows that private consumption has declined steadily from 46% (1990) to 39% (2008) of GDP, while gross domestic savings rose from 44% (1990) to 53% (2007). Private consumption in the late 1970s was even higher, in the region of 60% of GDP. While the decline in consumption is the obverse of the rise in savings, it is also related to the increasing disparity in income and wealth in Singapore.

Singapore has registered spectacular economic growth over the last three decades, with its real GDP rising from \$37.6 billion to \$233 billion (1980-2008) and its per capita income from \$10,405 to \$53,192 in the same period (SDOS, 2009a). However, this growth has been accompanied by rising inequality as evidenced in several indicators. Chia and Chen (2003) summarized various studies that showed inequality, as measured by the Gini ratio, declined in the 1970s and 1980s but rose in the 1990s. The ratio of average household income from work of the highest 20% households to the lowest 20% rose from 11.4x in 1980 to 20.9x in 2000 (Ibid:Table 12). The Gini index rose from 43.6 (1990) to 48.1 (2000) (SDOS, 2002:Table 4). This trend worsened in the 2000s. A report on a 2005 household survey by the Singapore Statistics Department revealed that the Gini index increased from 49.0 to 52.2 between 2000 and 2005 and that the monthly income of the bottom 20% of households dropped a cumulated 19.7% while that of the top 20% increased 13.6% (Yawning Bread, 2006). Various other reports have noted that Singapore has a First World per capita income level but an income distribution profile of a Third World country (Soon and Ong, 2001; SDOS,

2002; Lee, 2007). For example, Singapore's Gini index at 47.2 in 2006 is in league with the Philippines (46.1), Guatemala (48.3) and China (44.7), compared to countries like Japan, Korea and Taiwan at 24.9, 31.6 and 32.6 (Lee, 2007). Soon and Ong (2001) also showed that Singapore's remuneration share of GDP was 42% in 2000, lower than those in Hong Kong (circa 48%) and Taiwan (circa 51%) (cited in Chia and Chen, 2003:Figure 3). Singapore's strategy of achieving a high level of business competitiveness forces it to maintain a high profit-to-remuneration ratio (1.11) in comparison with other countries like Hong Kong (1.05), Taiwan (0.70), South Korea (0.82), Japan (0.66) and the United States (0.59) (SDOS, 1998). Profit is the largest income component of GDP, accounting for 47% in 1997 (Ibid:5).⁴

The low level of median household income at \$3,607 per month (for an average household size of 3.5) has to weigh down on private consumption, despite the high national saving rate coming mainly from the top half of the population. As noted, a large part (close to 50%) of GDP accrues to profits. However, unlike in the United States where depressed wage levels for the majority were counteracted by the high debt level households assumed, this did not happen in Singapore. Singapore's domestic market is small and investment opportunities are limited by the low level of consumption partly resulting from low level of income for a large segment of the population. Hence investments and growth are export-oriented.

This crisis offers an opportunity for the government to rethink its strategy of emphasizing purely on growth without much consideration for social equity issues. On the domestic front, Singapore's recent fiscal response to the crisis has included a component to stimulate demand by putting more purchasing power in the hands of the ordinary people. The government has extended its social safety net to the bottom half of the population in this economic crisis through its Resilience Package. The latest Department of Statistics report on "Key Household Income Trends 2008" shows that with the surplus sharing package in 2008, Singapore's Gini index dropped slightly for the first time

⁴ There are slight variations in the Gini index figures cited in different sources.

in 10 years from 48.9 to 48.1 (SDOS, 2009b). In general, however, Singapore's economic growth, as in the US, has been accompanied by widening wealth and income gaps. This issue has to be addressed in order to maintain sustainable economic growth.

Finally, on the international front, Singapore should reduce its dependence on the G3 and further strengthen its ties to the regional markets. Singapore, with its strong financial position, is in a good position to play a more active role than it has done in promoting regional cooperation in the fields of currency and regional integration.

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Appendix 1

Summary of MAS's exchange rate policy since 1990*

Late 1990s	Against the backdrop of subsiding inflation and stalling economic growth, MAS ended the decade-long trend of appreciation of the trade-weighted index (TWI) and eased policy to a neutral setting with the policy band centred on a zero appreciation path.
July 1997	Following the outbreak of the Asian financial crisis, MAS took steps to ease monetary policy and allowed the Singapore dollar to fluctuate in a flat and wider target band. Given the absence of domestic inflationary pressures, MAS allowed the currency to fall against the US dollar to maintain export competitiveness.
Mid-1999	MAS tightened policy by inducing a gradual appreciation of the TWI and shifted to a narrower, pre-crisis exchange band, given the favourable external environment, stability in international currency markets and a strong rebound in the domestic economy.
January 2001	MAS maintained a gradual appreciation of the TWI to keep inflationary pressures in check.
July 2001	The policy band centred on a zero appreciation path as a result of the weak external environment and global electronics downturn.

* Chow (2008) and Ngiam (2000)

September 2001	Due to uncertainty in the external environment and downside risks to the domestic outlook, policy bands were widened. When a degree of calm returned to the foreign exchange market, the narrower bands were restored but the neutral stance was maintained.
July 2003	In view of the downside risk in the external environment, MAS lowered the policy band by re-centring it at the current level of the TWI, while maintaining a zero appreciation path.
April 2004	Against a more favourable outlook for the domestic economy, and the risk of rising inflationary pressures, MAS announced a shift towards a gradual and modest appreciation of the TWI.
October 2007	With the rapid expansion of the domestic economy and rising inflationary pressures, MAS increased slightly the slope of the TWI policy band while maintaining a modest and gradual appreciation of the band.

Appendix 2

Summary of MAS's non-internationalization policy*

- 1983 The non-internationalization policy was codified into MAS Notice 621, whereby access to the Singapore dollar was restricted for both residents and non-residents. Banks were required to consult with MAS before considering S\$ credit facilities greater than \$5 million to non-residents or to residents where proceeds of the loan were to be used outside Singapore. This was applicable to both bank and non-bank customers.
-
- 1992 Amendments were made to MAS Notice 621 to lift the consultation requirement for extension of S\$ credit facilities of any amount where the funds were to be used to support economic activities in Singapore. Banks were banned from extending S\$ financing for activities which had no bearing on Singapore (including portfolio investments by non-residents outside Singapore, non-residents' equity stake in Singapore companies and third-country trade controlled by non-resident companies). All other activities required prior consultation with MAS.
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- 1998 In conjunction with an extensive financial sector liberalization programme, the new MAS Notice 757 replaced MAS Notice 621, whereby all restrictions on residents were lifted; some restrictions on non-residents in relation to arranging S\$ equity listings and bond issues of foreign companies were relaxed.
-

* Adapted from Chow (2008)

1999	To foster the development of Singapore capital markets, banks were allowed to engage in a wider range of activities – namely, to transact all S\$ interest rate derivatives with non-residents freely and arrange S\$ equity listing for foreign companies.
2000	Only measures to limit access to the Singapore dollar for speculative activity remained. Banks were allowed to freely extend S\$ credit facilities to non-residents for investment purposes in Singapore and to fund offshore facilities provided the proceeds were first swapped into foreign currency before remitting abroad.
2002	All individuals and non-financial institutions were exempted from the S\$ lending restrictions. Non-resident financial entities were permitted to engage in a wide range of derivative transactions.
2004	Non-resident non-financial issuers of S\$ bonds and equities were no longer required to swap their S\$ proceeds into foreign currencies before remitting them abroad.

FINANCIAL LIBERALIZATION AND THE IMPACT OF THE FINANCIAL CRISIS ON SINGAPORE

As one of the most developed economies in Asia, Singapore's success is built on an outward-looking growth model driven by exports, foreign investment and international financial flows. A key element in this externally oriented strategy has been the exchange rate policy. This paper looks, among others, at how Singapore's "basket, band and crawl" exchange rate regime has helped it to manage short-term currency fluctuations and to redress currency misalignments with underlying economic fundamentals.

However, it is the very openness of the Singapore economy which also renders it vulnerable to shocks originating abroad – and the present global financial crisis is no exception. As documented in this paper, Singapore has experienced its sharpest economic downturn in over two decades as a result of the crisis. With exports plummeting, business confidence taking a hit and foreign portfolio capital exiting its equity markets, the economy contracted and unemployment climbed up.

The crisis has exposed the limitations of Singapore's pronounced dependence on the external sector, a dependence which arises from a small domestic market marked by sizeable income and wealth inequalities. A more sustainable growth path would entail narrowing these disparities, this paper contends, as well as reducing reliance on industrial-country markets in favour of strengthened regional economic ties.

MICHAEL LIM MAH-HUI is a senior fellow at the Socio-economic and Environmental Research Institute (SERI) in Penang, Malaysia. He was previously a post-doctoral fellow at Duke University and Assistant Professor at Temple University in the US, and an international and investment banker.

JAYA MARU is a financial services professional based in Singapore. She has provided financial and business advisory services to leading corporations and government agencies.

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ISBN 978-983-2729-93-8



9789832729938