



Monetary Authority of Singapore

macroeconomic ●

# review

economic policy department

Volume IV, Issue 1

April 2005



macroeconomic ●



# review

**Volume IV, Issue 1**  
**April 2005**

Economic Policy Department  
Monetary Authority of Singapore

ISSN 0219-8908

Published in April 2005

Economic Policy Department  
Monetary Authority of Singapore

<http://www.mas.gov.sg>

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Printed by Sydney Press Indusprint (S) Pte Ltd

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## LIST OF ABBREVIATIONS

ADM	Asian Dollar Market
BCSR	business cycle-sensitive revenue
BOJ	Bank of Japan
BOT	Bank of Thailand
bpd	barrels per day
bps	basis points
COE	Certificate of Entitlement
CPF	Central Provident Fund
CPI	consumer price index
CY	Calendar Year
DLI	Domestic Liquidity Indicator
DOS	Department of Statistics
ECB	European Central Bank
EDB	Economic Development Board
EPD	Economic Policy Department
FDI	foreign direct investment
Fed	US Federal Reserve
FI	Fiscal Impulse
FOMC	Federal Open Market Committee
FY	Financial Year
GDP	Gross Domestic Product
GST	Goods and Services Tax
HDB	Housing and Development Board
HES	Household Expenditure Survey
IMF	International Monetary Fund
IP	intellectual property
IPO	initial public offering
LTA	Land Transport Authority
MMS	Monetary Model of Singapore
MNC	multinational company
m-o-m	month-on-month
MPS	Monetary Policy Statement
MTI	Ministry of Trade and Industry
NEA	Northeast Asian
NEER	nominal effective exchange rate
NIEs	Newly Industrialising Economies
NODX	non-oil domestic exports
NORX	non-oil re-exports
OECD	Organisation for Economic Cooperation and Development
OPEC	Organisation of the Petroleum Exporting Countries
q-o-q	quarter-on-quarter
RCA	Revealed Comparative Advantage
REER	real effective exchange rate
SA	seasonally adjusted
SAAR	seasonally adjusted annualised rate
Sars	Severe Acute Respiratory Syndrome
SGS	Singapore Government Securities
STB	Singapore Tourism Board
STI	Straits Times Index
ULC	unit labour cost
USCI	Unit Services Cost Index
WDA	Workforce Development Agency
WTI	West Texas Intermediate
YA	Year of Assessment
y-o-y	year-on-year

# Preface

The *Macroeconomic Review* is published twice a year in conjunction with the release of the MAS Monetary Policy Statement (MPS). The *Review* documents the Economic Policy Department's (EPD) analysis and assessment of macroeconomic developments in the Singapore economy, and shares with market participants, analysts, and the wider public, the basis for the policy decision conveyed in the MPS.

The production of the *Review* is coordinated by EPD and incorporates contributions from the External Economies (Sections 1.1 and 4.1) and Financial Surveillance Divisions (Sections 2.1 and 2.2) of the Macroeconomic Surveillance Department.

The *Review* may be accessed in PDF format on the MAS website:  
[http://www.mas.gov.sg/masmcm/bin/pt1Macroeconomic\\_Review.htm](http://www.mas.gov.sg/masmcm/bin/pt1Macroeconomic_Review.htm).

The *Review* may also be purchased at major bookstores, online (<http://asp.marketasia.com.sg/Spore/sporeindex.asp>), or on an annual subscription basis (details can be found on the last page).

# Highlights

The Singapore economy is expected to expand at a more modest pace this year, following the robust rebound of 2004. The economic slowdown will take place against the backdrop of a moderation in the global economic growth and a mini-downturn in key IT markets in the first half of the year.

Despite the slowdown, Singapore's GDP growth will remain close to its potential output path, with production and trade activity sustained at a relatively high level following the sharp upturn in 2004. With employment continuing to grow, the labour market is expected to tighten further as the unemployment rate eases back to its natural rate of 3-3.5% by year's end.

In this issue of the *Review*, we consider various aspects of the economy's recent performance, with a focus on factors that will determine the outlook going forward. Chapter 1 summarises the recent performance of the economy against the backdrop of recent developments in the global economy, while Chapter 2 provides an overview of financial market developments. Chapter 3 looks at wage-price dynamics and identifies the contributing factors to the increase in consumer prices over 2004. In this chapter, we also assess the underlying cost conditions faced by the services industries in the Singapore economy. Our estimates show that the unit services cost index (USCI) has risen modestly over 2004, largely due to some increases in wages and intermediate service inputs, such as transportation, advertisement and other administrative charges.

The labour market enjoyed a strong rebound last year, with 71,400 jobs created, more than making up for the 35,900 job losses over 2001-2003. Following a delayed response of the labour market to the economic upturn – with a greater portion of the change in output initially reflected in productivity growth rather than job gains – employment creation had picked up and was fairly broad-based across the manufacturing and services sectors, and among both local and foreign workers. In particular, the services industries have emerged as an important source of employment for locals.

In Chapter 4, we assess the outlook for the Singapore economy in the context of developments in the global economy and the IT cycle. Clearly, the prospects for the Singapore economy will depend to a large extent on the strength of IT demand, particularly in the second half of the year. We consider the outlook for the global IT sector, and note the relatively more efficient response by semiconductor producers to the unintended build-up in inventory in the present cycle compared to the past. The most recent indicators appear to suggest some early signs of levelling off in the industry, although uncertainty remains as to the strength of the upturn in the second half of the year. Chapter 4 also contains a short study on the medium-term opportunities offered by digital imaging technologies within consumer electronics.

Finally, the *Review* contains a special feature analysing intra-ASEAN and East Asian trade patterns over the period 1996-2003. Using detailed data from the UN COMTRADE statistics, it is evident that market forces have led to the emergence of cross-border production networks and forged increased trade linkages among the regional economies. These competitive forces have generated an increase in intra-industry trade around specific industry clusters, including electronics, automobiles and oil.

The next issue of the *Review* will be released in October 2005.

Economic Policy Department  
Monetary Authority of Singapore  
22 April 2005





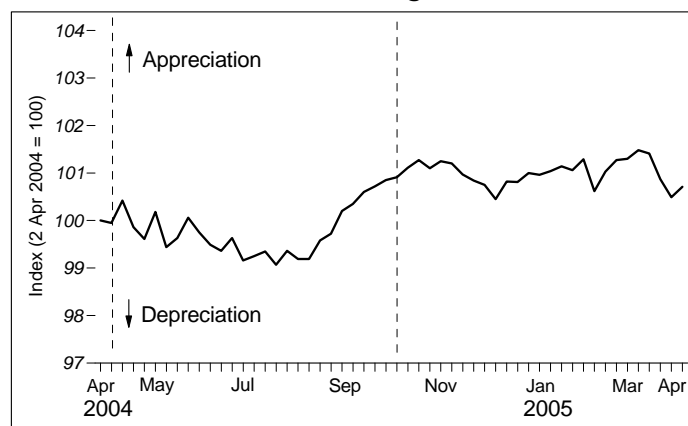
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# Monetary Policy Statement

## INTRODUCTION

1. In October last year, MAS announced that it would maintain the policy of a modest and gradual appreciation of the S\$NEER which has been adopted since April 2004. MAS assessed this policy stance to be supportive of economic growth, while ensuring low and stable inflation over the medium term.

**Chart 1**  
**Nominal Effective Exchange Rate (S\$NEER)**



- - - - indicates release of statement on monetary policy

2. Since the Monetary Policy Statement (MPS) in October 2004, the S\$NEER has fluctuated within the upper half of the policy band. The strong upward pressures on the S\$ reflected broad-based US\$ weakness amidst renewed concerns over the current account deficit in the US. In addition, the S\$NEER was supported by strong capital inflows into the region, underpinned by general optimism over the regional economic outlook. MAS intervened significantly in Q4 2004 and into early 2005 to moderate excessive upward pressure on the S\$. Since mid-March, the S\$NEER has trended downwards, as the US\$ rebounded following the interest rate hike by the US Federal Reserve amidst signs in the US of rising inflationary pressures and continuing firmness in the economic data. The S\$NEER has now eased back towards the centre of the policy band.

3. While domestic monetary conditions have tightened over the past six months, overall liquidity conditions remain loose. Domestic interbank rates have risen in tandem with the increase in the US federal funds rate, with the three-month domestic interbank rate rising from 0.75% at end-May 2004 to 1.44% by end-Sep 2004. It rose further to 2.13% as at end-March 2005. Retail interest rates have remained broadly unchanged, although there have been some modest increases in mortgage rates.

## OUTLOOK FOR 2005

4. Following the robust economic performance last year, the Advance GDP Estimates released by the Ministry of Trade and Industry (MTI) showed that the Singapore economy expanded at a more moderate 2.4% in Q1 2005 (on a year-on-year basis). On a quarter-on-quarter (QOQ) seasonally adjusted annualised basis, GDP contracted by 5.8% in Q1 2005. The decline largely reflected fluctuations in biomedical manufacturing, which are not expected to have significant spillover effects on the broader economy or on overall employment conditions. The services sector saw continued growth, with support from the financial, business and retail (excluding motor-vehicle sales) segments, although tourism-related activity was temporarily affected by the recent tsunami disaster.

5. The global economy is forecast to continue growing at a healthy pace this year, albeit a moderation from the strong performance in 2004. In particular, output trends in the electronics industry suggest that the slowdown in the global IT sector will be shallower and shorter this time round compared to the downturn in 2001, reflecting improvements in inventory management. Key forward-looking electronics indicators have showed early signs of levelling off, and a modest strengthening in IT demand is expected in the second half of the year.

6. Against this backdrop, and taking into account the Q1 performance, GDP growth for 2005 is projected to come in at the lower half of the forecast range of 3-5%. Notwithstanding the slower pace of growth, the economy will remain close to its potential output path, following its sharp rebound in 2004. The unemployment rate is expected to ease through the year and average around 3.5%, compared to 4.0% in 2004.

7. Headline consumer price inflation averaged 0.2% in Jan-Feb 2005, down from 1.7% in 2004. The lower headline inflation rate partly reflects the effects of the change in the weights and composition of the CPI basket beginning in 2005. The MAS underlying inflation measure was stronger at 1.0% in the first two months of this year.<sup>1</sup>

8. For 2005 as a whole, headline CPI inflation is expected to come in at 0-1%, before rising to 1-2% in 2006. The underlying inflation measure is projected to be around 1% this year and 1-2% in 2006. The gradual increase in inflationary pressures in the economy reflects higher commodity prices, rising wages, and increases in services charges. Domestic unit labour costs are also expected to turn positive after declining last year, reflecting the moderation of cyclical productivity gains and continued improvement in the labour market. There are further upside risks to these sources of inflation, including from higher than expected oil prices and the possibility of a greater pass-through of cost increases into consumer prices.

## MONETARY POLICY

9. The underlying growth support for the Singapore economy remains intact, despite the weaker GDP growth outcome in Q1 2005. At the same time, inflationary pressures continue to be a concern over the medium term, with the economy at close to its potential output level and with upside risks to external inflation.

10. MAS will therefore maintain the current policy of a modest and gradual appreciation of the S\$NEER policy band.<sup>2</sup> With the S\$NEER currently close to the mid-point of the policy band, there is scope for exchange rate flexibility in line with developments in external conditions in the period ahead.

<sup>1</sup> The MAS underlying inflation measure excludes private road transport and accommodation costs, which can be significantly affected in the short-term by changes in administrative controls and policies.

<sup>2</sup> There will be no change in the slope or the width of the policy band.

# 1 Macroeconomic Developments

## 1.1 External Developments

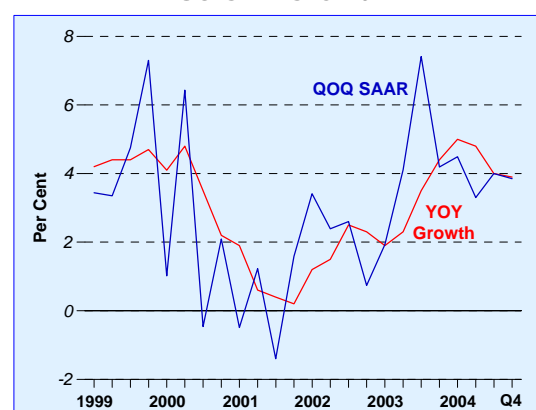
Conditions in the external economic environment have generally continued to hold up in the first few months of 2005, after the robust expansion last year. Global Gross Domestic Product (GDP) growth reached 5.1% in 2004, the highest in about three decades. Expanding at some 4% since the middle of last year, the US economy continued to provide an important source of growth for the world economy, particularly at a time when the other G3 economies have slowed. Against the strong global backdrop, the Asian economies performed well in 2004, particularly in the first half the year; GDP growth reached 9.5% in China, about 6% for the ASEAN-4 and some 5.5% in the Asian Newly Industrialising Economies (NIEs). More recently, as exports came off, growth moderated across much of the region. However, supported by still low – albeit rising – interest rates, reduced unemployment and generally higher asset prices, domestic demand has held up fairly well, cushioning the impact of the deceleration in exports.

### **The US economy regained traction in H2 2004.**

The US economy recovered from its brief “soft patch” in Q2 2004 to grow by an average of 3.9% on a quarter-on-quarter seasonally adjusted annualised (q-o-q SAAR) basis in the second half of last year. (Chart 1.1) Growth was supported by a rebound in personal consumption spending, which had been unusually weak in the second quarter. A significant rise in household purchases of durable goods – especially cars – helped to lift personal consumption expenditure, which rose by an average of 4.6% q-o-q SAAR in H2 2004, from a 3-year low of 1.6% in Q2 2004. Non-residential fixed investment spending remained strong, expanding by double digits in the final quarter of 2004, driven in large part by strong gains in capital spending on IT equipment and software.

The impact of the withdrawal of monetary and fiscal policy stimulus has thus far been fairly muted. This could be due to two main reasons. First, although the US Federal Reserve (Fed) raised the overnight Fed funds rate from 1% in June 2004 to 2.75% in March 2005, longer-term interest rates actually fell during much of that period. For example, the 10-year Treasury bond

**Chart 1.1**  
**US GDP Growth**



Source: Datastream

yield fell to 4.0% in early February 2005, down from 4.6% on the day the Fed first raised interest rates in June 2004, a phenomenon Fed Chairman Alan Greenspan referred to as a “conundrum” during his testimony to Congress in mid-February 2005. (Chart 1.2) The low long-term interest rates helped sustain buoyancy in the US housing market. Second, a number of President Bush’s tax cuts and tax incentives were extended, which helped household income and spending.

The continued cyclical recovery and improvement in labour market conditions provided significant support to consumption spending. Employment picked up strongly as the capacity utilisation rate rose. (Chart 1.3) As a result, the “jobless recovery” of 2002-2003 has gradually given way to net job creation of an average of 180,000 a month over the past 12 months. Meanwhile, the unemployment rate has fallen to 5.2% in March 2005, from 6.2% in July 2003.

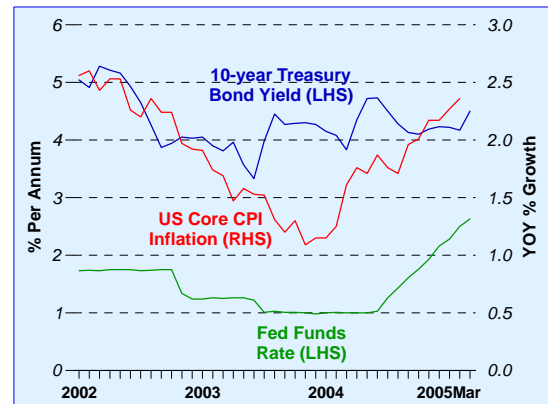
First-time unemployment claims have also eased in recent months. Initial jobless claims fell below 320,000 on a four-week moving average basis in February 2005, the lowest level in over four years, before picking up in March. (Chart 1.4) This suggests fairly buoyant conditions in the economy, at least up to the first quarter.

Overall consumer confidence, as measured by the Conference Board Index, has held up at a moderate level. While not as exuberant as in 2000, the index has nonetheless recovered to over 100 in recent months, well above the low of 61.4 registered in March 2003 (at the start of the Iraq war).

The strong run in non-residential investment (mostly at double-digit growth rates) continued uninterrupted into Q4 2004, the seventh consecutive quarter of growth. Corporate capital spending was boosted by a combination of factors, including strong gains in profits, low interest rates, and tax incentives for accelerated depreciation in 2004. The improved optimism of businesses can also be seen in the sustained high levels of the Institute for Supply Management (ISM) indices – both manufacturing and non-manufacturing – over the past two years, with both indices staying well above the 50 boom-bust level.

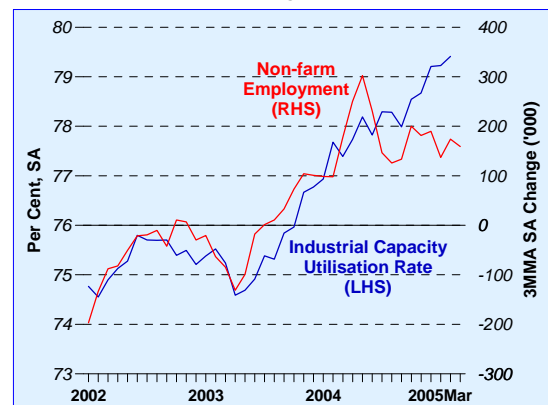
Not surprisingly, new orders for durable goods, including computers and electronics products, have picked up significantly since bottoming out in early 2003. After

**Chart 1.2**  
**US Core CPI Inflation and**  
**10-year Treasury Yield**



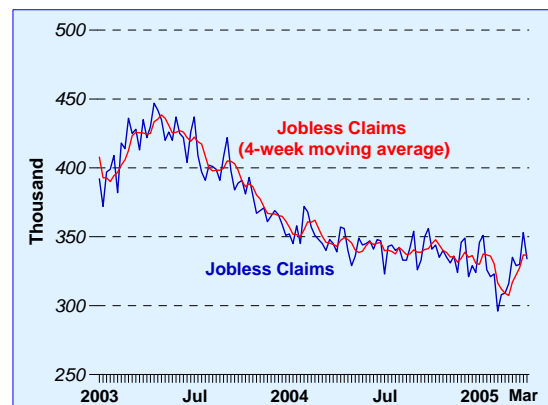
Source: CEIC

**Chart 1.3**  
**US Non-farm Payroll and**  
**Industrial Capacity Utilisation Rate**



Source: CEIC

**Chart 1.4**  
**US Jobless Claims**



Source: Bloomberg

mostly rising for over two years, new orders for computers and electronics products, boosted by a corporate PC replacement cycle last year, have now reached levels close to the peak of the IT cycle in 2000. (Chart 1.5) Although there are some excess capacity issues in a number of industries, overall electronics inventories, despite having gone up, have continued to hover at relatively low levels. This suggests that the current softness in the IT industry is not likely to develop into a much more serious or protracted downturn.

Despite positive investment and output indicators in the US, the global IT industry has been on a cyclical decline since hitting a peak in the middle of 2004. The growth of global semiconductor sales, for instance, softened to 15% year-on-year (y-o-y) in Q4 2004, from 40% at the peak in Q2 last year. In the first two months of 2005, growth picked up a little to 17% y-o-y.

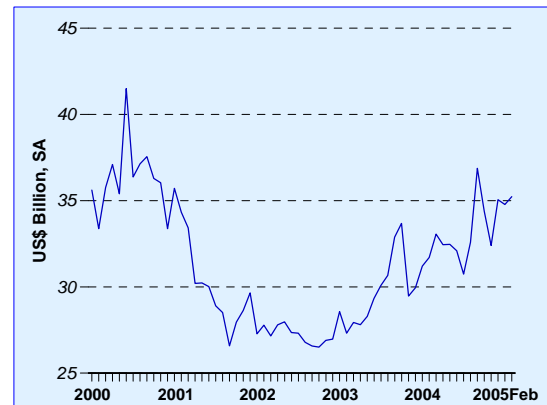
With the narrowing of the output gap in the US economy, the policy environment has also begun to tighten. President Bush has committed to halving the fiscal deficit over the next five years, while the Fed has raised interest rates by a quarter point at each of its past seven Federal Open Market Committee (FOMC) meetings. With core CPI inflation running at 2.4% y-o-y in February 2005 (or 0.3% month-on-month), the real Fed funds rate is only modestly positive, an indication that monetary policy is still accommodative. Recent comments by Chairman Greenspan suggest that the Fed is likely to continue raising interest rates to withdraw the policy stimulus.

### European growth slowed markedly in H2 2004 on high oil prices and a stronger euro.

The eurozone economy decelerated significantly in H2 2004 due to the combined impact of higher oil prices and a stronger euro. From an annualised growth of 2.4% in H1 2004, GDP growth fell to 1.0% q-o-q SAAR in Q3 2004, and to a mere 0.6% in Q4. (Chart 1.6) Overall, on account of the strength in the first half, eurozone growth came in at 2.0% in 2004, up significantly from 0.5% in 2003. Growth last year was also boosted by a few more working days as compared to 2003. Eurostat estimates suggest that adjusted GDP growth in 2004 would have been marginally slower at 1.8%.

Consumer spending remained subdued in H2 2004, rising by only 1.1%. Consumer sentiment was affected by concerns over employment (e.g., the Hartz IV labour

**Chart 1.5**  
**US New Orders for Electronics**



Source: CEIC

**Chart 1.6**  
**Eurozone GDP Growth**



Source: Datastream

market reforms in Germany) and personal finances. Gross fixed capital formation was also soft, growing by 1.7% in H2. Although exports rose by a fairly healthy 6.1%, imports expanded at a faster pace of 7.3%. Net exports contributed negatively to GDP growth in H2 2004.

### Japan entered a technical recession in Q2 and Q3 2004.

After a robust performance in Q1 2004, Japan's real GDP growth decelerated sharply to -1.0% and -1.1% q-o-q SAAR in Q2 and Q3 2004 respectively, before rebounding to a modest 0.5% growth in Q4. On a y-o-y basis, GDP growth came in at 2.7% in 2004, with a declining growth profile over the course of the year. (Chart 1.7) On a sequential basis, weaker growth in consumer spending, net exports and private fixed investment significantly curtailed growth after the first quarter. Government investment continued to fall, albeit at a slower rate.

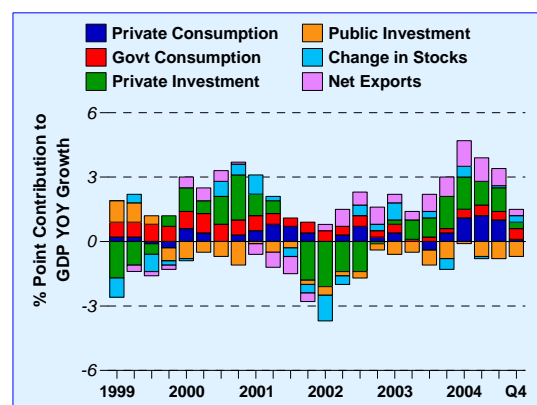
Japan's real exports were up by a modest 2.6% q-o-q SAAR in Q3 2004 and 4.9% in the final quarter, in contrast to the double-digit growth rate in H1. Export growth was dampened by the stronger yen, weaker demand in the major markets and slower global demand for electronics goods. Exports to its major markets in Asia (China, Asian NIEs and ASEAN) softened considerably, especially in the last quarter of 2004. Nevertheless, China overtook the US to become Japan's largest trading partner last year.

### Growth of the Northeast Asian economies moderated in H2 2004.

The Northeast Asian economies of China, Hong Kong, Taiwan and South Korea slowed somewhat in the second half of 2004. (Table 1.1) While China continued to post robust GDP growth of 9.5% in Q4 2004, this was due mainly to stronger-than-expected consumption spending and exports, as investment continued to cool.

Chinese exports have notably been very resilient. (Chart 1.8) Strong inflows of FDI into the manufacturing sector over the past several years have helped to significantly expand China's production and export capacity, especially in the electronics manufacturing sector. For example, China's exports of notebook PCs almost doubled in 2004, as Taiwanese manufacturers continued to relocate part of their

**Chart 1.7**  
Contribution to Japan's GDP Growth



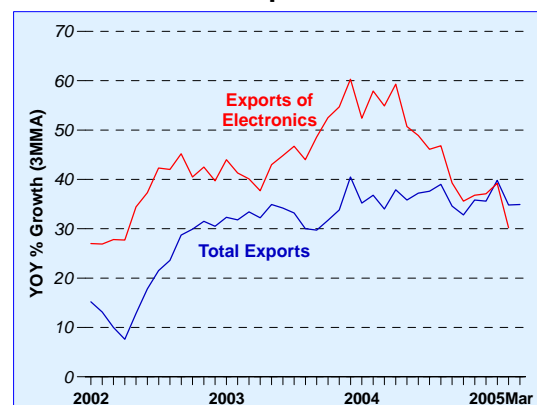
Source: CEIC

**Table 1.1**  
East Asia's GDP Growth

y-o-y (%)	2003	2004	2004			
			Q1	Q2	Q3	Q4
China	9.3	9.5	9.8	9.6	9.1	9.5
Hong Kong	3.2	8.1	7.0	12.1	6.8	7.1
Indonesia	4.9	5.1	4.4	4.4	5.1	6.7
Korea	3.1	4.6	5.3	5.5	4.7	3.3
Malaysia	5.3	7.1	7.8	8.2	6.7	5.6
Philippines	4.7	6.1	6.5	6.6	6.3	5.4
Singapore	1.4	8.4	7.9	12.3	7.2	6.5
Taiwan	3.3	5.7	6.7	7.9	5.3	3.3
Thailand	6.9	6.1	6.7	6.4	6.1	5.1

Source: CEIC

**Chart 1.8**  
China's Export Growth



Source: CEIC

production to the mainland in a bid to bring costs down.

Strong economic growth over the past year has led to a fall in the unemployment rate in many countries in Asia. In Hong Kong, the seasonally adjusted unemployment rate has declined from a high of 8.6% in mid-2003 to 6.1% in February 2005. In Taiwan, the rate eased from 5.4% at its peak in January 2002 to 4.3% in February 2005. (Chart 1.9) Increased employment, continued low interest rates and the recent gains in asset prices (driven in part by strong short-term capital inflows) have provided continued support to household spending.

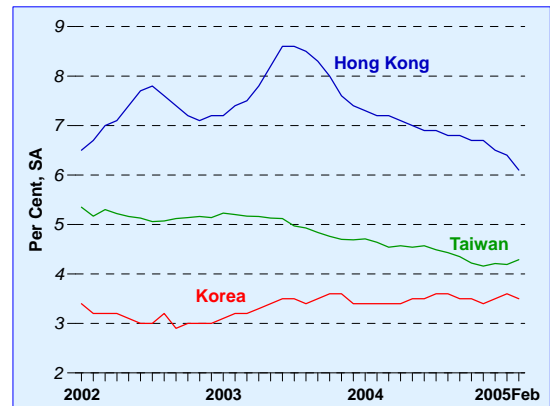
**The ASEAN-4 economies slowed towards the end of 2004.**

Real GDP growth in the ASEAN-4 economies accelerated to an average of 6% in 2004, the strongest in eight years on the back of a rebound in the global economy. (Chart 1.10) The upturn was driven by strong household spending and robust exports. However, as external demand conditions softened in H2 2004, the growth momentum also appeared to wane in the economies of Southeast Asia. Growth was noticeably slower at the end of last year in Malaysia, Thailand and the Philippines, compared to the start of 2004. Buoyed in part by increased domestic spending last year, Indonesia appeared to have bucked the trend, as strong consumption and improved business sentiment boosted economic growth to 6.7% y-o-y in Q4 2004, the fastest pace in eight years.

Growth in Southeast Asia continued to be underpinned by robust household consumption in the fourth quarter. The relatively low real borrowing rates and the increased availability of consumer financing (e.g. credit card debt in Thailand grew by 30% in 2004) have enabled households to continue spending on durable goods, such as passenger cars. Increased household income, due to higher wage growth and a rise in employment – as well as favourable weather conditions in the more agrarian economies, such as the Philippines – have also been important in shoring up personal consumption spending.

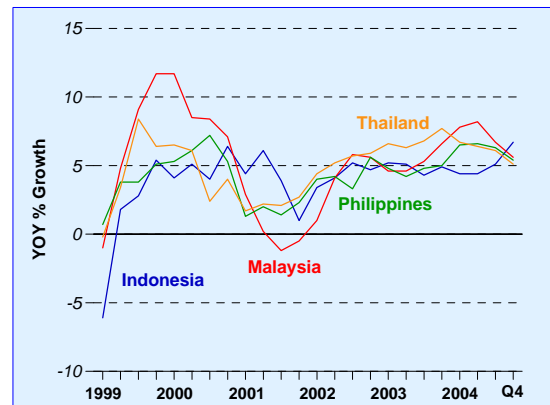
As external demand conditions softened in the second half of 2004, growth in Southeast Asia also decelerated. (Chart 1.11) This export-induced deceleration was clearly evident in the case of Malaysia, where electronics account for about 40% of total exports. Real exports growth in Malaysia softened to 11% y-o-y in Q4 2004, from a high of 19% in Q2. This contributed to a

**Chart 1.9  
Unemployment Rate in Selected Northeast Asian Countries**



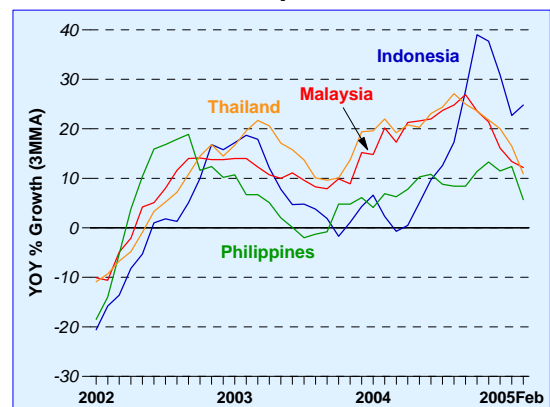
Source: CEIC

**Chart 1.10  
ASEAN-4 GDP Growth**



Source: CEIC

**Chart 1.11  
ASEAN-4 Export Growth**



Source: CEIC

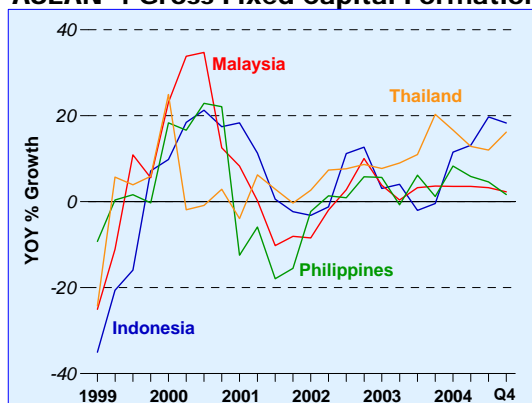
softening of GDP growth from 8.2% y-o-y in Q2 to 5.6% in Q4. In Jan-Feb 2005, the growth of Malaysia's exports of electrical and electronic products slowed to 6.0% y-o-y. Nonetheless, supported by petroleum and other non-electronics exports, Malaysia's overall export growth remained healthy, at 12% in the first two months of this year.

Investment spending has mostly been firm in the region. (Chart 1.12) In Thailand, for example, investment has been notably strong, expanding by about 14% in 2004, the fastest rate in more than a decade. Thai investments were mainly driven by construction activities, including public sector projects. Investment in vehicle manufacturing plants has also increased as capacity utilisation has been tightening, and vehicle production has been steadily rising to meet growing regional demand. In Indonesia, fixed investment grew strongly, outpacing the rest of the region. However, the growth came from a low base and was concentrated in domestic-oriented industries such as construction, retail and banking.

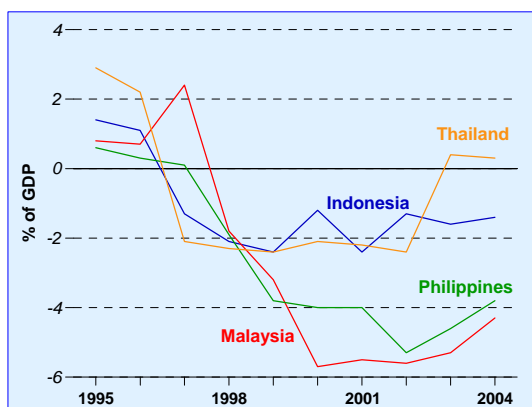
Fiscal policy in the region has become less expansionary (Chart 1.13), in tandem with the improved economic environment. Malaysia, which has recorded persistent fiscal deficits, is planning to cut its deficit to 3.8% of GDP in 2005, from 4.3% in 2004. Also, with oil prices hovering at near record levels, the governments of Indonesia, Malaysia and Thailand, which subsidise domestic oil prices to varying extents, have recognised the need to cut back on fuel subsidies in order to avoid significant budget deficits, as well as to encourage greater fuel efficiency among consumers. With effect from 1 Mar 2005, the Indonesian government has cut back on its fuel subsidies, which precipitated an almost 30% jump in retail fuel prices. Malaysia also raised retail diesel and petrol prices by five sen/litre (equivalent to increases of 6.4% and 3.6% respectively) in October 2004; diesel prices were raised by a further five sen/litre in February 2005. Thailand, similarly, has reduced some subsidies and allowed domestic fuel oil prices to rise.

Concern over the fiscal situation in the Philippines has abated somewhat following the announcement of a smaller fiscal deficit of 3.9% of GDP last year, instead of the 4.2% estimated earlier. However, the rating downgrades by S&P and Moody's in January and February 2005, respectively, highlighted the slow pace of reform and persistent revenue shortfalls. Tax revenues declined to only 12.3% of GDP last year, the lowest ratio since 1988, despite the reasonably firm economic growth over the past few years.

**Chart 1.12**  
**ASEAN-4 Gross Fixed Capital Formation**



**Chart 1.13**  
**ASEAN-4 Fiscal Balance**

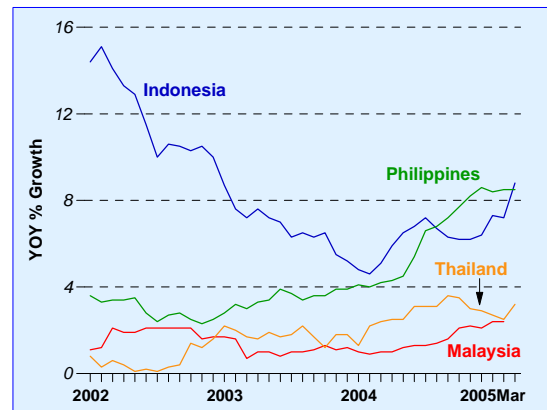


Source: CEIC, official national sources



In the face of higher oil prices, headline inflation has risen although core inflation appears to be well-contained, as second round effects have been fairly muted so far. (Chart 1.14) The policy response in the region has been mixed, with a number of central banks choosing not to tighten policy yet. The Bank of Thailand (BOT) became the first central bank in Southeast Asia to raise interest rates, in a bid to contain inflationary pressures emanating from a tighter labour market and rising commodity prices. BOT has raised interest rates four times over the past one year, with the latest tightening in March 2005. More recently, the central banks in Indonesia and the Philippines have also started to raise interest rates as inflation picked up.

**Chart 1.14**  
**ASEAN-4 CPI Inflation**



Source: CEIC

## 1.2 Domestic Economy

### A SHOT IN THE ARM

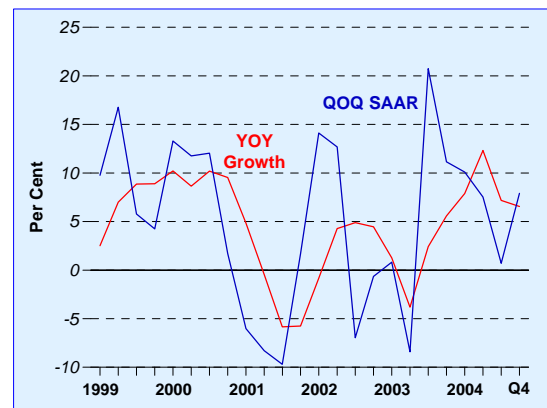
**Domestic economic activity grew at a slower pace in H2 2004.**

Against the backdrop of brisk global IT demand and generally buoyant economic conditions in the G-3 and East Asian economies, the Singapore economy recorded robust sequential growth over the period Q3 2003 to Q1 2004. (Chart 1.15) Such a rapid pace of expansion was not expected to be sustained. In the event, GDP growth slowed significantly in Q3 2004 to a modest 0.7% on a q-o-q SAAR basis. Nevertheless, Q4 experienced a temporary rebound, with the economy recording 7.9% growth on a q-o-q SAAR basis, led by a sharp turnaround in the domestic manufacturing sector.

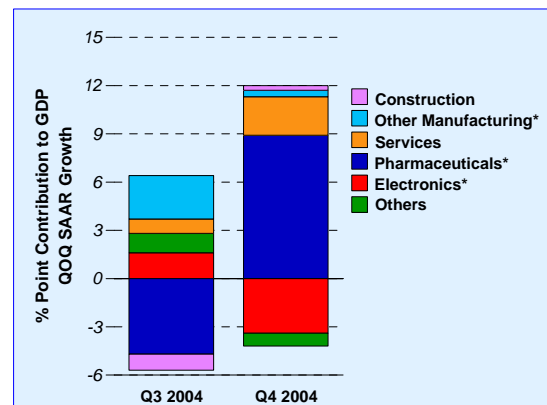
**The rebound in Q4 2004 was led by a sharp turnaround in pharmaceutical value added.**

The robust growth of manufacturing output in Q4 was led mainly by a sharp reversal in pharmaceutical value added during the quarter. (Chart 1.16 and Table 1.2) This contrasted with its poor sequential performance in the preceding quarter.

**Chart 1.15**  
**Singapore's GDP Growth**



**Chart 1.16**  
**Contribution to GDP Growth**



\* EPD, MAS internal estimates

**Table 1.2**  
**Pharmaceutical and GDP q-o-q SAAR Growth**

Q-O-Q SAAR Growth	Q3 2004	Q4 2004	Q1 2005
Pharmaceutical Output	-74.2	894.1	-81.9*
Manufacturing Output	3.9	23.0	-20.2*
Overall GDP	0.7	7.9	-5.8

\* Average Jan-Feb 2005

**A closer look at the turnaround in pharmaceuticals suggests supply-side factors at play.**

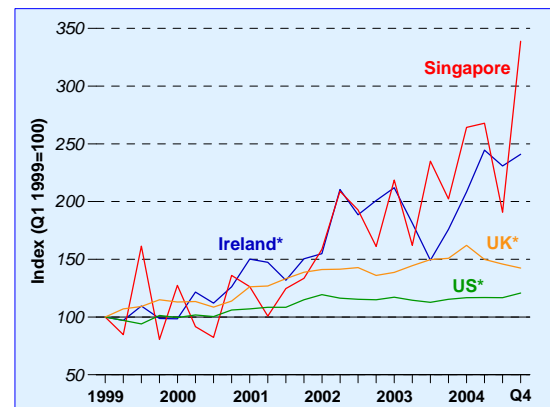
These large swings in pharmaceutical value added do not necessarily reflect sudden changes in demand-side conditions. In fact, such fluctuations can often be traced to the supply-side characteristics of the domestic pharmaceutical industry, in particular, shifts in the value added content of products and plant shutdowns.

A major factor explaining the fluctuations in the pharmaceutical sector is the difference in pricing across various products. Hence, a spike in pharmaceutical output would be observed during months in which higher-priced active ingredients are intensively produced in Singapore.

To a lesser extent, production activity is also affected by plant shutdowns for regular re-tooling and cleaning of equipment in between the manufacture of different products. In addition, full-scale production may be temporarily put on hold when plants focus on producing small batches of pharmaceutical ingredients to be utilised in clinical research and testing. These production runs are short-lived and the products are not priced since they are intended for research and development purposes within the firm.

Interestingly, discernible swings are also observed in the output of other emerging pharmaceutical producers such as Ireland. Going forward, as more players with a wider variety of products join the domestic pharmaceutical industry, Singapore's value added and export profile should gradually mirror those of more mature markets such as the US and UK, where volatility is much more muted. (Chart 1.17)

**Chart 1.17**  
**Pharmaceutical Index of Industrial Production for Selected Countries**

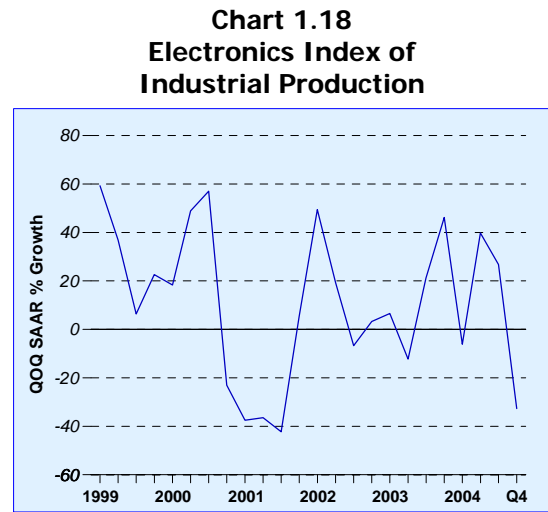


\* Source: Datastream

**SHIFTING TO A LOWER GEAR**

**In comparison, electronics-related production fell in Q4 last year, accompanied by a moderation in the broader economy.**

Notwithstanding the sharp turnaround in the pharmaceutical sector, Q4 data suggests that the broader economy – especially the electronics-related industries – has shifted to a lower gear. Electronics output slumped 33% on a q-o-q SAAR basis in Q4, as the global IT cycle turned decisively downwards following the peak in Q2 2004. (Chart 1.18) In its monitoring of electronics manufacturing, EPD has found it useful to classify the domestic electronics segments according to their positions within the IT supply chain, i.e. upstream, midstream and downstream. (Table 1.3)

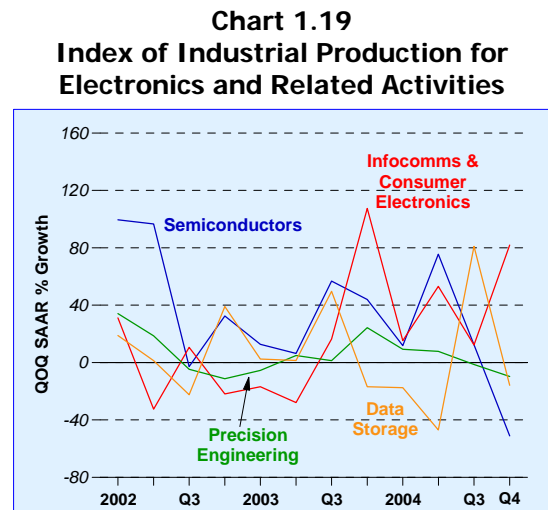


**Table 1.3 Supply Chain Classification of Domestic Electronics Industry**

Upstream	Midstream	Downstream
Precision Engineering: Machinery & Systems	Semiconductors Data Storage Other Electronic Modules & Components	Computer Peripherals Infocomms & Consumer Electronics

**The midstream segment was the worst hit by the global IT slowdown.**

Triggered by an inventory overhang in the global industry, midstream domestic electronics segments were acutely affected, with production in the domestic semiconductor and data storage segments contracting by 51% and 16% q-o-q SAAR respectively in Q4 2004. (Chart 1.19) As the midstream segment adjusted to the unintended build-up in inventory, the impact spilled over into the upstream segment, with precision engineering contracting 9.7% during the quarter. In the downstream segment, however, output of handphones saw a surge in Q4 last year, which was reflected in the strength of the infocomms & consumer electronics segment (an 82% jump). With consumer demand in key end markets such as the US and EU healthy over the period, demand for digital imaging and info-communications products, in particular, had continued to support the downstream producing segment.



\* EPD, MAS internal estimates

### **NODX shrank in Q4 and signs of moderation emerged in trade-related services.**

Overall, the IT slowdown has dragged down Singapore's export performance, with non-oil domestic exports (NODX) shrinking 8.5% on a sequential basis in Q4 2004, after hitting an all-time quarterly high (SA) of \$34 billion in Q3 2004.

The services industries were not spared the impact of the IT slowdown. Reflecting the contraction in electronics re-exports, overall non-oil re-exports (NORX) saw its first sequential contraction in six quarters in Q4 2004. (Chart 1.20) An examination of the detailed data reveals that the contraction was due mainly to declines in semiconductor re-exports, confirming EPD's earlier assessment of a correction in the mid-stream segment in the electronics supply chain.

Regional trading activity also showed signs of levelling off in Q4. NORX to China, for instance, contracted slightly in Q4, following the huge run-up earlier last year. Meanwhile, NORX to ASEAN also dipped in Q4. As for cargo shipments, air cargo turned negative in Q4 after five quarters of positive growth, while growth of sea cargo moderated over the same period.

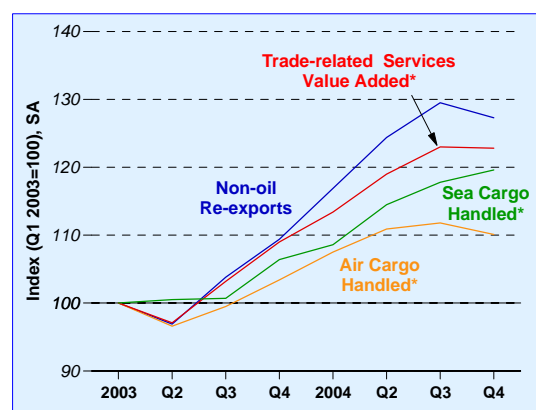
### **Support for the domestic-oriented sectors mainly reflected brisk motor vehicle sales.**

Concerns of an economic slowdown also affected the retail sector in the final quarter of 2004. The Straits Times Index of Consumer Confidence pointed to a deterioration in domestic consumer sentiment in Q4, as it edged down to its lowest level since Q4 2003. The sentiment-sensitive retail segments such as those selling clothing and footwear were the most adversely affected. Nonetheless, the weakness in the sentiment-sensitive segments was more than offset by the robust sales of motor vehicles, which saw a further pickup in Q4. (Chart 1.21) The increase in Certificate of Entitlement (COE) quotas which led to a steady drop in COE premiums, accompanied by attractive promotions by car dealers, prompted a double-digit surge in vehicle sales in Q4.

### **Hotel occupancy rates edged downwards despite strong visitor arrivals.**

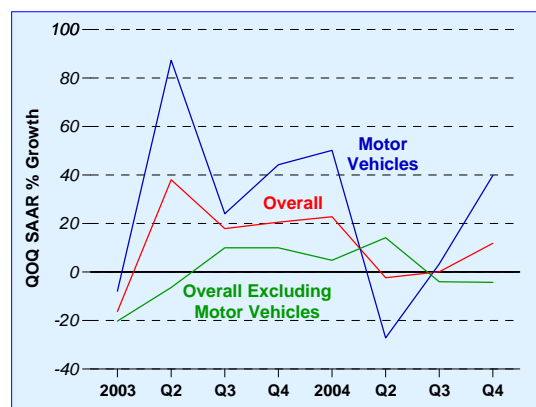
Visitor arrivals surged 6.4% q-o-q SAAR to a new record level of 2.2 million in Q4 following some levelling

**Chart 1.20**  
**Trade-related Services Cluster**



\* EPD, MAS internal estimates

**Chart 1.21**  
**Retail Sales Volume**



off in Q3. (Chart 1.22) For the year as a whole, a total of 8.3 million visitors came to Singapore, exceeding the initial target of 7.6 million set by the Singapore Tourism Board (STB).

Notwithstanding the improvement in visitor arrivals in Q4, gross room lettings at hotels did not experience a corresponding increase. The average hotel occupancy rate edged down to 78.6% in Q4, from above 80% in Q3.

The loosening of the nexus between visitor arrivals and the hotel occupancy rate can be traced to the shorter duration of visitor stays. The average number of days spent by visitors in Singapore has fallen, from 3.5 days in 1998 to 3.2 days last year. The average stay at hotels tends to be even lower, averaging about 2.7 days in recent years. The trend towards shorter stays could be due in part to a change in the visitor mix. For example, visitors from China – who account for a substantial 11% of total visitor arrivals here, up from 6% just five years ago – typically spend one day or less in Singapore.

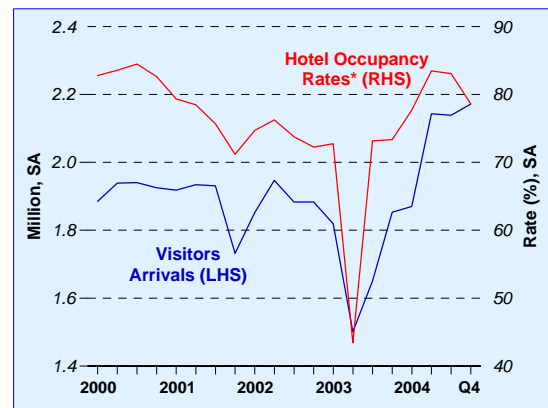
Moreover, the share of visitors requiring hotel accommodation has fallen from 62% in 1998 to 57% in 2003. In comparison, the share of visitors staying with friends and relatives has crept up to about 13% in 2003. Amidst increased competition from regional hotels, domestic hoteliers have also been cautious in raising room rates, even though they are currently some 10% below the peak in Q2 2001. (Chart 1.23)

**The financial services sector gathered momentum towards the end of 2004.**

The financial services sector was amongst the stronger performers in Q4. After remaining in negative territory for two consecutive quarters, growth momentum in the sector saw a modest rebound in the final quarter of 2004.

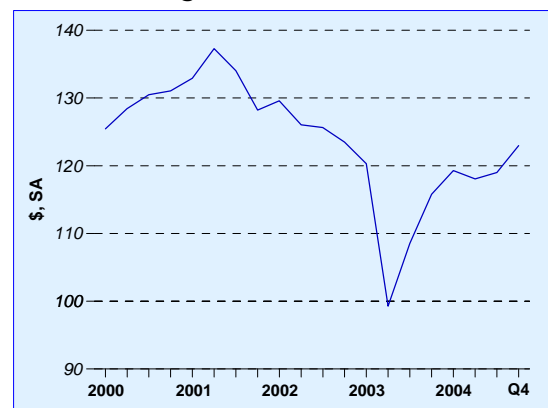
The robust performance of the banking sector – which accounts for nearly half of total financial services value added – was the most significant factor in the Q4 reversal. Activity in the Asian Dollar Market (ADM), in particular, was boosted by markedly higher lending in both the interbank and non-bank segments. (Chart 1.24) Interbank loans were especially robust, soaring to new highs in Q4.

**Chart 1.22  
Visitor Arrivals and Hotel Occupancy**



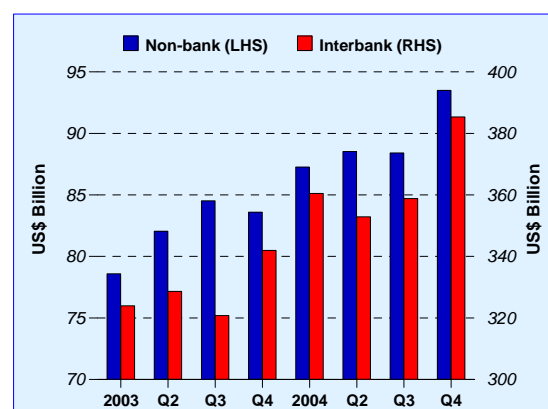
\* EPD, MAS internal estimates

**Chart 1.23  
Average Hotel Room Rates**



\* EPD, MAS internal estimates

**Chart 1.24  
ADM Loans**



Meanwhile, the domestic banking segment benefited from healthier fee-based income on the one hand, as well as steady growth in non-bank lending on the other. While housing loans continued to be a key driver of lending to non-bank customers, gains were also seen in credit extended to non-bank financial institutions and professional & private individuals. (Chart 1.25)

However, insurance-related activities slowed further, due in large part to weaker demand in the key life insurance segment. According to data from the Life Insurance Association, growth in new business declined by 8% in Q4 2004 relative to the previous quarter. This partly reflected the slower growth in premiums from investment-linked policies, which accounted for 41% of total premiums in 2004, down from 48% the year before.

### Construction saw a surprise rebound in Q4 2004.

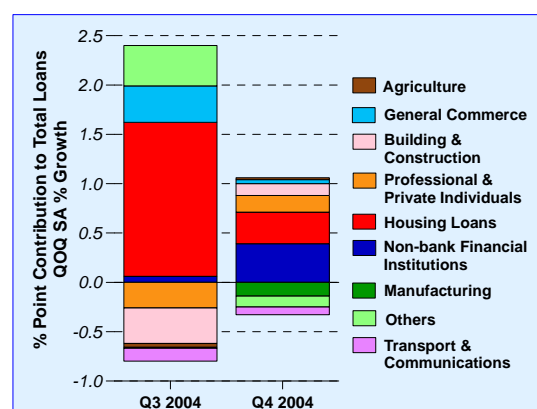
The construction sector saw a surprise rebound of 7.1% q-o-q SAAR in the last quarter of 2004, due to improvement in the private non-residential segment. In comparison, the residential segment continued to head south. (Chart 1.26)

Following two consecutive quarters of contraction in certified payments in Q2 and Q3, building activity in the non-residential segment bounced back into positive territory in the fourth quarter. Several indicators point towards more concrete signs of a turnaround in the commercial segment of the property market. In the second half of 2004, occupancy rates have generally continued to improve across the various commercial segments (Chart 1.27), while rental rates have also increased steadily in some of these segments. However, it remains to be seen if such developments will translate into further improvements in construction activity in the coming quarters, as there is yet to be a sustained turnaround in contracts awarded.

### Some improvement in the property market was seen towards the end of last year.

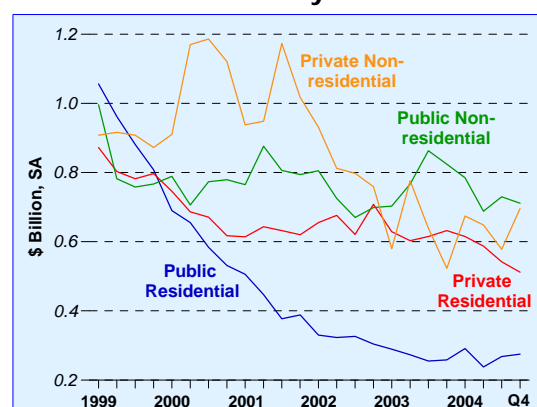
Although the construction sector failed to see any discernible improvement last year, Singapore's property market performed better on the back of improving economic conditions and a reduction in supply. Demand was stronger, as the number of uncompleted new units sold rose to 1,164 and 1,563 in Q3 and Q4 2004 respectively, after remaining below the 1,000-mark for

**Chart 1.25**  
Breakdown of increase in DBU Loans to Non-bank Customers



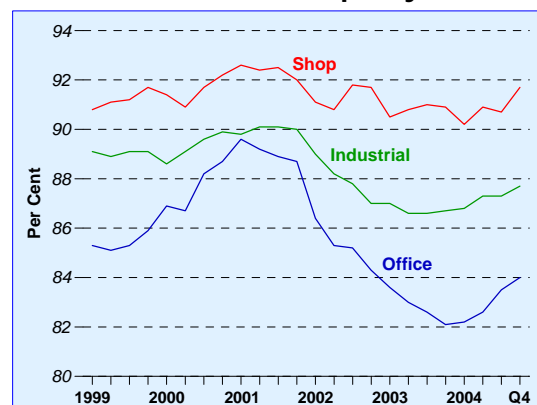
\* EPD, MAS internal estimates

**Chart 1.26**  
Residential and Non-residential Certified Payments



\* EPD, MAS internal estimates

**Chart 1.27**  
Non-residential Occupancy Rates



the first two quarters of 2004. (Chart 1.28) Landed property sales, in particular, saw strong growth last year, helped along by competitive prices and general improvement in economic conditions.

**A snapshot of the GDP performance by industry reveals that the “usual suspects” again contributed most strongly to growth in 2004.**

Chart 1.29 provides a snapshot of the GDP performance in 2004 by industry. Value added growth of the various industries on the vertical axis is plotted against their percentage point contribution to GDP growth on the horizontal axis. Industries appearing in the northeast portion were the star performers. Conversely, industries in the southwest area would be the relative laggards.

Growth in 2004 was largely driven by the “usual suspects” – the manufacturing sector and the closely linked trade-related services. The more domestic-oriented services sectors, and financial and business services, generally saw respectable growth and contributed positively to GDP growth last year.

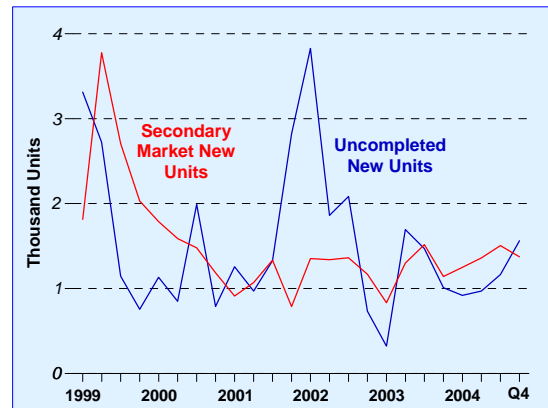
The construction sector remained the laggard. The industry, which has been contracting since 1999, saw its share of GDP shrink further in 2004 as the sector recorded a 6.5% decline for the year as a whole. After six consecutive years of contraction, its share of GDP in real terms has halved to 4.5% in 2004, down from 8.9% in 1998.

**Strong manufacturing growth last year was underpinned by buoyant global trade activity.**

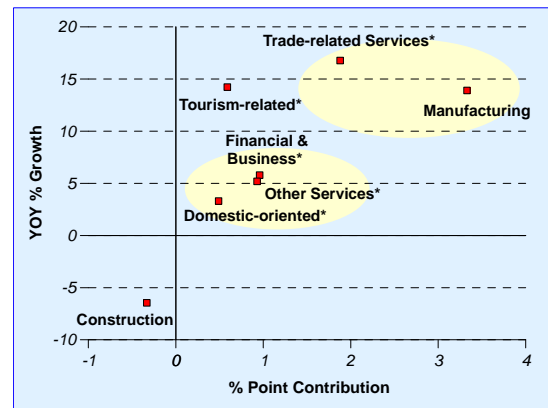
The strong performance in the manufacturing sector last year was underpinned by record levels of world trade, which grew by about 1.5 times faster than world GDP. This trade augmentation was even more pronounced for Singapore, with trade growth almost doubling that of GDP. Indeed, Singapore’s trade-to-GDP ratio reached 3.2 in 2004.

Table 1.4 shows the top five contributors to Singapore’s NODX growth over the past two years, which saw a sharp increase of 35%. China plus Hong Kong emerged top – accounting for 9.3% points of NODX growth – with China itself contributing 5.6% points. China’s share in total NODX has risen from 2.9% in 1997 to 8.9% in 2004, which is similar to Malaysia’s share. By region, East Asia has gained in importance as an export market for Singapore. Its share of NODX has grown from 44%

**Chart 1.28  
Sales of Private Residential Units**



**Chart 1.29  
GDP Performance in 2004 by Industry**



\* EPD, MAS internal estimates

**Table 1.4  
Top 5 Contributors to NODX Growth  
(2003-2004)**

Countries	% Point Contribution
China + HK	9.3
UK	5.5
Germany	2.3
Japan	1.7
France	1.5
<b>Overall</b>	<b>34.7</b>

in 1997 to 50% in 2004. This largely reflects the steady increase in intra-regional trade, driven by the Northeast Asian economies, even though trade within ASEAN itself has generally remained steady.

The Special Feature chapter will take a closer look at intra-regional trade within ASEAN.

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**Singapore has been nimble in entering new higher value added export industries.**

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Apart from the geographical diversification of Singapore's export markets, there has also been a continual upgrading of the value added content of domestic exports. A recent IMF study (see Box Item A) concluded that although the "quality gap" of Singapore's manufactured exports (especially machinery and chemicals) has widened in relation to low-cost regional competitors, such as China, it is narrowing against developed countries, such as Japan. This reflects Singapore's nimbleness in entering new higher value added industries and in moving up the quality ladder.

**Box Item A**  
**Quality Upgrading of Singapore's Exports**

In the past decade, the Singapore economy has undergone significant structural change, particularly in manufacturing, which has become more skill-, capital- and technology-intensive. A recent paper by the IMF (Amiti 2005) provides a new and interesting way to analyse the impact of these structural changes by looking at export price data. The study is part of an in-depth analysis by the IMF on Singapore's export performance, which will be published in late April 2005.

The IMF examined the quality upgrading of Singapore's exports to the US vis-à-vis nine other developed and developing economies. Price differentials for the same product produced in different countries are used to reflect quality differences. In all, over 10,000 products exported by the ten countries are included.

The results show that Singapore's manufactured exports, particularly from the chemicals and machinery sectors, have seen marked price increases. Singapore's quality gap with respect to low-cost regional competitors, such as China, Malaysia, and Thailand appears to have widened, whilst the gap with developed economies, such as Japan and the UK, is narrowing. Thus, whilst Singapore faces increasing competition in goods which are also produced and exported by lower-cost countries, the IMF study finds that Singapore has been nimble in both entering new higher value added industries and in moving up the quality ladder. Moreover, the size of the pie seems to be large enough to absorb Singapore's structural adjustment into higher quality products, where export growth to end markets is largely unaffected by the performance of its lower-cost competitors. The results, as the IMF puts it, are an "encouraging sign for Singapore's future growth prospect".



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### Declines in electronics-related industries moderated somewhat in Q1 2005.

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Moving into 2005, the *Advance GDP Estimates* point to a 5.8% sequential contraction in GDP in Q1, largely due to the more-than-50% m-o-m SA contraction in pharmaceutical output in Jan-Feb 2005. Excluding pharmaceuticals, the broader economy saw continued growth in activity over the first two months of the year.

In particular, the magnitude of decline in the electronics-related industries appears to have abated somewhat. Electronics output saw average growth of 2.6% m-o-m SA in Jan-Feb 2005, a significant improvement from the 9.4% q-o-q SA decline in Q4 last year. The improvement was most evident in the midstream semiconductor segment, which grew by an average of 5.1% m-o-m SA. This could be a result of the response by semiconductor manufacturers, who were quick to cut down on production to ease the inventory build-up. Indeed, latest data has pointed to significant declines in global inventory levels since the peak in Q3 last year.

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### There has not been any significant slippage in the trade-related services.

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The trade-related services have not suffered any major slippage in early 2005. For instance, NORX increased by 3.0% q-o-q SA in Q1 2005, a reversal from the 1.6% sequential contraction in Q4 last year. (Chart 1.30) Similarly, the latest air and sea cargo data have not pointed to any major deterioration in trade-related activities.

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### The domestic retail sector recorded modest improvement.

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After a sluggish performance towards the end of last year, retail sales rose by an average 1.9% m-o-m SA in Jan-Feb this year. While motor vehicle sales growth moderated significantly following the robust expansion in Q4 2004, the rest of the retail sector, particularly the sentiment-sensitive items, saw a turnaround from the mild declines in H2 last year.

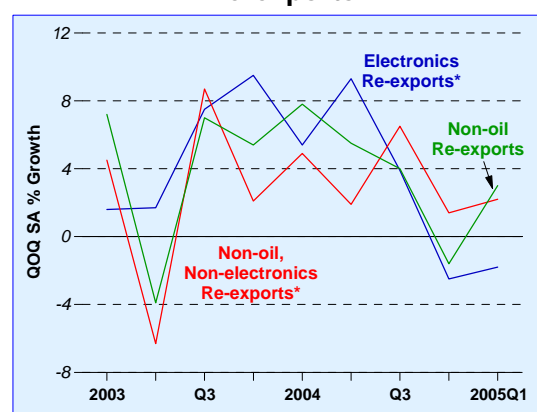
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### Financial services continued to strengthen in Q1.

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The acceleration witnessed in the financial services sector in Q4 last year gathered steam in Q1 2005, as the

**Chart 1.30**  
Electronics and Non-Electronics Re-exports



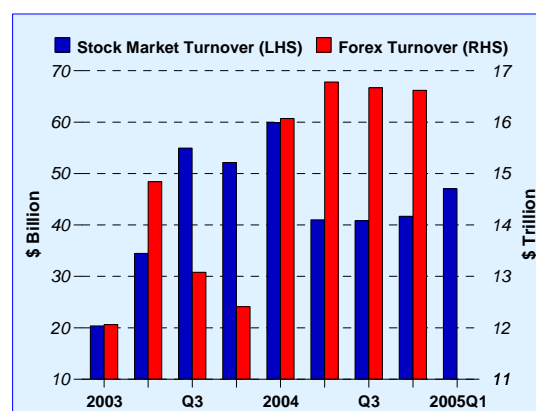
\* EPD, MAS internal estimates

breadth of the turnaround widened to include most of the key segments.

The sentiment-related segments, in particular, have continued to perform strongly. Trading in the forex market has remained relatively buoyant, while stock market activity has also begun to turn around. (Chart 1.31) After turning in a lacklustre performance in H2 2004, turnover on the local bourse rebounded strongly in the early months of 2005, fuelled to some extent by more active trading in blue chip counters, as well as stronger foreign buying interest.

However, tentative signs of tapering off have emerged in non-bank loans in Q1 this year, possibly reflecting expectations of more modest economic performance for the year ahead. Banks' interest earnings have also been capped by a general reluctance to raise lending rates in tandem with the strengthening interbank rates over the past two quarters, reflecting increased competition in the industry.

**Chart 1.31**  
**Stock Market and Forex Turnover**



#### **Weakness in Q1 2005 GDP was narrowly based.**

In sum, the pace of moderation in Q1 2005 needs to be viewed in perspective. The slippage was largely confined to the pharmaceutical sector and is not reflective of a more general weakness in overall economic activity. In fact, the output decline in the key electronics sector has shown early signs of levelling off against the backdrop of a quicker downward adjustment in semiconductor inventories on the global front.

Looking ahead, the outlook for the domestic economy hinges largely on the prospects for the global IT industry, as well as on the strength of the external economic environment as a whole. This will be discussed further in Chapter 4.

## 1.3 Macroeconomic Policy

Against the backdrop of strong economic growth in 2004, Singapore's overall macroeconomic policy stance has started to tighten somewhat, after having eased over the previous three years. This is in line with the narrowing of the economy's output gap. Chart 1.32 is a scatter plot of the Fiscal Impulse (FI)<sup>1</sup> measure on the horizontal axis and the Domestic Liquidity Indicator (DLI)<sup>2</sup> on the vertical axis over the period 1999-2004. A point in the southwest and northeast quadrants (shaded in yellow) indicates a general easing and tightening of macroeconomic policy stance, respectively. The following paragraphs review the most recent developments in monetary and fiscal policy.

### MONETARY POLICY

#### **MAS reaffirmed its policy of a modest and gradual appreciation of the S\$NEER in April 2005.**

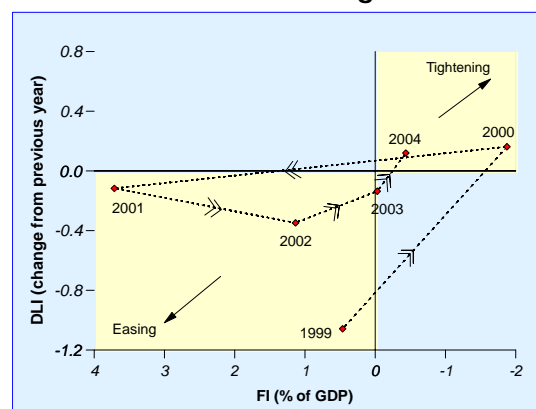
In the Monetary Policy Statement (MPS) of 11 Oct 2004, MAS maintained the policy of a modest and gradual appreciation of the S\$NEER, while keeping the slope and width of the band unchanged.

Against a backdrop of continued underlying growth support for the Singapore economy and concern about a rise in inflationary pressures in the medium term, MAS announced in its MPS on 12 Apr 2005, that it would maintain the current policy of a modest and gradual appreciation for the S\$NEER policy band.<sup>3</sup> Section 4.5 provides a more detailed discussion of the April 2005 monetary policy stance.

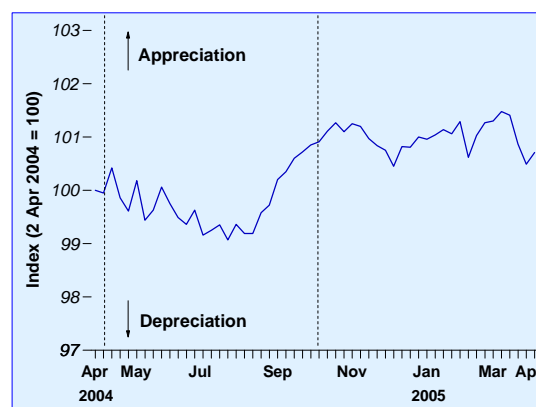
#### **The S\$NEER has fluctuated within the upper half of the policy band since the policy announcement in October 2004.**

Since the MPS in October 2004, the S\$NEER has fluctuated within the upper half of the policy band. (Chart 1.33) There were strong upward pressures on the S\$, reflecting broad-based US\$ weakness amidst renewed concerns about the US current account deficit.

**Chart 1.32**  
**Scatter Plot of DLI against FI**



**Chart 1.33**  
**Movements in S\$NEER**



--- indicates release of statement on monetary policy

<sup>1</sup> The FI measure is calculated using the IMF methodology. Please refer to the January 2002 issue of the *Review* for more information.

<sup>2</sup> The DLI is a measure of overall monetary conditions, reflecting changes in the S\$NEER and domestic interbank rate.

<sup>3</sup> There will be no change in the slope or the width of the policy band.

In addition, the S\$NEER was supported by strong capital inflows into the region, underpinned by general optimism over the regional economic outlook. Upward pressures on the S\$ continued into the first quarter of this year, as markets reacted to comments by European Central Bank (ECB) officials on the burden of exchange rate adjustments, as well as remarks by some Asian central banks about diversifying their foreign exchange reserves. MAS intervened significantly in Q4 2004 and into early 2005 to moderate excessive upward pressure on the local currency. Since mid-March, the S\$NEER has trended downwards, as the US\$ rebounded following the interest rate hike by the Fed amidst signs of rising inflationary pressures in the US and continuing firmness in the economic data. The S\$NEER has since eased back towards the centre of the policy band.

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#### Domestic monetary conditions have tightened since mid-2004.

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Liquidity conditions in the domestic money market have tightened since mid-2004, but continued to remain generally loose. The DLI has stayed in positive territory since August last year, although it dipped in March more recently. (Chart 1.34)

In tandem with the gradual increase in the US Fed funds rate since June last year (from 1% to 2.75%), the three-month domestic interbank rate rose from 0.75% at end-May to 1.44% by the end of September 2004, and strengthened further to 2.13% as at end-March 2005. (Chart 1.35) Retail rates have remained broadly unchanged, although there have been some modest increases in mortgage rates. Banks have announced hikes in their board rates for home loans in the range of 25-75 bps, and some banks and finance companies have also raised interest rates on car loans. Nevertheless, competition in domestic credit markets reflecting, in part, the effects of past liberalisation initiatives as well as the “measured” increases in US interest rates, should ensure that credit conditions remain accommodative.

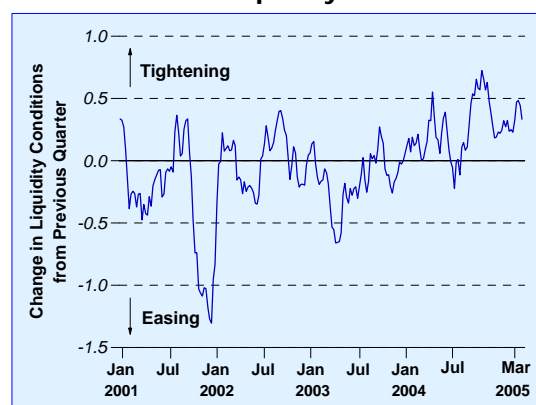
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#### The S\$REER remained relatively low in 2004.

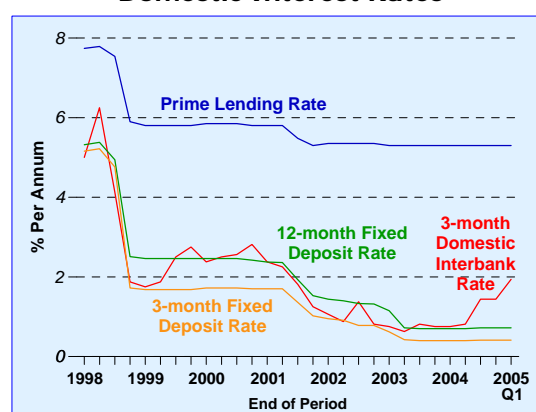
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The S\$ real effective exchange rate (S\$REER) – which adjusts the S\$NEER for relative price and cost movements in Singapore vis-à-vis those of its competitors – has trended down since 2001, and remained at a relatively low level in 2004. (Chart 1.36)

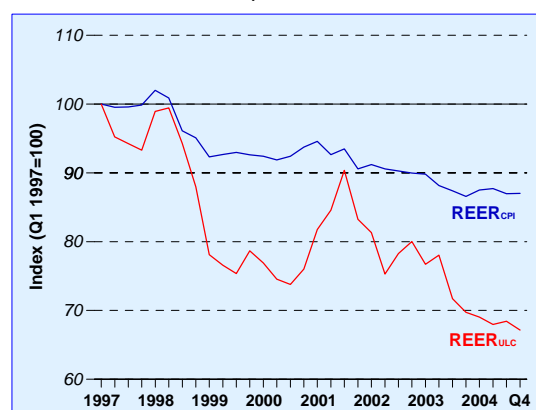
**Chart 1.34**  
Domestic Liquidity Indicator



**Chart 1.35**  
Domestic Interest Rates

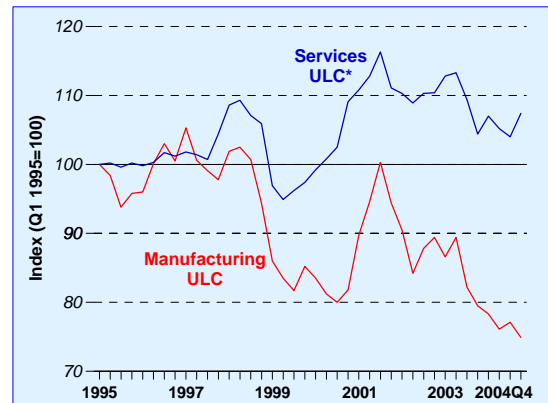


**Chart 1.36**  
S\$REER



The S\$REER deflated by the CPI increased slightly in Q4 2004 on a sequential basis. Even though domestic CPI inflation was lower than foreign inflation, this was not sufficient to offset the strengthening of the S\$NEER. Using manufacturing unit labour cost (ULC) as a deflator, the S\$REER continued to fall in 2004 due to an improvement in productivity and the lowering of the salary ceiling for Central Provident Fund (CPF) contributions from 1 Jan 2004.<sup>4</sup> Indeed, manufacturing ULC has declined steadily since 2001, a trend also apparent in the services sector. Based on EPD's estimates, services ULC has trended down from its peak in Q3 2001, and has fallen further since the Sars outbreak in Q2 2003, even as it remained higher than manufacturing ULC.<sup>5</sup> (Chart 1.37)

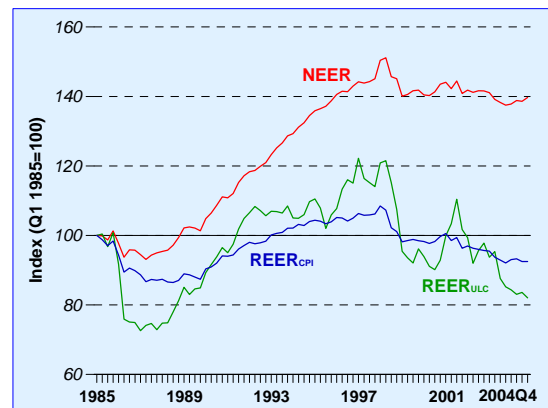
**Chart 1.37  
Manufacturing and Services  
Unit Labour Cost**



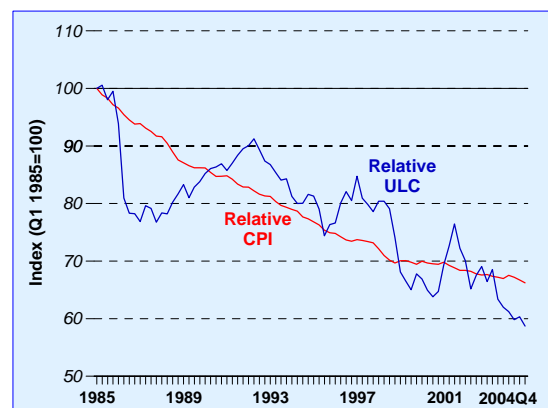
\* EPD, MAS internal estimates

Chart 1.38 shows the longer-term movements of the S\$NEER and S\$REER. Following the secular rise over the high growth period of 1990-1997, the S\$NEER has been on a mild declining trend after a 7% downward adjustment during the Asian crisis. The S\$REER series, deflated by manufacturing ULC or the CPI, have similar profiles since 1998, as prices and costs in Singapore have fallen more rapidly relative to our trading partners. (Chart 1.39) Compared to 1985, the REER series are now some 18% and 8% lower, respectively.

**Chart 1.38  
S\$NEER & S\$REER**



**Chart 1.39  
Relative ULC and CPI**



<sup>4</sup> The salary ceiling was lowered from \$6,000 to \$5,500.

<sup>5</sup> For details on EPD's services cost index, please see Box Item B in Chapter 3.

## FISCAL POLICY

### The government recorded a smaller primary deficit in 2004.

The government recorded a primary deficit<sup>6</sup> of \$2.1 billion (1.1% of GDP) in CY2004, smaller than the \$2.5 billion (1.6% of GDP) in CY2003. (Chart 1.40) The decline in the deficit reflected a relatively larger increase in operating revenue due to the robust economic conditions last year, which more than offset the rise in expenditure.

### Asset taxes and GST contributed significantly to the increase in operating revenue.

Operating revenue rose by \$1.7 billion in CY2004 to \$26.3 billion (14.6% of GDP), mainly driven by stronger collections from asset taxes (i.e. property tax and estate duty) and GST. (Chart 1.41) Property tax rebates – which were given out in July 2001 as part of the off-Budget package to lower business costs, and subsequently extended to end-2003 with the onset of Sars – were withdrawn in 2004 as the economy recovered from the downturn. GST collections increased appreciably last year, reflecting the increase in private consumption as well as the hike in the tax rate from 4% to 5% with effect from 1 Jan 2004. Improved consumer sentiment boosted property transactions and underpinned the increase in stamp duty collections.

Meanwhile, the increase in personal and corporate income tax collections was relatively modest despite the strong economic growth in 2004. This could be explained by the preceding year basis of income tax assessment, with taxes payable on income earned in the previous calendar year. Hence, the strong income growth last year will only show up in income tax collections in 2005.<sup>7</sup>

### Revenue collections from GST, stamp duty and fees & charges have fluctuated closely with GDP.

In general, operating revenue has tended to track the performance of the economy. (Chart 1.42) The annual

Chart 1.40  
Primary Surplus/Deficit

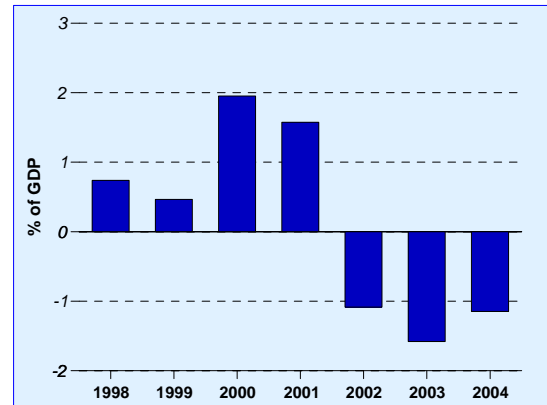


Chart 1.41  
Components of Operating Revenue

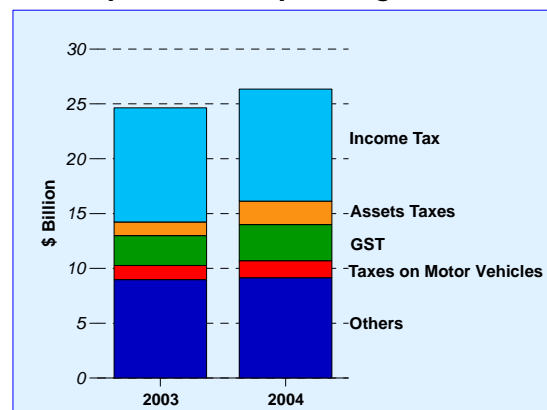
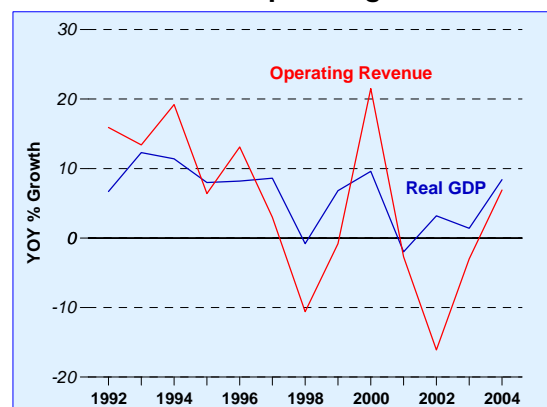


Chart 1.42  
Real GDP and Operating Revenue



<sup>6</sup> Primary surplus/deficit is defined as operating revenue (excluding net investment income contribution) less operating and development expenditure.

<sup>7</sup> Note that the lag is shorter for corporate income tax than for personal income tax, as companies are required to file their tax returns three months after the close of their financial year based on estimates of their chargeable income for that year.

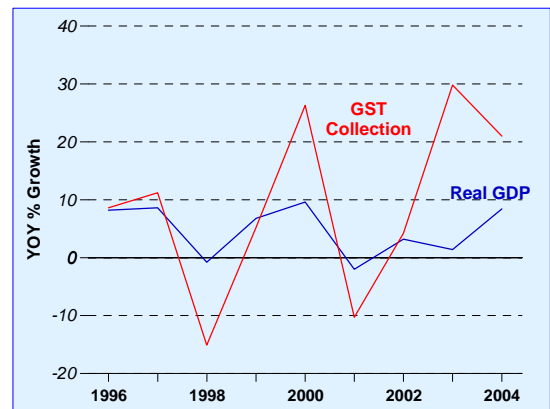
growth of all the major components of operating revenue – including direct and indirect taxes, as well as non-tax revenue – was closely-related to real GDP growth over the period 1992-2004. In particular, correlation coefficients in the range of 0.6 to 0.9 were recorded for GST, fees & charges, and stamp duty. (Charts 1.43 and 1.44) Stamp duty collections reflect the volume and value of property transactions which are, in turn, underpinned by consumer sentiment. Similarly, GST is essentially a tax on consumption and revenue will increase in tandem with a rise in spending, while collections from fees & charges mainly comprise vehicle quota premiums (i.e. COEs). These three components, termed “business cycle-sensitive” revenue (BCSR) together account for around 29% of total operating revenue in 2004, and 44% of the increase in total revenue from 2003. Note that this classification does not include income tax revenue, due to its lagged response to a pickup in economic activity, as mentioned earlier.

**BCSR did not improve as rapidly in the current economic cycle.**

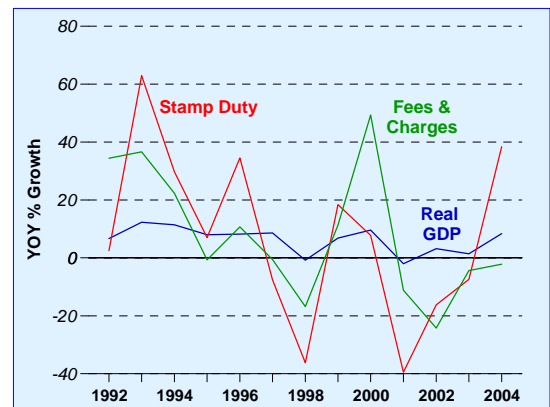
The improvement in operating revenue in 2004 was relatively slow compared to the previous economic recovery following the 1998 Asian crisis. In Chart 1.45, real GDP and BCSR are indexed to a value of 100 at the trough of the economic cycle in 1998, and in 2001 following the burst of the tech bubble, thus depicting the movement in revenue relative to the recoveries from their respective troughs. Following the downturn in 1998, BCSR grew at a faster pace than GDP over the subsequent two years. In comparison, after the 2001 downturn, such revenue items actually declined in the first year and remained below the trough level despite the steady improvement in economic activity over the last two years.

Looking at the individual components of the BCSR, GST collections had risen as expected, in tandem with the economic recovery from 2001. (Chart 1.46) It was also boosted by the 1% point increase in the GST rate in 2003 and 2004. The relatively slower pickup in BCSR in this current cycle was largely due to the fall in fees & charges. In particular, the revenue from COE collections decreased in 2002, as the COE quota fell sharply in Apr-Oct 2002, with the quota for Category A recording the largest decline, before picking up towards the end of the year. (Chart 1.47) At the same time, the increase in stamp duty collections was fairly modest during the latest economic recovery, given the prevailing

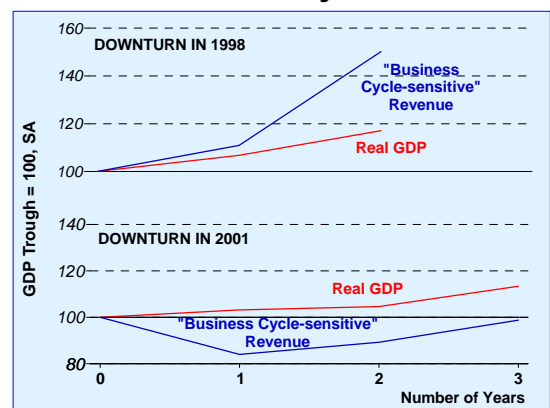
**Chart 1.43  
Real GDP and GST Collections**



**Chart 1.44  
Real GDP and Collections from Fees & Charges and Stamp Duty**



**Chart 1.45  
Comparison of Revenue Growth across Business Cycles**



cautiousness amongst prospective property buyers. Sentiments were also dampened by the Sars outbreak in the second quarter of 2003, which derailed the incipient recovery in the property market.

The underperformance of BCSR in the current cycle is therefore explained by specific factors peculiar to the recent recovery. Historically, such revenue has remained fairly stable at around 4-6% of GDP, compared to large fluctuations in the rest of the revenue components, which fell from as high as 18% of GDP in 1992 to just 10% in 2004, largely due to the fall in income tax rates. (Chart 1.48) As a proportion of GDP, income tax collections have declined since 2001 on the back of the gradual reduction in income tax rates, a trend that is expected to continue as further rate cuts take effect over the next few years.

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**Both operating and development expenditure increased in 2004.**

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Government expenditure rose by \$1.2 billion in CY2004 to \$28.4 billion (15.7% of GDP), largely due to greater spending on transport, health, and community development and sports. Both operating and development expenditure contributed almost equally to the increase in total spending during the year.

Development expenditure increased by 6.7% in 2004 to \$8.5 billion (4.7% of GDP), with a large part of the spending channelled into the construction of the Deep Tunnel Sewage System and the resumption of public housing projects. However, overall development expenditure was capped by the deferment and delay of several large development projects, including the construction of the Circle Line and the Kallang-Paya Lebar Expressway, and the redevelopment of Changi Prison. Meanwhile, operating expenditure – which has on average accounted for about two-thirds of total expenditure – grew at a slightly slower pace of 3.6% to \$19.9 billion in 2004. (Chart 1.49)

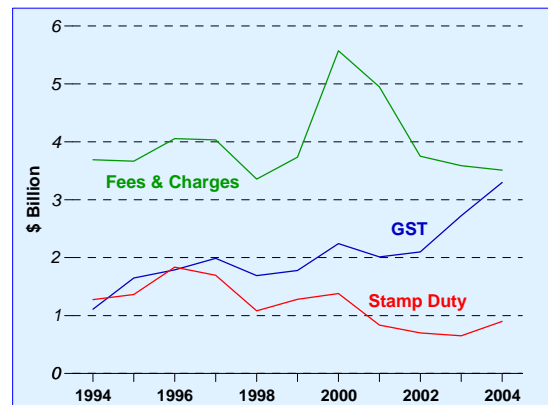
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**Fiscal stimulus was withdrawn as the economy picked up.**

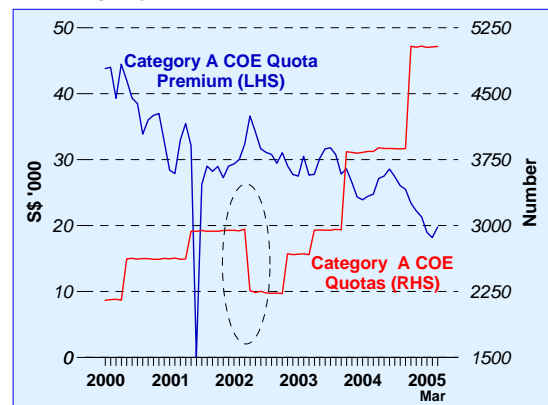
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The FI measure provides a useful summary of the overall fiscal stance. A positive (negative) FI measure implies a more expansionary (contractionary) fiscal stance compared to the previous year. As shown in Chart 1.50, the FI measure turned slightly negative in 2004, following a neutral fiscal policy stance in 2003

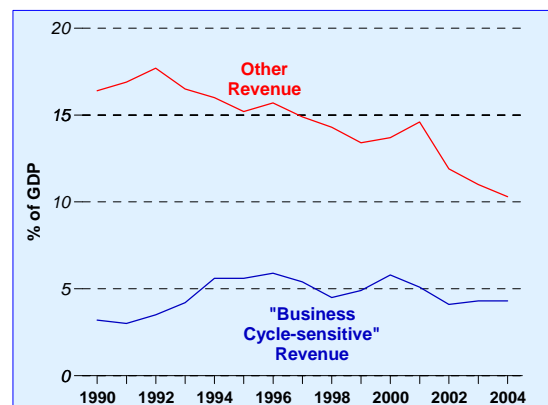
**Chart 1.46**  
Revenue from "Business Cycle-sensitive" Items



**Chart 1.47**  
Category A COE Quota and Premiums



**Chart 1.48**  
"Business Cycle-sensitive" and Other Revenue

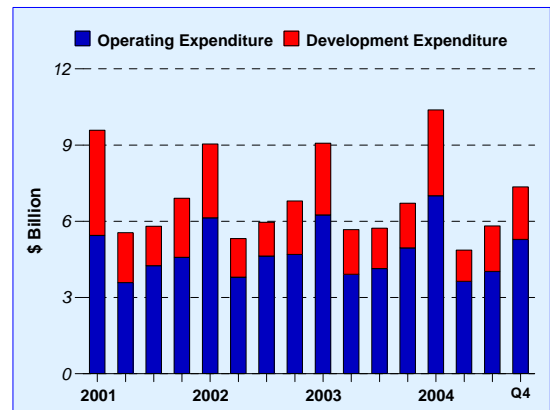




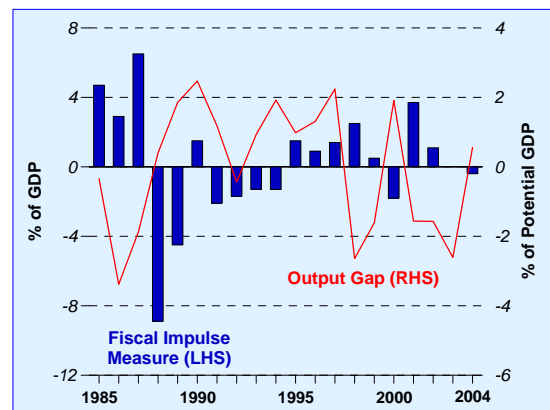
and an expansionary stance over the period 2001-2002. This finding is similar to that released by the Ministry of Finance (2005) in its *Budget Highlights*. A withdrawal of the fiscal stimulus is appropriate at this stage of the business cycle, given the improvement in underlying economic conditions and turnaround to a positive output gap since the middle of 2004. In fact, a comparison with the FI measure in 2000, a similar point in the previous economic cycle (following the outbreak of the Asian crisis), shows that the extent of the withdrawal this time round was significantly smaller.

In general, the government has not relied heavily on direct public expenditure to stimulate the economy due to the high degree of import leakage for public spending. Indeed, the contribution of total government consumption and investment to real GDP growth was negative over the past three years from 2002-2004, partly due to the slowdown in public housing construction. (Chart 1.51) Instead, the government's efforts have been targeted at alleviating the cost constraints faced by businesses and households during an economic downturn, in order to facilitate the recovery process and position Singapore to take full advantage of the eventual turnaround in the economy. The bulk of the fiscal measures put in place over the past few years – such as tax reductions, rebates and income transfers – would have an impact on the economy through an increase in private disposable income and business profits, and hence private consumption and investment. As shown in Chart 1.51, the private sector has been a key driver of economic growth over the years.<sup>8</sup>

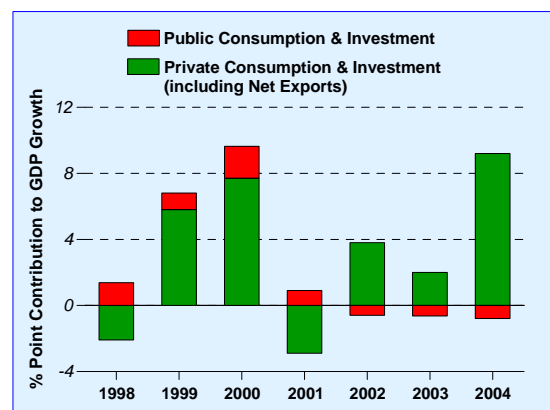
**Chart 1.49**  
**Government Expenditure Components**



**Chart 1.50**  
**FI Measure**



**Chart 1.51**  
**% Point Contribution of the Public and Private Sectors to Real GDP Growth**



<sup>8</sup> Please refer to Section 5.7 of the January 2003 issue of the *Macroeconomic Review* for further discussion on the direct and indirect channels of a fiscal boost.

## References

Ministry of Finance (2005), "Creating Opportunity, Building Community", *Budget Highlights, Financial Year 2005/2006*, p.15,  
<[http://www.mof.gov.sg/budget\\_2005/budget\\_speech/downloads/FY2005\\_Budget\\_Highlights.pdf](http://www.mof.gov.sg/budget_2005/budget_speech/downloads/FY2005_Budget_Highlights.pdf)>.

Amiti, M (2005), "Quality Upgrading and Low Wage Competition: Evidence from Singapore", *Singapore: Selected Issues*, 18 January, International Monetary Fund: Washington, forthcoming.

## 2 Financial Market Developments

### 2.1 International Financial Markets

During the five-month period from October 2004 to February 2005, global financial markets generally performed well, with rallies seen in both equity and bond markets on expectations of continued economic growth with low inflation. In March and early April 2005, financial markets gave up some of the earlier gains, as long bond yields rose and investors became concerned about corporate earnings growth in the face of record high oil prices and signs of softer demand conditions in the major economies. Although the US\$ has retraced some of its losses against the major currencies this year, worries remain as to the sustainability of the US current account deficit.

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**Monetary policy in the US tightened while that of Japan and Europe remained unchanged.**

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In the US, the Fed has raised interest rates in four increments of 25 bps since September 2004, bringing the Fed funds rate to its current 2.75%. (Table 2.1) Market players expect the policy rate to rise to 3.8% by year-end, a further increase of 105 bps. Although US monetary policy has tightened somewhat, it remains accommodative, with the nominal rate still low relative to prevailing inflation.

In Europe, the ECB left official interest rates on hold at 2% since June 2003. With the inflation outlook likely to remain generally benign on the back of weak economic performance as well as a high unemployment rate, the ECB is expected to keep interest rates on hold in the immediate future.

The Bank of Japan (BOJ) kept its target for the outstanding balance of current accounts held at the Bank at 30-35 trillion yen. However, the BOJ has hinted that it is seeking to move away from quantitative easing, although no clear exit strategy has yet been announced.

**Table 2.1**  
**Key Financial Market Indicators**

Interest Rates & Current Account Balance			
	Level as at 30 Sep 04	Level as at 31 Mar 05	Change
Fed Funds Target Rate	1.75%	2.75%	100 bps
BOJ Overnight Call Rate	0.005%	0.022%	1.7 bps
ECB Minimum Repo Bid Rate	2.00%	2.00%	0 bps
Current Account Balance at BOJ (Trillion Yen)	35.1	35.8	0.7

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**Long-term yields fell despite monetary tightening, although they picked up strongly since February 2005.**

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Long-term government bond yields generally fell throughout the period October 2004 to February 2005, despite widespread expectations of monetary policy tightening by the Fed. However, long-term yields picked up strongly alongside remarks by Fed Chairman Alan Greenspan in February, that the drop in yields was a “conundrum” that might turn out to be a short term aberration. Long-term yields in Japan, however, tumbled in March as economic indicators in February raised concerns about the sustainability of Japan’s economic recovery. (Chart 2.1)

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**Global equity prices have fallen in recent months on earnings concerns.**

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Stock prices trended upwards between October and December 2004 on the back of optimism over growth prospects in the new year. Markets corrected in January 2005, reflecting disappointing corporate results, but rebounded in February. Global equity markets corrected again in March on concerns that US corporate profits would be adversely affected by a slowdown in demand and higher oil prices. Uncertainties over the pace of rate hikes due to higher-than-expected gains in consumer prices also contributed to the slump. In Japan, equities were weighed down by oil prices as well as the poor showing in the Tankan survey. (Chart 2.2)

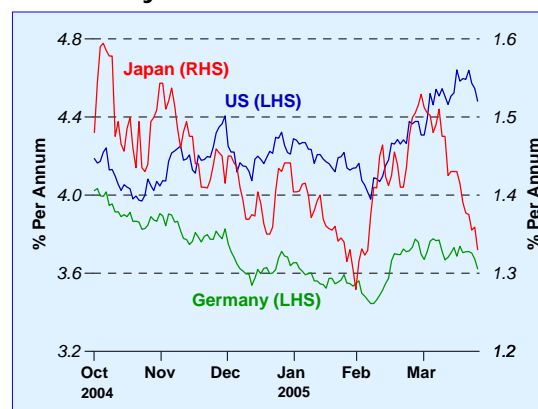
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**The US\$ has lost some of its earlier gains on fears over the sustainability of the US current account deficit.**

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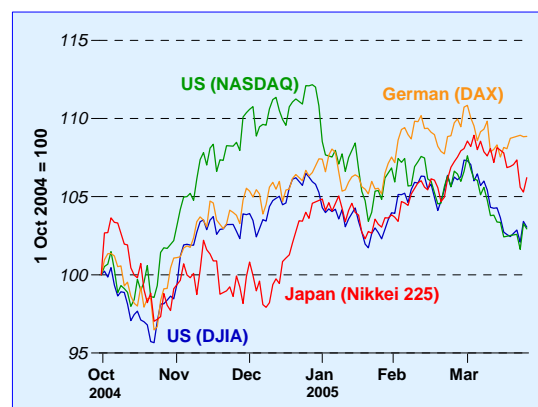
The unwinding of large short US\$ positions at the beginning of 2005 led to a partial recovery of the US\$, following the marked depreciation of the greenback, vis-à-vis the euro and yen, in Q4 2004. However, the US\$ fell again in February, due in part to continuing concerns over the large US current account deficit – which amounted to 5.7% of GDP in 2004 – and related worries over central banks diversifying away from US\$-denominated assets. The dollar rose again recently in the wake of the FOMC policy statement expressing concern over inflationary pressures, and on expectations of a further widening in the interest rate differential between the US and its counterparts. (Chart 2.3)

**Chart 2.1**  
**Yields on G3**  
**10-year Government Bonds**



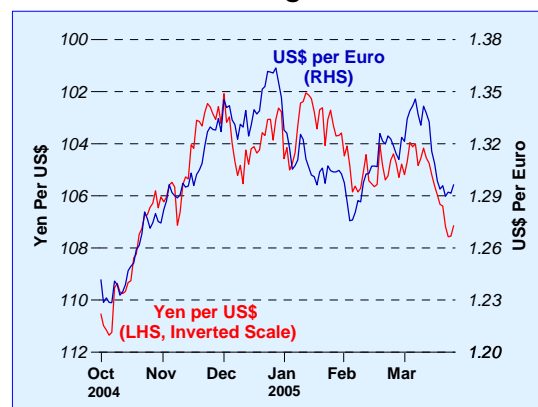
Source: Bloomberg

**Chart 2.2**  
**Industrial Countries’**  
**Stock Market Indices**



Source: Bloomberg

**Chart 2.3**  
**Yen and Euro Against the US\$**



Source: Bloomberg

## 2.2 Regional Financial Markets

### Asian short-term rates remained low.

Despite China's unexpected move to raise its one-year lending rate to 5.58% in October 2004, short-term rates in the Northeast Asian economies remained low, amid uncertainties over economic growth prospects. The Bank of Korea cut its overnight call rate again in November 2004 by 25 bps, to a record low of 3.25%, in response to sluggish domestic demand and investment. In comparison, a recent surge in the outflow of funds from Hong Kong on the back of expectations of higher global interest rates has pushed up the 3-month interbank rate by about 240 bps from the low in November 2004. (Chart 2.4)

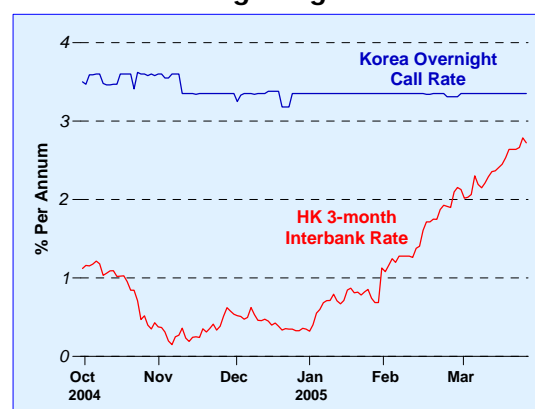
In Southeast Asia, Indonesia and Malaysia have thus far refrained from raising their policy interest rates. The BOT was the first to tighten, raising policy rates by a cumulative 75 bps since October 2004, to contain the build-up in inflationary pressures in the economy. (Table 2.2) In April 2005, Bank Indonesia and the Bangko Sentral ng Pilipinas also started to raise policy rates.

### Asian currencies saw a broad appreciation against the US\$.

Strong capital inflows into Northeast Asia on the back of expectations of renminbi revaluation have led to a strengthening of the region's currencies vis-à-vis the US\$. The Korean won was the strongest performer among the region's currencies, appreciating by 12% against the US\$ since October 2004. The NT\$ has also appreciated sharply since November, reflecting weakness in the US\$ and strong equity capital inflows. (Chart 2.5)

Southeast Asian currencies have also broadly appreciated against the greenback due, in part, to continued US\$ weakness. The Thai baht has gained about 6% against the US\$ since October 2004. In contrast, the Indonesian rupiah has weakened against the US\$, as higher imports of raw materials, debt repayments and higher oil prices weighed on the currency.

**Chart 2.4**  
Korea and Hong Kong Interest Rates



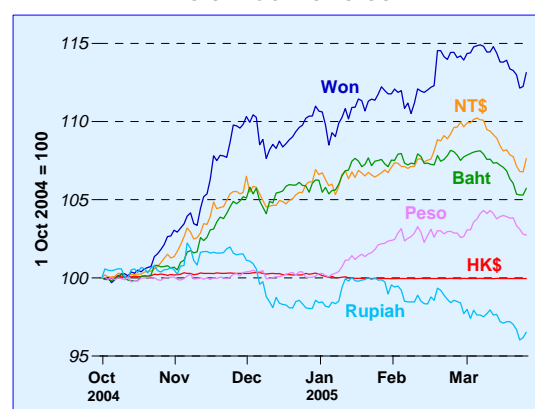
Source: Bloomberg, CEIC

**Table 2.2**  
ASEAN-4 Policy Rates

	Level as at 20 April 2005 (%)	Change from year ago (bps)
Indonesia	7.25	25
Malaysia	2.70	-
Philippines	7.00	25
Thailand	2.25	100

Source: CEIC, official releases

**Chart 2.5**  
US\$ Against Selected Asian Currencies



Source: Bloomberg

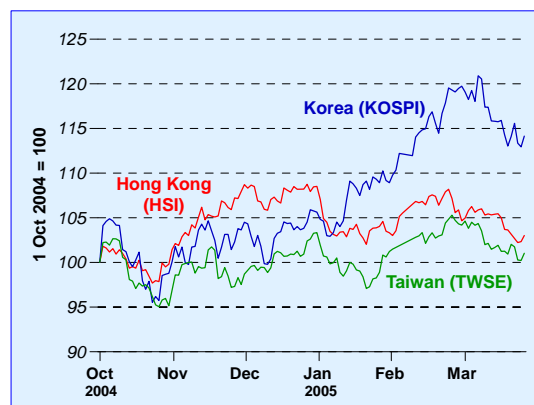
### Asian stock markets were supported by large foreign inflows.

In Northeast Asia, Korean stocks were bolstered by policy rate cuts, signs of a sustained economic recovery, as well as improved corporate governance on the part of Korean companies while Hong Kong equities were initially lifted by strong inflows on the back of renminbi-related speculation. Since March 2005 however, concerns over the impact of higher-than-expected interest rates and oil prices have weighed on these bourses. In Taiwan, the positive impact from earlier foreign inflows on the back of the MSCI upgrade was offset by concerns over the passing of the anti-cessionation law in China, the IT slowdown, higher interest rates and oil prices. (Chart 2.6)

Southeast Asian stock markets continued their broad rally from late August 2004,<sup>1</sup> lifted by strong performances of corporates in the region. (Chart 2.7) Nevertheless, higher oil prices have remained a key risk for regional bourses. The rally in the Thai stock market has been tempered by the strong gains in 2003 which resulted in high valuations. In addition, investor sentiment has been weighed down by concerns over the impact of higher oil prices and the withdrawal of foreign portfolio funds.

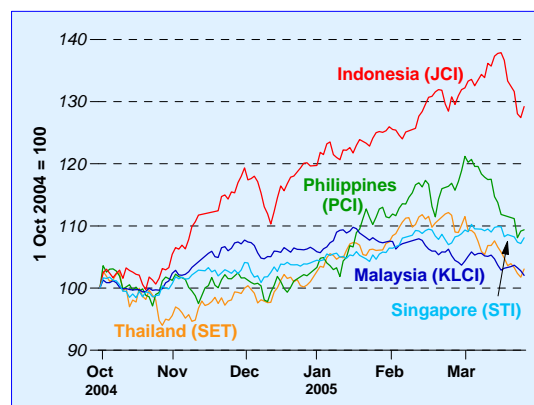
In the Philippines, the stock market has rallied strongly following an initial correction in August 2004 due to concerns over the country's rising national debt.<sup>2</sup> The 2005 Valentine's Day bombings and Moody's rating downgrade did not have a significant negative effect on the Philippine stock market, which closed at a five-year high in February on strong buying support from both local and foreign investors. In March, the market retraced some of its gains, along with the declines in other regional stock markets.

**Chart 2.6**  
Northeast Asian Stock Market Indices



Source: Bloomberg

**Chart 2.7**  
Southeast Asian Stock Market Indices



Source: Bloomberg

<sup>1</sup> The exception being a brief pause at the end of December 2004 following the Asian tsunami disaster.

<sup>2</sup> The rally was initially facilitated by positive investor sentiment following the peaceful conclusion of last year's presidential elections.

## 2.3 Domestic Financial Markets

### The S\$ weakened against most of the major and regional currencies during the past two quarters.

The final quarter of 2004 saw the S\$ closing weaker against most of the major currencies, except for the US\$. (Chart 2.8) The domestic currency weakened vis-à-vis the euro, yen and AUS\$, by 5.8%, 3.8% and 3.8% respectively. The broad weakness of the US\$ resulted in a 3.2% appreciation of the S\$ against the greenback, as well as against US\$-linked currencies such as the renminbi and the ringgit in Q4 2004.

Bilateral movements of the S\$ against the major currencies were generally more volatile in Q1 2005. After dipping slightly against the US\$ in early February, the S\$ appreciated steadily in the ensuing weeks before falling markedly in late March, on concerns that funds were leaving Asia as investors expected US interest rates and yields on US\$-denominated assets to rise. Over the same period, the domestic currency also appreciated relative to the euro and the yen, while holding steady against the AUS\$.

Against the Asian currencies, the S\$ generally weakened over the Oct 2004 – Mar 2005 period. (Charts 2.9 and 2.10) The domestic currency ended the period lower vis-à-vis the Korean won, the NT\$ and the Thai baht, with the largest depreciation of 9.4% being recorded against the won. Relative to the Indonesian rupiah however, the S\$ recorded a marked appreciation of 6.0%, while performance against the Philippine peso was largely flat.

### Domestic interest rates rose following two years of relative stability.

Domestic interest rates picked up decisively in the second half of 2004, taking their cue from the series of rate hikes in the US. Having remained below 1% for most of the past two years, the 3-month domestic interbank rate turned up sharply between June 2004 and March 2005 to end the period at 2.13%. (Chart 2.11) The 3-month US\$ SIBOR likewise surged to recent highs, rising by 150 bps to 3.11% as at end-March, from 1.61% as at end-June last year. Consequently, the differential between these two benchmark rates widened to 98 bps. Retail interest rates, however, remained soft, as keen competition resulted in a general reluctance on the part of banks to match the increases in their cost of funds.

Chart 2.8  
S\$ Against G3 Currencies and AUS\$

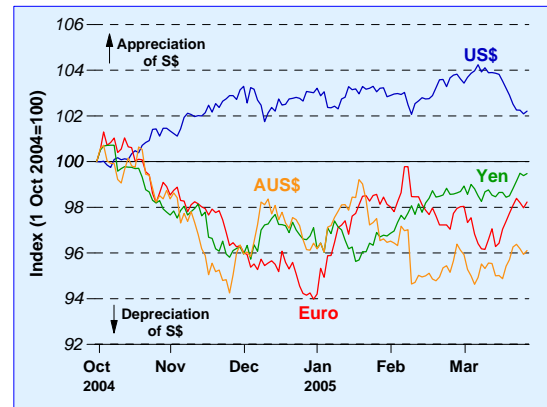


Chart 2.9  
Change in S\$ Against Foreign Currencies (31 Mar 2005 over 1 Oct 2004)

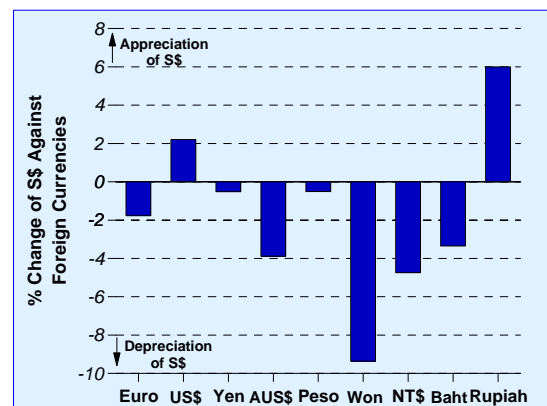
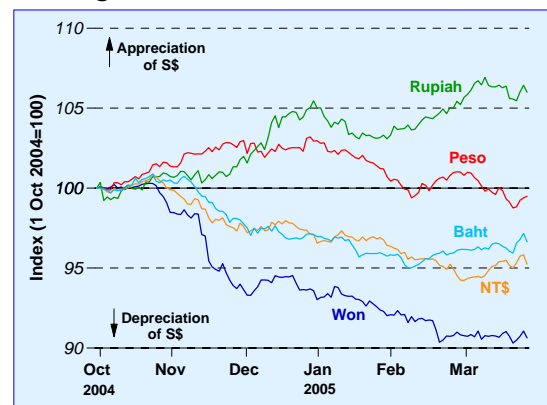


Chart 2.10  
S\$ Against Selected Asian Currencies



The prime lending rate remained unchanged at 5.3% as at end-March 2005, while the 3-month and 12-month fixed deposit rates continued to hover at 0.41% and 0.72% respectively.

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**SGS yields eased somewhat in Q4 before strengthening in early 2005.**

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Reflecting in part concerns over growth prospects for the year ahead, yields of longer-term Singapore Government Securities (SGS) retreated over the final months of 2004 (Chart 2.12), even though US treasury yields remained relatively stable over the same period. In comparison, SGS yields at the shorter end of the spectrum were generally flat heading into 2005.

Nonetheless, yields across the different maturities began to head north at the turn of the year, partly due to a lagged catch-up effect vis-à-vis the US Fed funds rate. Movements in SGS yields thereafter broadly mirrored those of US treasury paper, generally remaining muted before picking up again in late-February, following remarks by Fed Chairman Alan Greenspan that the prevailing weakness in long-term yields was likely a "short-term aberration".

With similar upturns in yields across the maturity spectrum since the start of 2005, the SGS yield curve registered little change in Q1, with the 1-10 year spread narrowing only slightly to 120 bps, down from 126 bps as at end-December last year. (Chart 2.13)

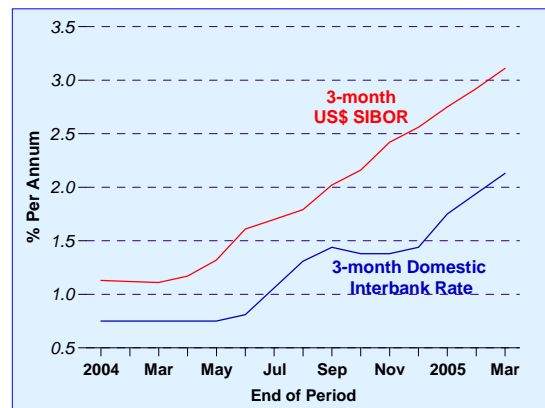
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**The rally in domestic equity prices has been sustained since the middle of last year.**

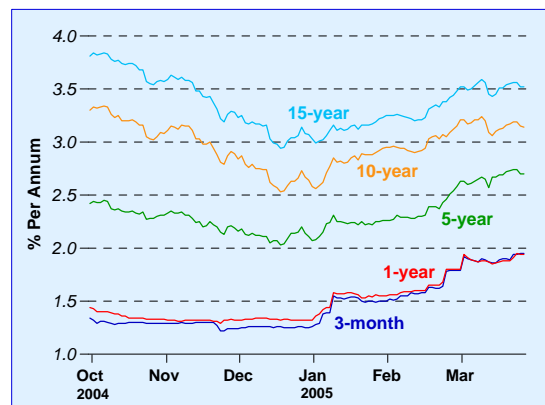
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The Straits Times Index (STI) has rallied strongly since the second half of last year. Indeed, notwithstanding brief declines in October 2004 due to jitters over rising crude oil prices, and in December on account of the China Aviation Oil corporate disclosure scandal, which sparked fears of similar issues with other China-linked listings, the run-up in domestic equity prices had brought the STI to new peaks in Q4. The STI shrugged off the Boxing Day tsunami tragedy to close the year at 2,066 points. (Chart 2.14) Investors were cheered by robust corporate earnings, easing oil prices, compelling valuations, and the incipient recovery in the domestic property market. The STI's surge extended into 2005, interrupted only briefly in February when several listed firms came under investigation for alleged corporate accounting irregularities, which cast a pall over

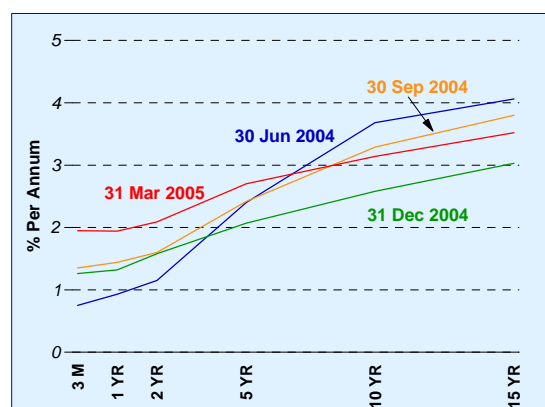
**Chart 2.11**  
**3-month Interbank Rate and 3-month SIBOR**



**Chart 2.12**  
**Yields of Selected SGS Maturities**



**Chart 2.13**  
**SGS Yield Curve**





small-caps. Domestic equity prices, nevertheless, resumed their climb shortly thereafter, as investors retreated to the relative safety of blue chip stocks. The STI eventually closed at 2,141 points as at end-March 2005. This represented a 26% increase from the trough of 1,700 points in May last year and was the highest level reached in nearly five years.

Alongside the rebound in prices on the domestic bourse, fund raising activity in the primary market also peaked in 2004. A flurry of 30 new initial public offering (IPO) listings were recorded in Q4 2004, bringing the full-year tally to 80. This considerably outpaced the already strong showing of 55 in the previous year. (Chart 2.15) In terms of gross proceeds, the \$3.6 billion raised in 2004 marked a new high, nearly doubling that in 2003. 15 more new listings were registered in the first three months of 2005, with China-linked firms continuing to dominate.

In terms of transaction activity, the performance of the local bourse in H2 2004 was less rosy, with narrowly-focused trading and relatively low market liquidity. The early months of 2005, however, saw a marked revival in trading activity, with foreign investors contributing to the resurgence in transaction volumes. With concerns over rising oil prices, US interest rate hikes, and the protracted weakness in the greenback already largely discounted, renewed investor interest translated into higher monthly average turnover, with value and volume rising by 13% and 22%, respectively in Q1 2005 from the preceding quarter. (Chart 2.16)

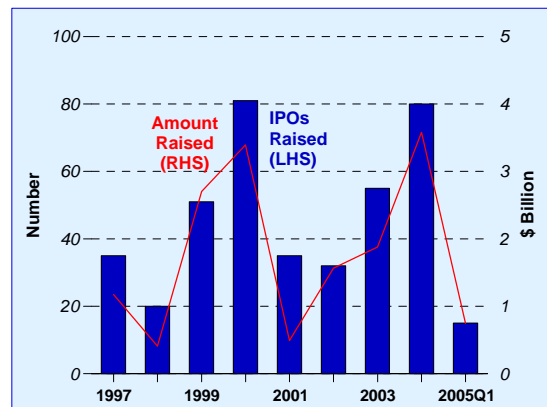
**Forex trading activity has remained robust.**

Trading activity in the domestic forex market has remained relatively robust. (Chart 2.17) To some extent, this could have reflected investors' attempts to re-align their currency exposures in the face of heightened volatility in international financial markets as the prevailing themes in the global macroeconomic environment – including the prolonged decline of the US\$, high energy prices, and speculation over the renminbi – have continued to play out strongly. Indeed, forex activity has turned out to be stronger than expected in the early months of 2005. With total turnover value reaching \$11.8 trillion in Jan-Feb this year, activity in Q1 is on track to surpass the recent quarterly average peak of \$16.5 trillion in 2004.

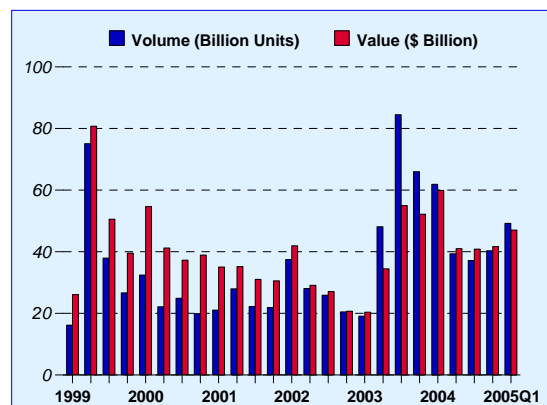
**Chart 2.14  
STI**



**Chart 2.15  
IPOs**



**Chart 2.16  
Stock Market Total Turnover**



### Non-bank lending activity has moderated somewhat.

Lending activity in the domestic banking industry has remained at fairly robust levels, although the pace of (y-o-y) expansions has slowed somewhat in recent months. After peaking in November 2004 at \$180.2 billion, the stock of outstanding loans to non-bank customers slipped to \$178.3 billion as at end-February 2005. (Chart 2.18) On a y-o-y basis, loan growth decelerated to 3.3% in February 2005, the slowest increase since November 2003.

Not surprisingly, loans to the housing sector once again accounted for the largest share of the expansion in non-bank loans. (Chart 2.19) Nevertheless, the pace of growth of such loans has come down steadily since early last year. Indeed, the 12% y-o-y expansion in housing loans registered in February 2005 was the lowest since August 2003. The downward trend in housing loan growth in Q4 last year had persisted despite the rise in private residential transactions. (Chart 2.20) This reflected in part some tapering off from the previous expansion due to the provision of HDB market rate loans by both local and Qualifying Full Banks since the start of 2003. There was also a resurgence of interest from foreign buyers in Q4 last year, many of whom would not have taken up housing loans from the domestic banking sector. To a lesser extent, the slower expansion in housing loans could also have reflected the government's crackdown on the so-called "cashback" deals offered by some property agents, which could have reduced loan quantum somewhat. The early months of 2005 have seen housing loans sliding again, even as the recovery in private housing prices has continued to gather pace. Looking ahead, the expansion in housing loans could also be weighed down by recent moves on the part of banks to raise mortgage rates.

Aside from the housing sector, credit extended to the non-bank financial institutions also made appreciable gains over the Sep 2004 – Feb 2005 period. However, lending to the industry<sup>3</sup> segments has continued to decline, slipping to its lowest levels in more than a year. (Chart 2.21) The lacklustre showing reflected to some extent an increasing cautiousness on the part of firms, with regard to the near-term business outlook. Corroborating this, a recent study by JP Morgan

Chart 2.17  
Forex Turnover

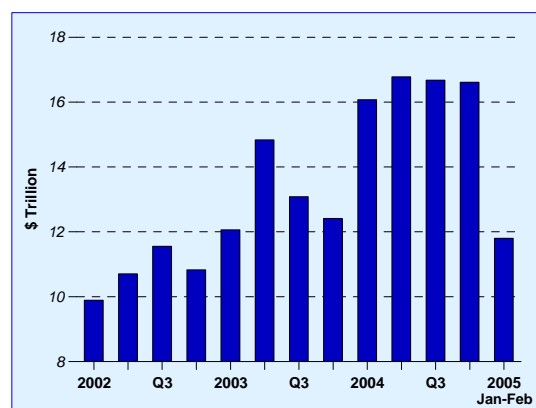


Chart 2.18  
Loans to Non-bank Customers

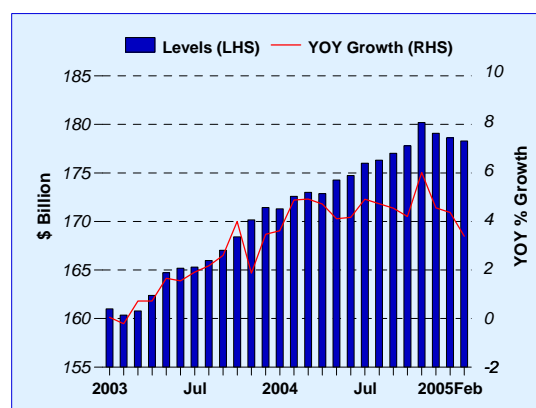
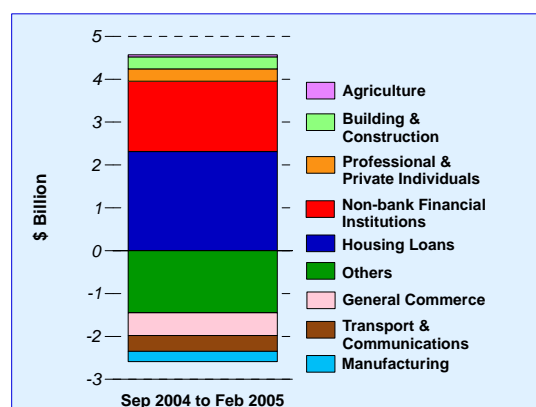


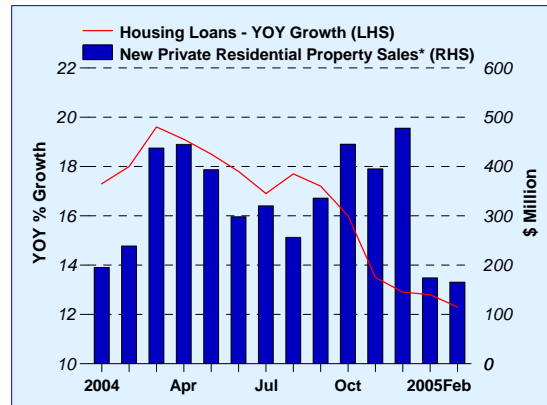
Chart 2.19  
Breakdown of Increase in Loans to Non-bank Customers



<sup>3</sup> Loans to industries include lending to the transport & communications, commerce, manufacturing, building & construction and agricultural segments.

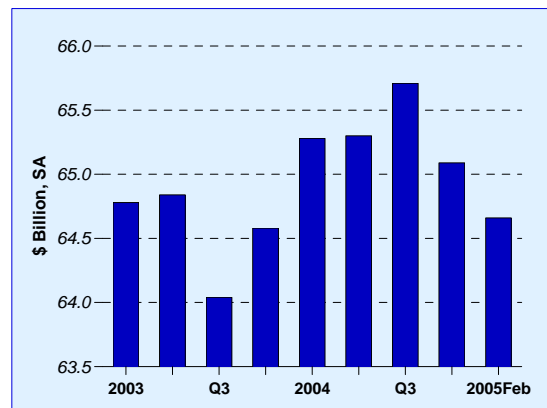
and East & Partners (Pill and Turton 2004) indicated that corporates in Singapore were scaling down their borrowing intentions in the near term. The percentage of firms surveyed which did not intend to borrow over the next 12 months doubled to 51%, up from 26% in April, amid prevailing uncertainties in the economic environment.

**Chart 2.20**  
**Housing Loans and New Private Residential Property Transactions**



\* Including executive condominiums

**Chart 2.21**  
**Loans to Industries**



\* EPD, MAS internal estimates

**References**

Pill, I and Turton, C (2004), "Singapore Banks", *JP Morgan Asia Pacific Equity Research*, 29 November.

## 3 Wage-Price Dynamics

### 3.1 Review of CPI Inflation Forecast

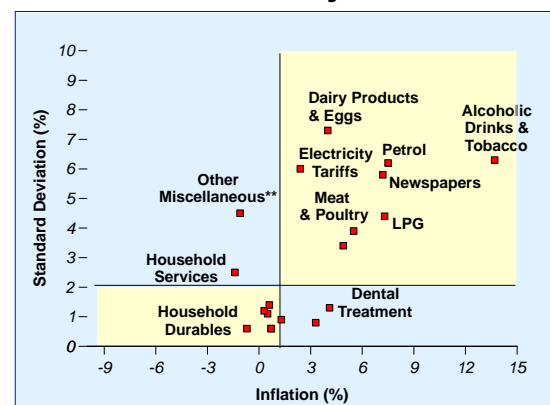
Against the backdrop of a decisive economic recovery in 2004, consumer price inflation picked up pace, after remaining fairly subdued over most of 2003. For the year as a whole, CPI inflation averaged 1.7% y-o-y, after coming in at 0.5% in 2003.

This is in line with MAS' forecast of 1.5-2% announced in the April 2004 MPS, which was revised from the earlier 0.5-1.5% range in the October 2003 MPS. The April forecast was reaffirmed in the October 2004 MPS. Although the overall forecast came in within expectations, there were several shocks or unexpected price developments during the year. In particular, several consumer items exhibited pronounced price volatility.

Chart 3.1 attempts to identify these items by plotting the inflation rates of various key consumer items for 2003-2004 (on the horizontal axis) and their respective standard deviations (on the vertical axis). Four quadrants – each defining a combination of high/low inflation and volatility – demarcated by the average inflation rate and volatility during 2003-2004, were then assembled. Items that fell into the northeast quadrant (high inflation and high volatility) were those that “surprised” on the upside, while items in the northwest quadrant (low/negative inflation and high volatility) were those that experienced lower-than-expected inflation rates.

Several observations can be made from the chart. First, the northeast quadrant encompassed mainly items that were subjected to commodity-related pressures and one-off cost adjustments, while items in the northwest quadrant were related to competitive pressures and policy measures. Second, there appears to be a disproportionate number of items falling in the northeast quadrant, suggesting that there were more unexpected upside pressures during the year.

**Chart 3.1**  
Inflation vs Volatility, 2003-2004



\* EPD, MAS internal estimates

\*\* “Other Miscellaneous” comprises largely four packages.

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**Several unexpected developments led to the upward revision in the forecast range.**

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Commodity-related shocks had pushed up consumer prices, accounting for about 50% (or 90 bps) of overall CPI inflation in 2004. Our initial assessment at end-2003 had already taken into consideration relatively high oil prices in 2004, with the NYMEX West Texas Intermediate (WTI) crude oil price expected to come in at around US\$30-35 per barrel, after averaging US\$31 in 2003. This was actually somewhat higher than what the futures market was anticipating in October 2003 when MAS announced its initial forecast range. (Chart 3.2) Nonetheless, the surge in prices over the year surprised most analysts and the markets, with prices eventually averaging much higher at US\$41 in 2004, and even hitting a record high of US\$56 at one point. As higher global oil prices filtered through to the domestic economy, price increases in oil-related consumer items in the CPI basket also turned out to be more significant than anticipated.

Apart from developments in the global oil market, there were several unexpected food shocks. (See Section 3.2 below.) In particular, the impact of the bird flu outbreak in August on the CPI was fairly significant, as the ban on poultry and egg imports from Malaysia led to a sharp spike in the prices of these products. The discovery of cancer-causing agents in regional seafood supplies, and the Agri-food Veterinary Authority of Singapore's (AVA) decision to destroy nine batches of seafood, also pushed up prices temporarily.

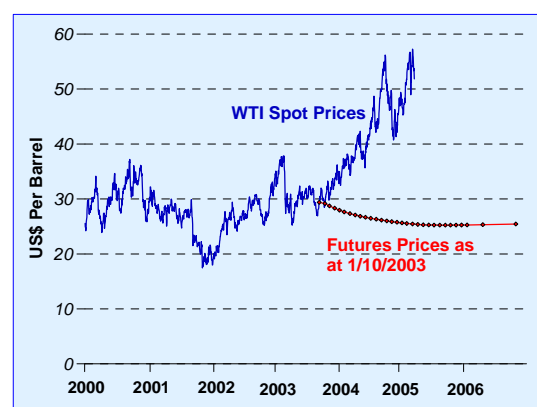
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**Impact of competition on CPI was greater than envisaged at the beginning of the year.**

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Despite these unexpected upward pressures on consumer prices, overall CPI inflation was mitigated by structural adjustments in certain sectors of the economy, which exerted downward pressure on prices. For example, the intensification of competition in the domestic petrol industry at the retail level resulted in more aggressive discounts being offered, and for a more extended period of time, muting the pass-through of high global oil prices to consumers. Likewise, the price declines of travel-related items were more significant than expected, due to competitive pressures in the industry with the entry of budget airlines.

**Chart 3.2**  
**Oil Prices and Futures Prices**



Source: Bloomberg

## 3.2 Consumer Price Developments

### Consumer prices rose at a more measured pace in H2 2004 after a sharp run-up in H1.

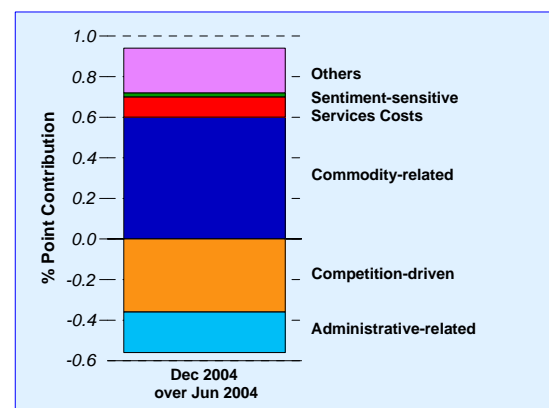
After a fairly sharp run-up in the earlier part of 2004, the momentum of consumer prices slowed considerably in recent months. Following the gain of 1.1% in H1 2004, the CPI rose at a more measured pace of 0.4% over H2. Although consumer prices in H1 were pushed up by the Goods and Services Tax (GST) hike to some extent, the impact of the tax increase appeared to be fairly muted. In fact, the steep rise in the CPI over the period was driven more by the pass-through of various cost increases and commodity-related shocks, which were estimated to contribute around 0.7% points to the overall increase. In comparison, the more moderate rise in the CPI in H2 was largely on account of increased competition in certain sectors of the economy, although the supply-side factors that prevailed in H1 continued to influence price outcomes. Chart 3.3 provides a summary of the various underlying drivers behind the CPI increase in H2. The following sections discuss in greater detail, the key developments that have influenced consumer price dynamics in recent months.

### External price pressures intensified as global oil prices surged to unprecedented levels.

Price pressures in the external environment increased further in H2 2004, largely stemming from commodity-related shocks.

In particular, global oil prices continued to scale new peaks. After breaching the US\$40 mark earlier in H1, WTI oil prices rose further to a record-high of US\$56 per barrel in late October. (Chart 3.4) A combination of factors contributed to the rally in global oil prices last year. First, around 27% of the Gulf of Mexico's daily production of 1.7 million barrels was disrupted for an extended period of time due to Hurricane Ivan. This caused commercial inventories to tumble to as low as 270 million barrels in late September – below the 300 million barrels which most analysts see as a key comfort level for crude oil stocks. Second, there were concerns that the bankruptcy of Russia's largest oil company, Yukos, could affect supplies. Third, attacks on Iraq's oil infrastructure which had cut the country's oil exports by half, to around 900,000 barrels per day (bpd), raised fears of further supply disruptions.

**Chart 3.3**  
Main Factors Contributing to  
CPI Increase in H2 2004



\* EPD, MAS internal estimates

**Chart 3.4**  
West Texas Intermediate Oil Prices



Source: Bloomberg

Following a brief respite in December 2004, prices soared to record levels again in early 2005, due to a tight demand-supply outlook and weakness in the US\$. Indeed, there were concerns in the markets that growing demand from industrialising countries, such as China, had outpaced supply. Moreover, a number of non-OPEC countries, including Russia, continued to experience supply difficulties. In addition, OPEC's decision to raise its production limit by 500,000 bpd in March 2005 failed to halt the rally in global oil prices. In fact, many analysts are concerned that OPEC's output hike would leave it with little spare production capacity to deal with unexpected supply shortages.

The volatility in global oil prices had a direct impact on consumer prices via its pass-through into items with significant oil content in the CPI basket. These items make up around 5% of the basket, and include electricity tariffs and petrol. They experienced varying degrees of price increases during the second half of the year, depending on the structures of the respective markets and industries. (Chart 3.5)

High oil prices also had an indirect effect on consumer prices. For example, rising fuel costs resulted in higher operating costs for airlines, forcing them to hike the fuel surcharges that they had imposed earlier on air tickets. At the same time, food operators who were hit with higher utility bills may have passed on some of these costs to consumers.

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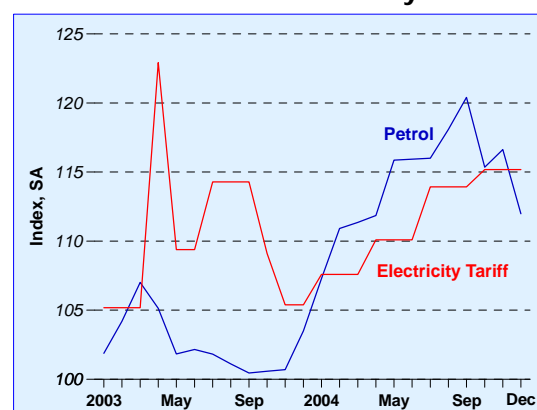
#### Food-related shocks caused spikes in domestic food prices.

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Food-related shocks were another source of inflationary pressures during H2 2004. In particular, the bird flu in the region led to a spike in poultry product prices, as the AVA imposed a blanket ban on Malaysian poultry and related products in August. Given that Malaysia is the main supplier of poultry products such as eggs and chicken to Singapore, the ban led to an acute shortage of these products. Prices of eggs rose by as much as three times, while chicken prices increased by around 30%. (Chart 3.6) While supplies from other countries, such as Australia, were brought in to ease the shortage, these tended to be more expensive.

Although the ban was partially lifted in late September, with Johorian and Malaccan poultry products allowed into Singapore, prices rose further. Malaysian poultry exporters had to put in place stringent checks to

**Chart 3.5**  
**Petrol Prices and Electricity Tariffs**



**Chart 3.6**  
**Poultry and Eggs Prices**



\* EPD, MAS internal estimates

gain accreditation from the AVA, which raised costs for suppliers.

Food-related shocks, such as the recent bird flu, appear to have become increasingly common in recent years. (Chart 3.7) In general, a food scare affects prices through two routes. On the supply side, an acute shortage leads to a sharp rise in prices. On the demand side, fear of contracting diseases from consuming the product could lead to an avoidance of that item, which eases the pressure on prices to some extent. In the recent bird flu outbreak in H2 2004, poultry prices spiked up due to the shortage, even though some consumers avoided the consumption of chicken altogether.

### Domestic costs have also been driving consumer prices upwards.

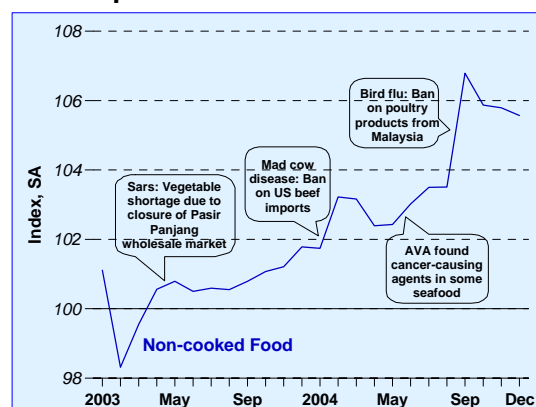
Domestic costs have been driving consumer prices upwards. Wages, including employers' CPF contributions, rose by an average of 1.2% in 2002-2004 after the recent downturn, although this remained significantly lower than the wage growth of 4.6% between 1995 and 2001. (Chart 3.8) Although productivity growth was fairly strong in the earlier period, it still fell short of the wage gains. As a result, unit labour costs rose by an average of 0.8% over the period 1995 to 2001, before contracting between 2002 and 2004 by around 2%.

Although unit labour costs have been fairly subdued recently, the accumulation of cost pressures in earlier periods led to one-off cost adjustments in several items. Some firms and operators had put off passing on the higher costs to consumers, especially during periods of weak economic activity. With the strong economic performance last year, some operators took the opportunity to pass through to consumers some of these cost increases. Examples include newspaper prices, miscellaneous school fees, medical treatment costs and service and conservancy charges (S&CC). (Table 3.1)

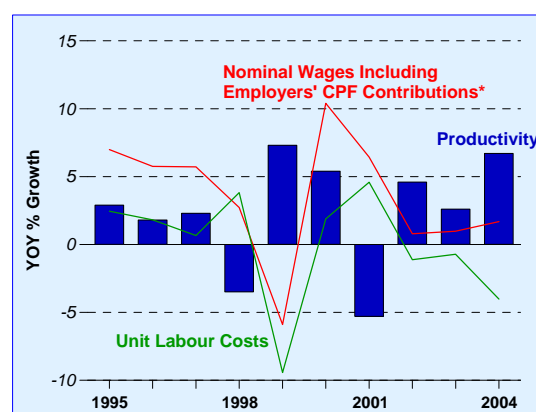
In an increasingly competitive global environment, it is important to monitor and appreciate underlying cost developments in the broader Singapore economy. Box Item B explains in more detail how EPD has been monitoring cost trends in the services sector.

Apart from supply-driven factors, demand pressures have also strengthened somewhat in recent months.

**Chart 3.7**  
Impact of Food-related Shocks



**Chart 3.8**  
Wages, Productivity and Unit Labour Costs



\* EPD, MAS internal estimates

**Table 3.1**  
"Pent-up" Cost Increases

Items	Increase	Remarks
Newspaper charges	Up to 30%	Largely due to rising manpower costs. Last increase in 1995.
Misc. school fees	10-20%	First increase in 14 years.
Medical treatment costs	8%	Partly attributed to rising production costs.
S&C charges	2-7%	Rise in maintenance and utility costs. Last increase in 1997.



After remaining flat over H1 2004, prices of several mass-market sentiment-sensitive items have turned around to record mild increases over H2 2004. (Chart 3.9) Consumer spending improved on the back of generally upbeat sentiment, with the Straits Times Consumer Confidence Index staying at fairly high levels in H2 2004, although it declined somewhat in Q4.

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**However, structural changes in the economy exerted considerable downward pressure on prices.**

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Upward pressure on the CPI, which was largely supply-side driven, was offset by the impact of structural changes in certain industries. Indeed, such developments have been playing an increasingly important role in domestic consumer price dynamics. We highlight three such industries.

### *1. Motor Vehicle Retail Industry*

Private road transport costs fell 2.3% in H2 2004 largely on account of lower car prices. (Chart 3.10) Car prices have been trending downwards in recent years and are now significantly below their levels in 2000. For illustrative purposes, a breakdown of the cost components of the most popular car model in Singapore – the Toyota Corolla – is provided, which reveals some of the main structural factors explaining this decline. (Chart 3.11)

First, various upfront taxes for cars have been reduced in line with the government's aim to shift towards a usage-based tax structure. Notably, the Additional Registration Fee (ARF) was lowered from 140% to 130% in 2002, and subsequently to 110% in March 2004. The custom duty on cars was also reduced from 31% of the Open Market Value (OMV) to 20% in 2002.

Second, COE premiums have fallen to less than half their levels in 2000. This decline was partly due to the large increase in certificates released by the Land Transport Authority (LTA), which reflected the sharp rise in car deregistrations by 76% between 2000 and 2004.<sup>1</sup> (Chart 3.12)

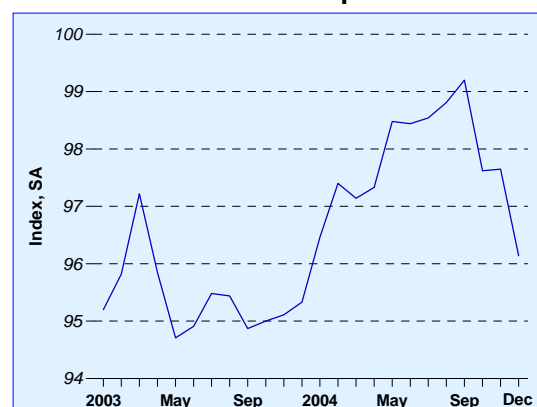
Third, as reflected in lower OMVs, manufacturing costs have fallen as several carmakers shifted their production to lower-cost centres in Asia, such as Thailand, China and India. In particular, car imports from Thailand have

**Chart 3.9**  
**Mass-market Sentiment-sensitive Items**

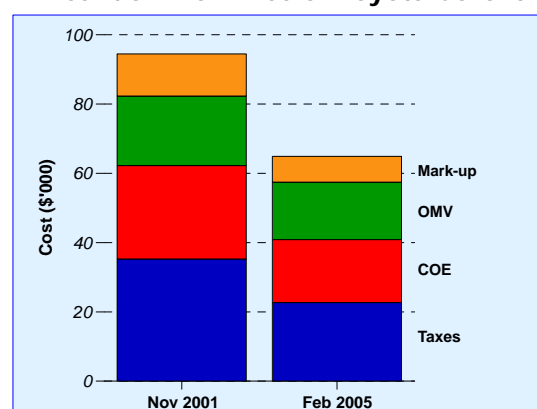


\* EPD, MAS internal estimates

**Chart 3.10**  
**Private Road Transport Costs**



**Chart 3.11**  
**Breakdown of Price of Toyota Corolla**



Source: One.Motoring

<sup>1</sup> The number of deregistrations is a major determinant of the supply of COEs that LTA releases each year.

been growing steadily, with the increasing popularity of a number of Thai-made models. (Chart 3.13) The Toyota Corolla sold here, which was previously made in Japan, has been replaced by the Toyota Corolla Altis, a Thai-made car.

## II. Retail Petrol Industry

Although petrol prices were driven up in most of 2004 by the pass-through of high global oil prices, these were partly countered by an increase in domestic competition. Downward price pressures have intensified in recent months, with Singapore Petroleum Company (SPC) buying out British Petroleum's stake in Singapore, making it the third largest retailer here. As SPC is relatively aggressive in its discounts and promotion schemes, this has induced other players to follow suit.

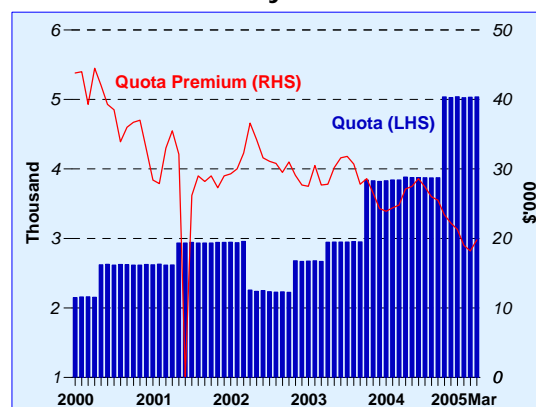
Indeed, in a bid to retain market share in an increasingly competitive environment, price wars in the industry have become more intense and frequent. To distinguish the effects of competition on petrol prices, Chart 3.14 plots the quoted price observed at petrol stations and the petrol index in the CPI basket. While movements in the former generally reflect global oil price developments, the latter encompasses both price changes and discounts, and thus includes the effects of competition. As can be seen in the chart, the two series generally moved in tandem prior to 2003. Since then, petrol price wars have led to some divergence.

In addition to benefiting from such competitive pressures, petrol has actually become "cheaper" for consumers when measured against nominal earnings. To provide a measure of affordability, the ratio of average monthly earnings to the petrol price index was computed. A rise (fall) in the affordability index implies that petrol prices have become more (less) affordable. As can be seen in Chart 3.15, although prices have increased by about 20% since 1993, petrol has actually become more affordable, as nominal earnings rose by around 60% over the same period. Nevertheless, affordability has deteriorated somewhat over the past year, as high global oil prices fed through.

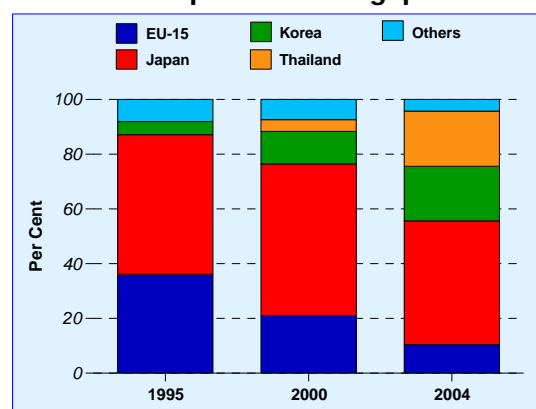
## III. Travel-related Industry

Another sector that has been undergoing structural changes is the travel-related industry. Apart from lower airfares offered by low-cost carriers (LCCs), the

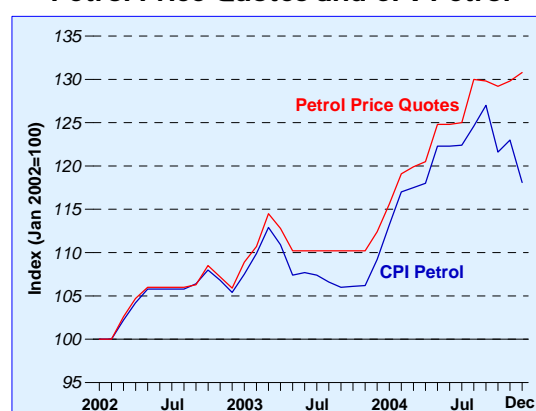
**Chart 3.12**  
Category A COE Premiums and  
Monthly Quotas



**Chart 3.13**  
Market Share of  
Car Imports into Singapore



**Chart 3.14**  
Petrol Price Quotes and CPI Petrol



increased competition has also led full-service carriers to cut prices.

While the cost of air travel is a major component of tour package prices, the pass-through of lower air ticket prices does not appear to have filtered immediately through into lower tour package prices. The price developments in these two items are shown in Chart 3.16, with airfares and tour package prices proxied by the “other travel and transport” series and “other miscellaneous” series respectively. Indeed, while air ticket prices have largely been on a trend decline since early 2003, tour package prices only started to see more significant declines from mid-2004 onwards (excluding the plunge in mid-2003 due to the Sars outbreak).

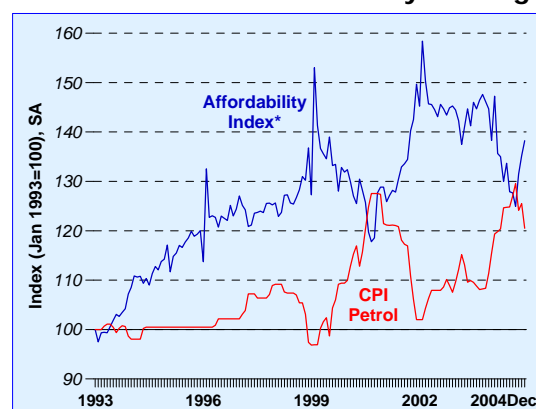
This may be because travel agents usually tie up with full-service carriers instead of LCCs for the airfare component of the tour packages, so the rock-bottom prices offered by the latter do not directly filter through to tour package prices. Although some full-service carriers have also slashed air ticket prices in response to the rising competition, travel agents may not benefit from these lower fares either because airlines typically segment these two markets, with different pricing strategies for packaged tours and direct air ticket purchases. Nevertheless, price developments in the two market segments generally move in the same direction in the longer term.

#### **Policy-induced measures have also exerted downward pressure on household services costs.**

Policy-induced measures also helped to keep a lid on consumer prices in H2 2004. As part of the government’s initiatives to encourage parenthood, the foreign maid levy was reduced from \$345 to \$250 for families with young children (under the age of 12) or elderly parents (above the age 65) in August 2004. However, costs have subsequently turned up somewhat as entry requirements for maids were tightened to raise the quality of such services.<sup>2</sup> (Chart 3.17)

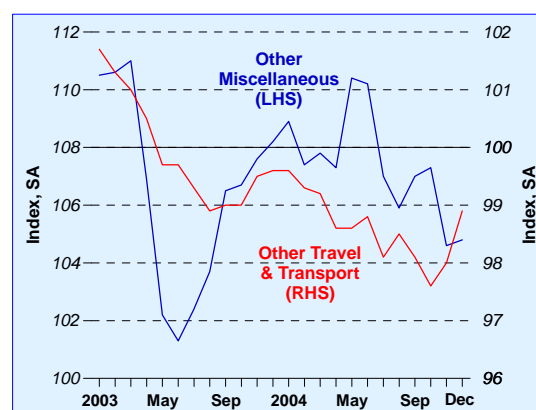
<sup>2</sup> Apart from lifting the minimum age of maids from 18 to 23, new maids need to show proof of at least eight years of formal education.

**Chart 3.15**  
**Ratio of CPI Petrol to Monthly Earnings**



\* EPD, MAS internal estimates

**Chart 3.16**  
**Other Travel and Transport and “Other Miscellaneous”**



**Chart 3.17**  
**Household Services**



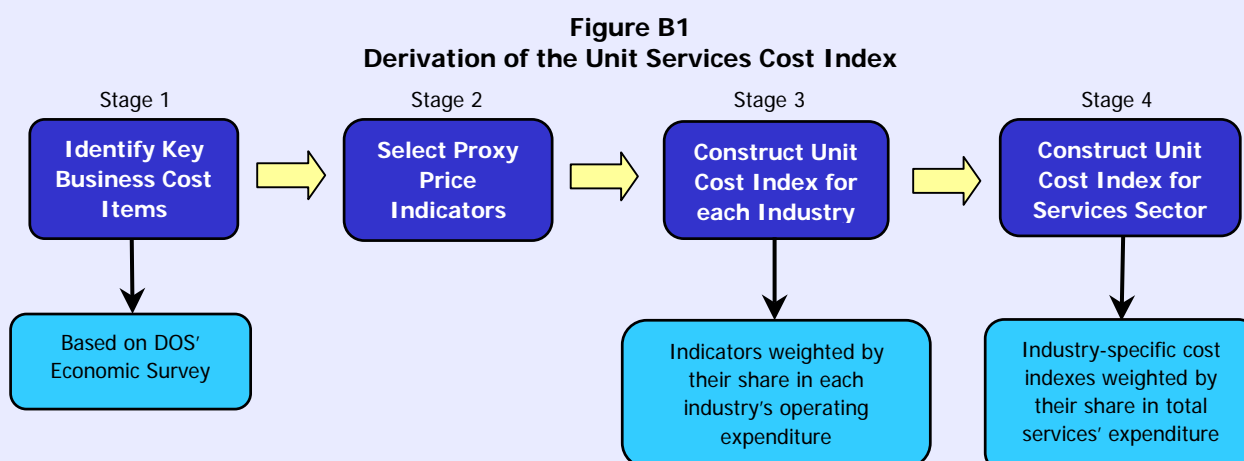
### Box Item B Analysing Cost Trends in the Services Sector

#### *Introduction*

To provide a holistic view of overall cost trends, EPD has been analysing cost developments within the services sector. The importance of the services sector extends beyond its direct contribution to the economy – accounting for 63% of overall GDP and 69% of total employment – to include its role in providing supporting activities to the manufacturing sector.

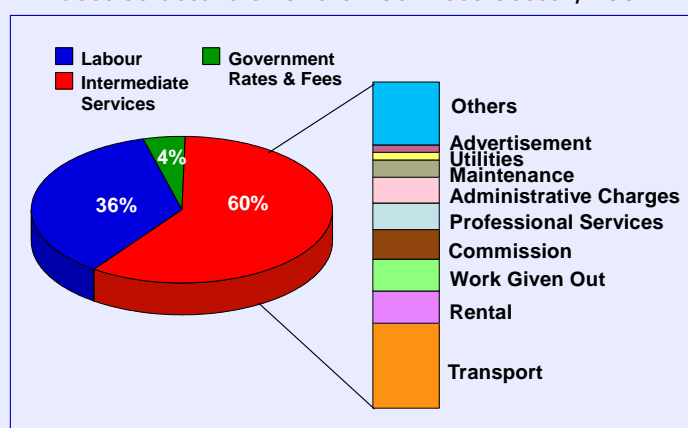
#### *Methodology*

In analysing the cost conditions facing services firms, EPD adopted a four-stage process to compute a unit services cost index (USCI)<sup>1/</sup> using data over the period 1995-2004, as shown in Figure B1. *Stage 1* involves identifying the key business cost components facing each industry within the services sector, based on the breakdown of operating expenditure from the annual Economic Survey Series published by the Singapore Department of Statistics (DOS). Chart B1 shows the cost structure for the services sector as a whole. The largest expenditure weight is attributed to the intermediate services cost component, which includes, amongst other things, transport fees, rental, commissions & agency fees, maintenance, utilities, and advertisement. The labour cost component – measured by ULC – makes up another 36% of total expenditure by firms in the services sector. Government rates & fees, which include tax on commercial and industrial properties, motor vehicle related charges (such as road tax and COE premiums), as well as import and excise duties on motor vehicles and petroleum products, account for the remaining 4%.



<sup>1/</sup> The methodology behind EPD's USCI was based on DOS' Unit Business Cost Index (UBCI) for the manufacturing sector. Nevertheless, differences in the source data and base year for the weights make a direct comparison between the two cost indices difficult. For instance, the UBCI derives its weights from the 1993 Input-Output Table, while the USCI uses the 2002 operating expenditure data from the annual Economic Survey Series.

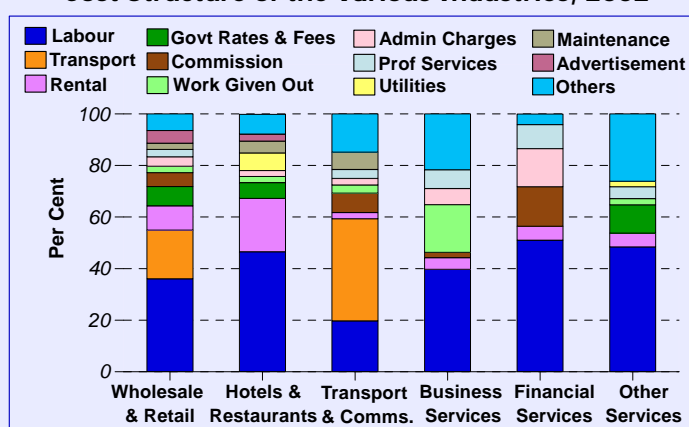
**Chart B1**  
**Cost Structure of Overall Services Sector, 2002**



\* EPD, MAS internal estimates

At the industry level, the cost structure varies widely according to the nature of business activity. Nevertheless, several observations can be made. First, labour cost comprises the single largest component of total expenditure, ranging from 36% in wholesale & retail to 51% in financial services. (Chart B2) This compares with 31% in the manufacturing sector. The only exception is the transport & communications industry, where labour cost is second to transport-related costs, with a share of 20%. Second, the relative importance of the different components within intermediate services reflects the specific nature of each industry's operations. For instance, charges related to transport (e.g. cargo handling & port charges) form a sizeable 40% of total expenditure for the transport & communications industry. Such costs would be negligible for operators in the hotels & restaurants industry, where rental alone accounts for 21% of their expenditure, with utilities and maintenance as some of the other significant cost components. In the wholesale & retail industry, transport fees and rental are key cost components which together account for 28% of their expenditure. Third, the share of government rates & fees, which averages 4.9%, varies widely across the industries.

**Chart B2**  
**Cost Structure of the Various Industries, 2002**

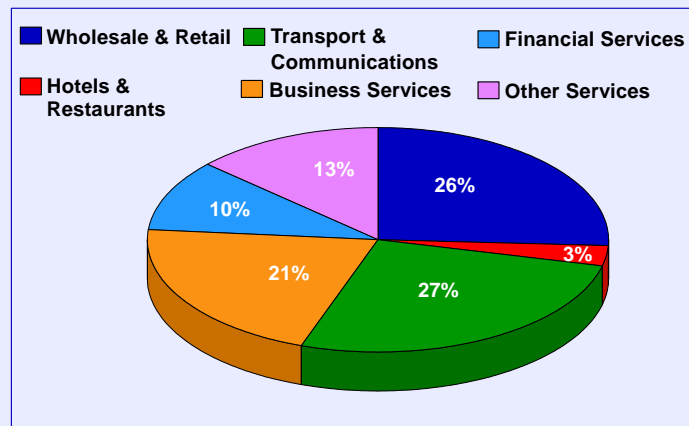


\* EPD, MAS internal estimates

*Stage 2* involves the selection of the appropriate proxy price indicators for the various expenditure items within each industry. Most of the price indicators are not able to capture the effects of the government's various off-Budget measures. We have therefore tried as far as possible to make adjustments to the appropriate components of the index to better capture the actual costs faced by companies. In *Stage 3*, an industry-specific unit cost index is obtained by weighting the individual price indicators by their share in that industry's operating expenditure using 2002 data. In *Stage 4*, the unit cost indexes for the various industries are combined to derive the composite USCI, with the industry weights depicted in Chart B3. Transport &

communications, wholesale & retail, and business services each account for more than a fifth of the entire sector's expenditure. The other industries together comprise the remaining quarter of total expenditure.

**Chart B3**  
**Industry Share of Overall Services' Operating Expenditure, 2002**



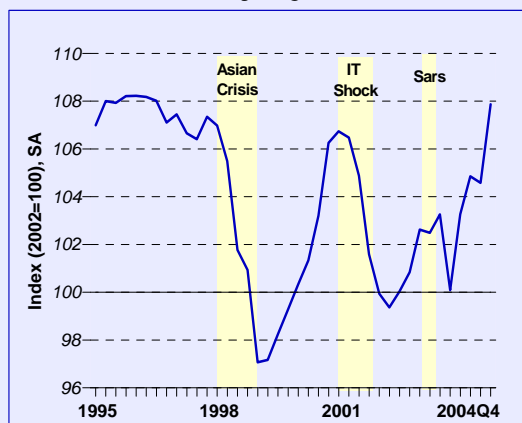
\* EPD, MAS internal estimates

### *Trends in the USCI*

The unit cost index for the overall services sector has largely moved in tandem with the business cycle. There are three conspicuous periods of decline in the USCI, coinciding with the Asian crisis in 1997, the bursting of the IT bubble in 2001 and the Sars outbreak in 2003. (Chart B4) Given the data constraints in constructing a comprehensive cost index, our objective has been to produce an indicator of the longer-term trends in the domestic business cost environment, arising from changes in wages, rental and other intermediate input costs.

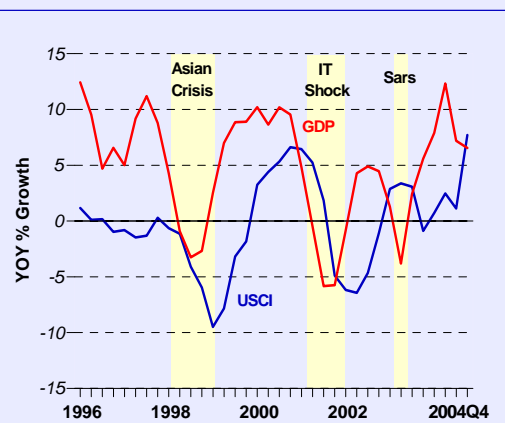
**Chart B4**  
**Unit Services Cost Index**

(a) Seasonally adjusted Levels



\* EPD, MAS internal estimates

(b) YOY Growth



\* EPD, MAS internal estimates

Several observations are noteworthy from a comparison of these three periods. First, the USCI tracked the turning points of the business cycle fairly well, but with a lag. This reflects the relatively slower adjustment in labour and intermediate services costs, which typically edge down about one to two quarters after GDP growth peaked on a y-o-y basis. In comparison, the adjustment in government rates & fees has been typically quick, due in part to cyclical adjustments in COE premiums, which account for a significant 20-25% of government rates & fees paid by almost all the industries. This was reinforced by the government's various off-Budget packages, aimed at reducing domestic costs and helping businesses tide over the downturns in the economy.

Second, the extent of the adjustment in the USCI varied across the different downturns. The USCI recorded the most severe adjustment during the Asian crisis, with a peak-to-trough decline of 9.6%, compared to 6.9% during the IT shock and 2.5% during the Sars outbreak. This partly reflected the more generous FY1998/99 budgetary response following the Asian crisis, in addition to an off-Budget package amounting to S\$12.5 billion. The employers' CPF contribution rate was also halved to 10% in 1999, before being incrementally restored to 12% in 2000 and 16% in 2001. Two off-Budget packages totalling S\$13.5 billion were introduced in 2001, while the relief package during Sars was smaller at S\$230 million and was specifically targeted at the most affected sectors such as transport and tourism.

More recently, the USCI has started to trend up, recording a y-o-y increase of 3.0% in 2004. The USCI for Q4 2004 was 7.8% higher than that at the trough in Q4 2003. The increase in the USCI could be the result of several factors. The strong economic growth last year encouraged some service providers to start passing on some of the pent-up cost increases held back over the past few years. In addition, various rebates and other cost-cutting measures were gradually withdrawn as the economy strengthened, while strong global trade flows led to sharp increases in transport-related charges in recent quarters.

### **Key Cost Components within the USCI**

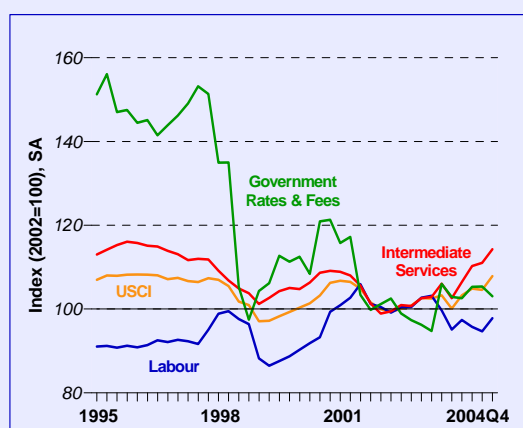
The USCI has largely mirrored underlying developments in the labour and services cost components, given their sizeable weights in overall services sector expenditure. (Chart B5)

#### **(I) Intermediate Services Costs**

The unit cost of intermediate services has been relatively stable over the decade, resulting from the offsetting price movements of the various services components. For instance, rental and telecommunication rates have been falling over the past few years, offsetting the higher sea freight rates and charter fees. Nevertheless, intermediate services costs have risen steadily in recent quarters, accounting for the bulk of the increase in the overall index in 2004. In addition to higher transport-related charges, the recent increase in intermediate services costs also reflected unit cost increases in other components such as work given out, commissions & agency fees, administrative charges, advertisement, and professional services.

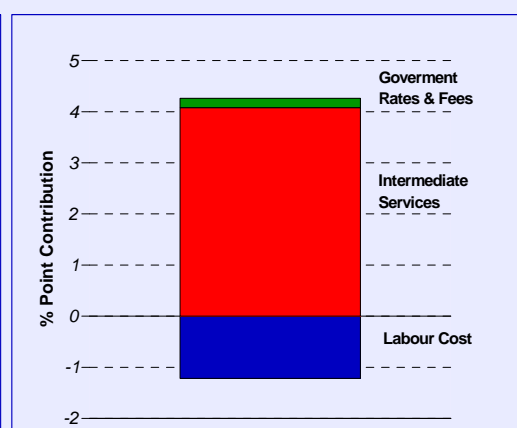
**Chart B5**  
**Unit Services Cost Index**

**(a) Main Components**



\* EPD, MAS internal estimates

**(b) Contribution to Increase in Index between 2003 and 2004**

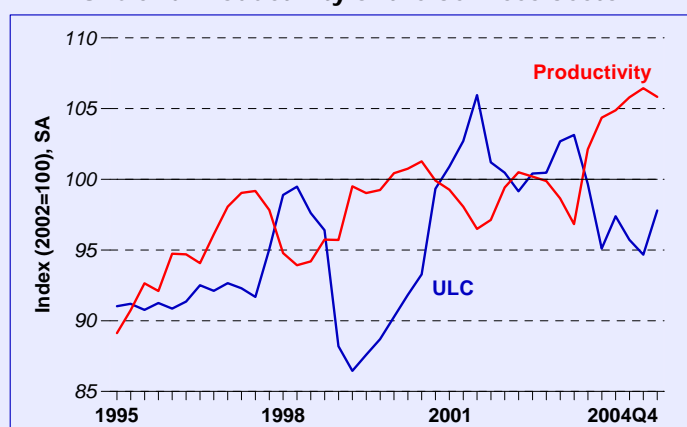


\* EPD, MAS internal estimates

**(II) Labour Cost**

Chart B6 plots ULC and labour productivity for the services sector. The ULC measures labour cost per unit of output produced, while labour productivity measures output per worker. The ULC tends to rise faster in periods when there is an acceleration in wage growth or a slowdown in productivity growth. In general, the ULC of the services sector has risen at a faster pace compared to the manufacturing sector over the past decade, as the Balassa-Samuelson effect passed through from the higher productivity growth in the manufacturing sector. With wages in the services sector tending to match those in the manufacturing sector, effective labour costs for services firms have risen as productivity growth lagged behind. (Table B1) More recently, the ULC has moderated from Q2 2003 to Q3 2004, reflecting strong productivity gains as the economy recovered from Sars with a lagged improvement in employment. Although the ULC picked up somewhat in Q4 2004, it remained some 5% below its Q2 2003 peak.

**Chart B6**  
**ULC and Productivity of the Services Sector**



\* EPD, MAS internal estimates

**Table B1**  
**Average Productivity and Wage Differentials between Manufacturing and Services Industries (%), 1998-2004**

	Productivity Differential	Wage Differential
Services Sector	4.9	0.2
Wholesale & Retail	1.6	1.5
Hotels & Restaurants	6.5	1.9
Transport & Communications	2.2	-0.3
Business Services	8.5	0.9
Financial Services	7.1	0.4
Other Services	4.5	-1.1

\* EPD, MAS internal estimates

**(III) Government Rates & Fees**

The unit cost index for government rates & fees has fallen significantly since the Asian crisis, as a result of both cyclical and structural factors. Cyclical factors have dominated cost movements. For example, during downturns, the cost-cutting measures effected through off-Budget packages brought about substantial reductions in specific government rates such as taxes on commercial and industrial properties, and excise and import duties on motor vehicles and petroleum products. Structural factors have also played a significant role, through policy measures such as the liberalisation of the energy sector and the government's decision to implement Electronic Road Pricing (ERP) in Singapore in 1998. The success of the ERP, for example, has resulted in permanent reductions in motor vehicle charges such as road tax and ARF. Meanwhile, the trend



decline in COE premiums in recent years has been partly due to the large increase in the supply of COEs. With the cost-cutting measures being scaled back, there has been a rise in property taxes, and excise and import duties on motor vehicles.

### ***Sum-up***

This box item has summarised some of the ongoing work undertaken by EPD to better understand the cost conditions facing the services sector. Our results show that a significant proportion of the costs of services firms arises from inputs provided from within the sector itself. Nevertheless, for services firms as a whole, labour costs constitute a relatively high proportion of total costs, accounting for as much as 51% in the financial services industry. In addition, the USCI has risen modestly over 2004, largely driven by increases in intermediate services costs, although this has taken place in the context of a strengthening economy and an improving revenue position for firms in the services sector.

## 3.3 Labour Market

### **The labour market made a strong comeback last year.**

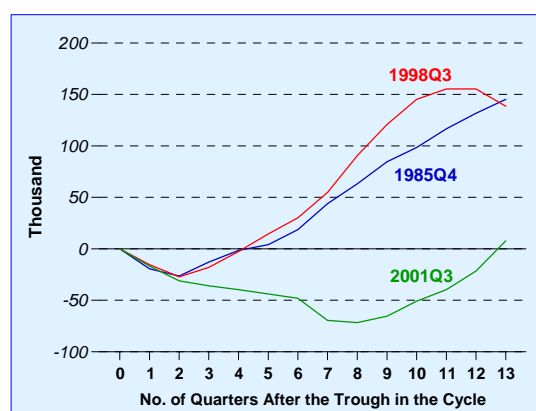
Overall employment rose by a healthy 32,700 jobs in Q4 2004, more than double the average job gains of 12,900 in the first three quarters of the year. This marked the strongest quarterly employment growth since the labour market recovery in the latter half of 2003. Total job gains in 2004 came to 71,400, more than making up for the 35,900 jobs lost over the preceding three years.

### **However, the recovery is more drawn out than in previous cycles, manifested by the strong pro-cyclical behaviour of productivity.**

Nevertheless, the delayed improvement in the labour market has been more prolonged this time around, as compared to previous cycles. This can be attributed in part to the sluggishness in foreign employment, which offset the recovery in local employment. Indeed, foreign employment recorded yearly losses from 2001-2003, and turned around only in 2004.

Chart 3.18 plots the cumulative employment changes from the troughs of the past three economic cycles (1985 recession, 1997 Asian Financial Crisis and the recent downturn in 2001). In the recent cycle, employment only started to turn around eight quarters after the trough of GDP, as compared to two quarters following the earlier recessions.

**Chart 3.18**  
**Cumulative Changes in Employment in Past Recessions**



The more drawn out recovery in the labour market could, in part, reflect the consecutive negative shocks hitting the economy in recent years, which led to reluctance among employers to hire until the recovery seemed more entrenched. Companies instead responded to the increase in sales and export orders by increasing the utilisation of the existing workforce and capital equipment. Indeed, this phenomenon is not unique to Singapore and was also observed in the US.<sup>3</sup>

This may also account for the strongly pro-cyclical behaviour of productivity. Chart 3.19 plots productivity, output and employment growth since the downturn in 2001. When output turned around in Q3 2003, productivity growth surged, posting a sequential gain of 6.0%. The subsequent moderation of productivity growth may, to some extent, have reflected employers' growing optimism about the economic outlook, and hence their willingness to restore their workforce to more optimal levels. The easing in labour productivity growth after Q3 2003 coincided with a strong pickup in employment, with an average quarterly increase of approximately 17,500 jobs.

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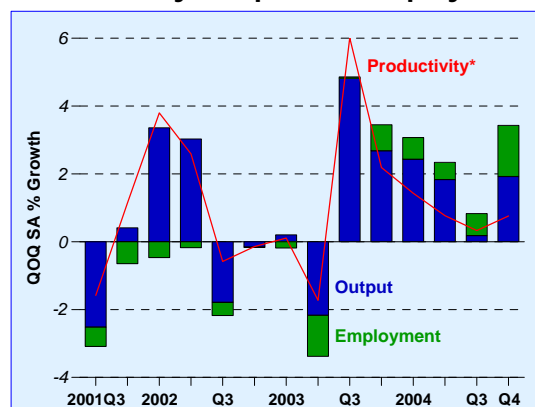
**The somewhat slower employment response is confirmed in our econometric estimates.**

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The somewhat protracted response of the labour market to the turnaround in GDP is also captured by an econometric estimate of the relationship between productivity, output and employment.<sup>4</sup> Underpinning this relationship is the rationale that any change in output must ultimately result in a change in productivity or a change in employment.

Chart 3.20 plots the time profile of the response of employment to a 1% change in GDP levels both before, and after, the downturn of 2001. It is evident that the

**Chart 3.19**  
**Productivity, Output and Employment**



\* EPD, MAS internal estimates

**Chart 3.20**  
**% Response of Employment to a 1% Change in Output**



\* EPD, MAS internal estimates

<sup>3</sup> Roger Ferguson (2004), Vice Chairman of the Fed, observed similar trends among US firms during the last recession, noting that when faced with uncertainties about the sustainability of an economic upturn, firms "chose instead to meet increases in their orders by using their existing workforces more intensively".

<sup>4</sup> The estimated equation takes the form:  

$$\log(Q/L) = \alpha_0 + \alpha_1 * \log(K/L_{trend}) + \sum w_i * [\log(Q_{-i}) - \log(Q_{-i-1})] + \alpha_2 * \log(Other)$$
 , where Q is non-construction output, L is non-construction employment, K is the capital stock,  $L_{trend}$  is trend non-construction employment, and  $\alpha$  and  $w_i$  are estimated coefficients. The  $w_i$ 's were constrained between zero and unity, to ensure that an increase in output is accounted for by growth in Q/L and L. The longer the distributed lag on the change in output, the more a change in output is initially reflected as a change in productivity, and the less it is reflected as a change in employment. The responses plotted in Chart 3.20 are the estimates of the coefficients  $(1 - w_i)$  estimated over the two sample periods.

initial response of the labour market to GDP growth was weaker after 2001, as shown by the smaller response of employment in the first few quarters. In particular, within a quarter following a 1% change in output, employment increases 0.27% in the period after 2001 compared to a 0.34% response prior to 2001. By the end of the first year, employment increases by a smaller 0.52%, compared to 0.62% in the period prior to 2001. Moreover, the time taken for employment to fully respond to a change in output has been prolonged by two additional quarters in the period following the 2001 downturn.

The weaker and slower response of employment to the change in output is consistent with the strong procyclical behaviour of productivity highlighted in Chart 3.19. In other words, compared to the period before 2001, a greater portion of the change in output is initially reflected in productivity change, and less in employment gains.

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**Employment gains in 2004 have been broad-based across the sectors, distinguished by different hiring patterns among the locals and foreigners.**

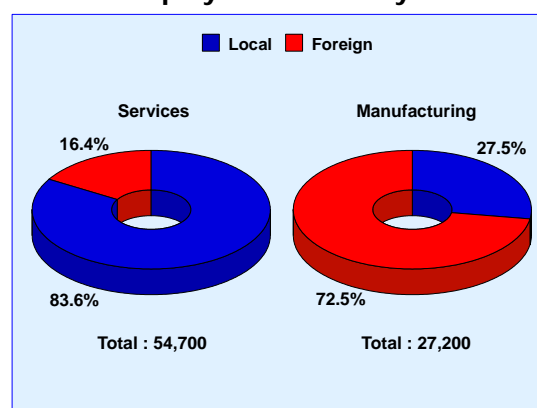
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The gains in employment in 2004 have been broad-based across the manufacturing and services sectors, and among both local and foreign workers. Manufacturing employment increased by 27,200, whilst employment in the services sector rose by 54,700, the strongest increase since 2000.

The bulk (70%) of the employment growth in 2004 went to locals, which recorded the highest annual net gain of 49,900 jobs since the recovery from the 2001 recession. Foreigners also benefited from the labour market recovery, posting a net job gain for the first time in four years. On closer examination, distinct differences were apparent in the distribution of these job gains among locals and foreigners. As shown in Chart 3.21, the increase in local employment has been concentrated in the services sector, while foreigners have been securing jobs in the manufacturing sector. In fact, 84% of the job gains in the services sector went to locals, while 73% of the job gains in the manufacturing sector were taken up by foreigners.

Indeed, the share of locals employed in the manufacturing sector has been declining, but at the same time, this has been accompanied by a significant

**Chart 3.21**  
**2004 Employment Gains by Sectors**



increase in their share of services jobs. This changing pattern mirrors the broader restructuring in the Singapore economy, whereby locals who have lost their jobs in manufacturing have moved into the services sector. Since the trough in 2001, the job gains for locals in the services sector have well surpassed the earlier job losses, replacing the jobs lost in manufacturing. Conversely, employment gains for foreign workers in the manufacturing sector were higher than the losses in the services sector. (Chart 3.22)

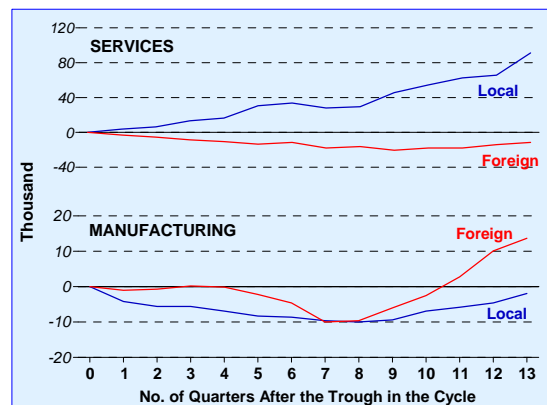
The job gains were fairly broad-based across the various industries. This is confirmed by the Employment Diffusion Index,<sup>5</sup> which has been hovering around 75 since the beginning of 2004. (Chart 3.23) With the exception of the construction sector, which is still shedding jobs, all the major sectors experienced positive employment growth in 2004. In particular, the financial and business services sector and the non-electronics cluster in the manufacturing sector posted the strongest employment gains of 23,800 and 19,400 jobs, respectively.

#### The unemployment situation improved across age groups and qualifications.

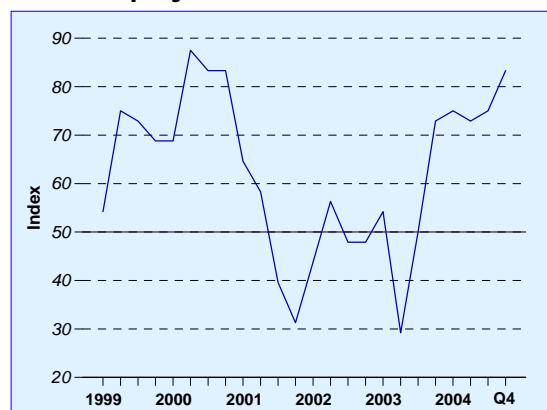
Alongside the strong employment gains, the unemployment situation improved significantly, with the headline unemployment rate falling from a peak of 5.7% in September 2003 to a low of 3.6% in September 2004 and 3.7% in December. (Chart 3.24) The fall came after a relatively long delay following the turnaround in output due, in part, to an "encouraged worker effect". This is where the initial turnaround in the employment situation itself induces an increase in the labour force participation rate, thus slowing somewhat the pace of improvement in overall unemployment. A closer examination of this effect is presented in Box Item C.

The unemployment profile by age and educational qualification was examined to assess the breadth of the recovery in the labour market since the second half of last year. It is important to note that the analysis draws on non-seasonally adjusted data, and as

**Chart 3.22**  
Cumulative Changes in Employment by Sector



**Chart 3.23**  
Employment Diffusion Index



\* EPD, MAS internal estimates

**Chart 3.24**  
Unemployment Rate



<sup>5</sup> The Index takes a maximum of 100 when all the industries are increasing employment, and a minimum of zero when all the industries are decreasing employment. An index of 50 indicates an equal balance between industries with increasing and decreasing employment.

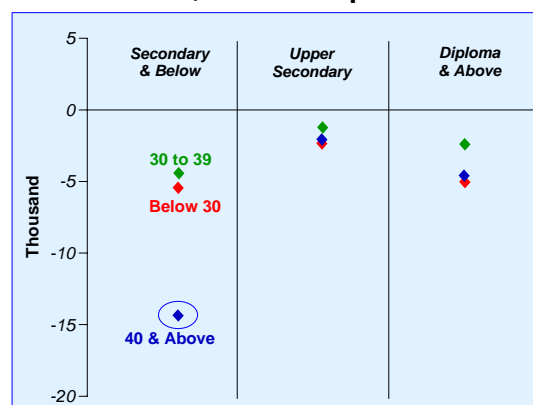
such, would not have controlled for seasonal patterns.<sup>6</sup> The data suggests that the turnaround in the labour market has benefited a broad spectrum of workers.

Chart 3.25 plots the drop in the number of unemployed residents (non-seasonally adjusted) on the vertical axis between June and September 2004,<sup>7</sup> when the sharp fall in the unemployment rate took place. The unemployed workers are grouped into three columns according to education qualifications, while the differentiation by age group is indicated by the colour codes. Moving downwards beyond the horizontal zero line implies a decline in the pool of unemployed and, therefore, an improvement in labour market conditions. As can be seen from the chart, all the points lie below the zero line, indicating a broad-based recovery in the labour market across all ages and qualifications. Note that the improvement in the unemployment situation appears to be concentrated at the two extreme ends of the education spectrum – those with secondary and below education levels, and those with diploma and above qualifications. In particular, the group perceived to be “structurally unemployed” – those aged above 40 with secondary and below qualifications – registered the largest fall of 14,300 persons.

A similar conclusion emerges if the unemployment rate for each group of workers is considered i.e. the improvement in the labour market in Q3 2004 was indeed broad-based.<sup>8</sup> (Table 3.2) In particular, the “structurally unemployed” registered a decline in the unemployment rate from 5.7% to 3.4% in that quarter. Moreover, the unemployment rate was the lowest for that category across age groups. Nevertheless, the number of individuals belonging to this particular cohort remains high at 22,700, and continues to form the bulk of the unemployed pool, accounting for 60% of the unemployed in September.

The cohort that appears to exhibit a consistent improvement over the period Jun-Dec 2004 is that of diploma & degree workers aged 30-39 years, with the

**Chart 3.25**  
**Unemployed Residents by Age and Qualification, June vs September 2004**



**Table 3.2**  
**Resident Unemployment Rate**  
**(Non-seasonally Adjusted)**

2004	Below 30	30-39	40 and Above
<b>June</b>	Overall unemployment rate = 5.9%		
<b>Secondary &amp; Below</b>	10.8	6.0	5.7
<b>Upper Secondary</b>	6.6	4.2	5.3
<b>Diploma &amp; Degree</b>	8.4	3.3	4.5
<b>September</b>	Overall unemployment rate = 3.5%		
<b>Secondary &amp; Below</b>	5.7	3.7	3.4
<b>Upper Secondary</b>	3.3	3.2	2.6
<b>Diploma &amp; Degree</b>	5.5	2.2	1.6
<b>December</b>	Overall unemployment rate = 4.3%		
<b>Secondary &amp; Below</b>	12.7	4.0	3.7
<b>Upper Secondary</b>	5.4	3.5	2.9
<b>Diploma &amp; Degree</b>	4.4	1.8	4.0

<sup>6</sup> Seasonally adjusted data is not available at such disaggregated levels. Nevertheless, it should be highlighted that the movements in the non-seasonally adjusted resident unemployment rate were more accentuated compared to the seasonally adjusted figures, although the general direction was broadly similar. Year-on-year comparisons, to remove the effects of such seasonalities, showed that the results were broadly in line with our findings.

<sup>7</sup> The period June to September 2004 was chosen as the bulk of the decline in unemployed persons in 2004 occurred then. It is useful to note that while the analysis using q-o-q data allows for deeper examination of the dip in the unemployment rate, it may also capture some seasonal patterns.

<sup>8</sup> The inferences are largely unchanged when the analysis was done using unemployment rates, derived by scaling the number of unemployed persons across the various age and education cohorts by the respective labour force.

unemployment rate declining from 3.3% to 1.8%. In fact, it recorded the lowest unemployment rate among the different cohorts as at end-2004. Apart from this group, and that of diploma & degree workers below 30, the unemployment rate for all other cohorts edged up between June and December 2004. This was a reflection of the general increase in the overall resident unemployment rate (non-seasonally adjusted) from 3.5% to 4.3%.

### Box Item C Quantifying the Encouraged (Discouraged) Worker Effect in Singapore

This box item begins by presenting some stylised facts on the trend movements in Singapore's resident labour force participation rate since the 1990s. The available data is suggestive of the existence of some degree of encouraged (discouraged) worker effect in the domestic labour market. The magnitude and duration of this effect is then estimated using a single equation model, extracted from MAS' macroeconomic model, the Monetary Model of Singapore (MMS). Finally, to capture the linkages between employment, the labour force and the rest of the economy, the impact of an improvement in the external environment on the labour market is simulated using the MMS.

#### *A Look at Singapore's Resident Labour Force Participation Rate*

Since the 1990s, Singapore's resident labour force participation rate<sup>1/</sup> has remained within the range of 62.5-64.0%. (Chart C1)

Chart C1  
Resident Labour Force Participation Rate

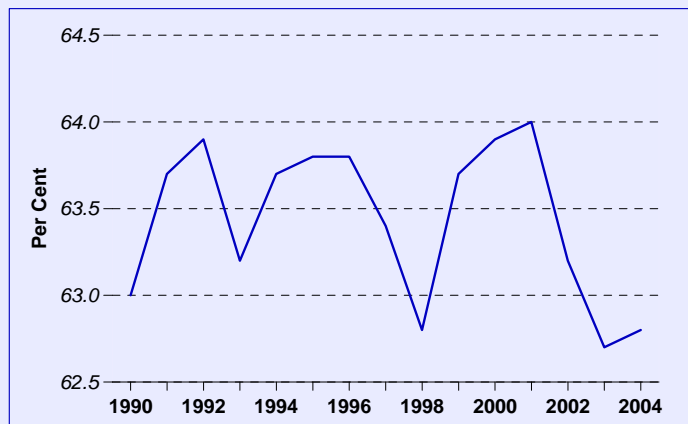
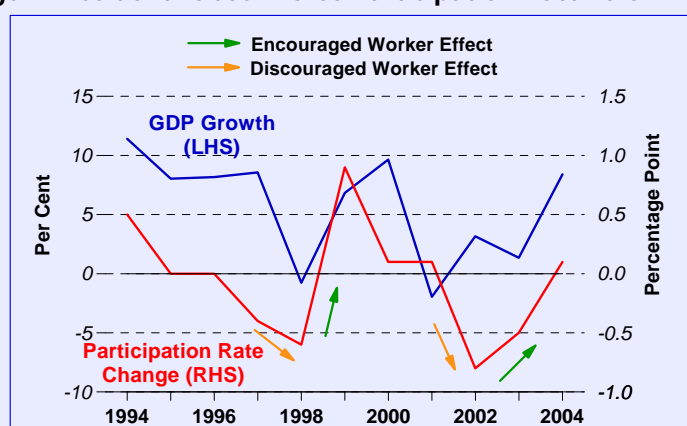


Chart C2, which plots the changes in the labour force participation rate alongside GDP growth in the past decade, shows that the participation rate generally declines during periods of cyclical downturns such as the 1998 recession and the IT slowdown in 2001. This may partly be the result of the discouraged worker effect, whereby prospective workers give up searching for a job when unemployment rates are high. When the economy subsequently recovers, better job prospects encourage a return to the labour force in search of employment – the encouraged worker effect.

<sup>1/</sup> The resident labour force participation rate refers to the proportion of the resident population aged 15 and older who are either working (employed) or actively seeking employment (unemployed).

**Chart C2**  
**Change in Resident Labour Force Participation Rate vs GDP Growth**



### Estimating the Encouraged Worker Effect

Following Powell and Murphy (1997), the encouraged worker effect is captured in the MMS via the following dynamic labour supply function:<sup>2/</sup>

$$(L/\hat{L}) = \alpha + \sum_{i=1}^{\infty} \beta_i * (L/\hat{L})_{-i} + \gamma * (E/\hat{L}) + \sum_{j=1}^{\infty} \delta_j * (E/\hat{L})_{-j} + \varepsilon$$

where  $E$  and  $L$  refer to employment and labour force respectively.  $\hat{L}$  refers to the potential labour force, or long-term movements in the labour force in line with shifts in the demographic profile and the trend participation rate.

In the equation above, variations in the labour force depend on lagged values of the labour force as well as current and lagged values of employment. The encouraged worker effect is captured by the short-term variation of the labour force around its long-term trend due to a change in employment, and its contemporaneous impact is given by the coefficient on  $(E/\hat{L})$ .

The equation was estimated over the period Q2 1984 to Q4 2004. The regression results, which are reported in Table C1, show that the impact of labour force on itself lasts for two quarters, while that of employment on the labour force is significant for the current quarter.

**Table C1**  
**Regression Results**

Dependent Variable:  $L/\hat{L}$

Variable	Coefficient
$(L/\hat{L})_{-1}$	0.248* (0.099)
$(L/\hat{L})_{-2}$	0.520** (0.089)
$(E/\hat{L})$	0.330* (0.140)
R-squared	0.84
S.E. of regression	0.01
Durbin Watson	2.16

Note: Numbers in parentheses are standard errors.

\*\* and \* represent significance at the 1 and 5 per cent levels respectively.

<sup>2/</sup> All the variables in the equation are expressed in their logarithmic forms.

### Contemporaneous Encouraged Worker Effect

The results suggest that employment has a significant impact on the labour force participation rate. The coefficient is 0.330 for  $(E/\hat{L})$ , implying that a 1% increase in employment is accompanied by a contemporaneous increase of 0.33% in the labour force, as new entrants are enticed to join the workforce.

To further illustrate this contemporaneous effect, consider the following example. Assume 4% of the labour force is unemployed, or 96% are employed. In the absence of the encouraged worker effect – no response in the size of the labour force – a 1% increase in employment would lead to a fall in the unemployment rate by 0.96 percentage points. Now, allowing for the encouraged worker effect and given the coefficient on  $(E/\hat{L})$  of 0.33, the decline in unemployment rate as a consequence of the 1% rise in employment would now be more muted, as the labour force would have also increased by 0.33%. The net effect would be a smaller fall in the unemployment rate of 0.64% points as shown in Table C2.

**Table C2**  
**Contemporaneous Impact of a 1% Increase in Employment on Unemployment Rate**

<i>Assuming <math>U_0=4\%</math></i>	<b>Without Encouraged Worker Effect</b>	<b>With Encouraged Worker Effect</b>
Fall in Unemployment Rate (% point)	0.96	0.64
Increase in Labour Force (%)	0.00	0.33

### Lagged Encouraged Worker Effect

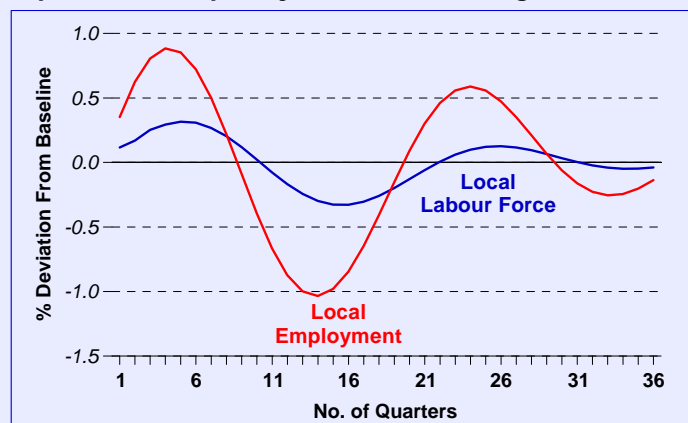
It is important to note from the earlier regression results in Table C1 that employment can also affect the labour force via the indirect linkage of the lagged labour force.

Taking into account the contemporaneous and lagged impact of employment, the total accumulated encouraged worker effect over two quarters is 0.41%. In other words, the labour force increases by 0.33% within a quarter and by a further 0.08% ( $0.33 \times 0.248$ ) in the next quarter.

### *Simulating the Encouraged Worker Effect*

To assess the responsiveness of both employment and the labour force to changes in the economy, a macroeconomic model such as the MMS, can be used to take into account the extensive inter-linkages in the economy as a whole. The MMS is used here to simulate a temporary improvement in the external environment. The resulting impact on both employment and the labour force is shown in Chart C3. The presence of the encouraged worker effect can be seen, with the labour force expanding in tandem with the increase in employment levels as implied by the labour supply equation specified above.

**Chart C3**  
**Impact of a Temporary Increase in Foreign GDP Growth**



\* EPD, MAS internal estimates



**Sum-up**

The econometric results presented above suggest the existence of some degree of encouraged worker effect across the business cycle. This labour supply response working through participation rates has implications for the speed at which the headline unemployment rate can be expected to improve following a turnaround in employment prospects in the economy. These results, when combined with the discussion in the main text on the link between GDP and employment growth (Section 3.3), provide EPD with valuable empirical insights into the dynamics of labour market adjustment in the Singapore economy.

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## 4 Outlook

The year ahead is likely to be characterised by a more modest pace of economic expansion. On the external front, leading indicators have suggested slower growth in the global economy compared to the exceptional performance in 2004.<sup>1</sup> Activity in the global IT industry will slow in 2005. Likewise, growth in the Singapore economy will ease from its cyclical high and settle at the lower half of the 3-5% range.

The next section provides a review of the outlook for the external economies, before turning to the prospects for the global electronics industry and its implications for the domestic economy.

### 4.1 External Outlook

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**The outlook for the US economy is positive in the near term although significant headwinds remain.**

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The near-term outlook for the US economy is positive, with Q1 2005 GDP growth widely expected to come in at about 4%. Retail sales were firm, rising by 0.5% m-o-m SA in February 2005, after a gain of 0.1% in January. Latest advance retail sales for March show a steady, albeit slower-than-expected, rise of 0.3%. Industrial output continued to expand at a fairly steady pace of 0.3% m-o-m SA in February. As a result, the industrial capacity utilisation rate reached 79.3% in February, the highest in over four years. With long-term interest rates still low, the housing sector continued to do well. Housing starts rose to a thirty-year high of 2.2 million units on an annualised basis in the first two months of 2005, compared to an average of 1.9 and 2.0 million units in 2003 and 2004 respectively.

After several quarters of fairly robust economic growth, the output gap has narrowed considerably. According to IMF estimates, the output gap will shrink to -1.3% of potential GDP in 2005, from a trough of -2.5% in 2003. As capacity utilisation rates continue to rise, the degree of slack in the economy is rapidly diminishing. Labour productivity growth rates have also eased somewhat recently, alongside sustained improvements in the labour market.

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<sup>1</sup> The IMF (2005a) estimates global growth in 2004 at 5%, the strongest in almost three decades.

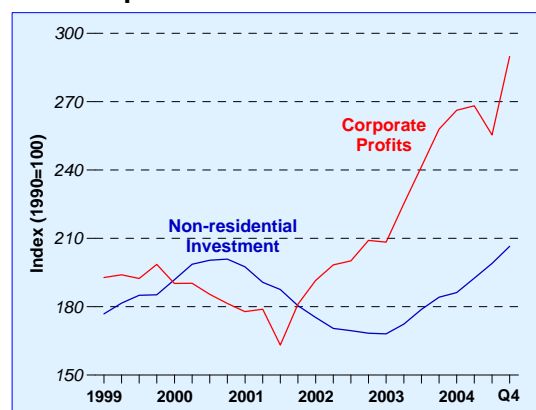
Going forward, the prospects for the US economy hinge on a continued expansion of corporate investment spending and hiring. Corporate capital spending has experienced double-digit growth since Q2 2003 and prospects remain favourable for continued increase in the near term for a number of reasons: corporate profits have risen sharply since the recession ended in November 2001 (Chart 4.1), cash flows are strong, gearing has declined, corporate credit spreads have narrowed significantly (Chart 4.2), long-term interest rates have remained fairly low (although they picked up somewhat in March 2005) and sentiment indicators such as CEO surveys have continued to paint a positive picture. The continued improvement in the labour market and decline in the unemployment rate lend some support to expectations of strength in corporate capital spending this year.

Forward-looking indicators such as the ISM manufacturing and non-manufacturing indices (Chart 4.3) and the Conference Board Consumer Confidence Index continue to hover at levels consistent with fairly rapid growth in the near term. However, the Conference Board's Leading Indicator Index has eased compared to last year, suggesting that GDP growth this year is likely to come in somewhat softer compared to last year's 4.4%. (Chart 4.4)

Furthermore, the recent rise in commodity prices and core inflation may increase the risk of a more aggressive pace of monetary policy tightening by the Fed. Core CPI inflation shot up to 2.4% y-o-y in February (0.3% m-o-m), the highest in two and a half years. Moreover, as highlighted by Fed Chairman Greenspan in his Congressional testimony in February, there are increasing signs that prices of consumer goods imported into the US are beginning to pick up after a considerable lag from the time the dollar first started to fall in March 2002. (Chart 4.5) This increased exchange rate pass-through effect, together with the renewed upward movement in oil prices, could lead to reduced real income and a tighter monetary policy stance, which could restrain economic activity in the later part of this year.

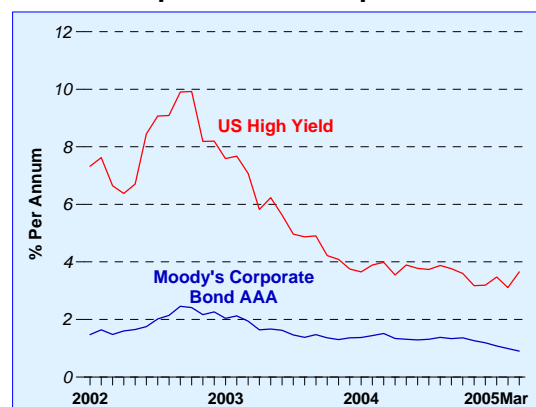
Overall, the US economy is expected to shift to a lower gear in the second half of this year. The Fed projects GDP growth at between 3.75% and 4% for 2005 as a whole, with core inflation coming in at 1.5-1.75% (based on core personal consumption expenditure). The IMF expects steady growth for the US of 3.6% in 2005 and 2006. Nevertheless, with a broad range of forecasts

**Chart 4.1**  
**US Corporate Profits and Investment**



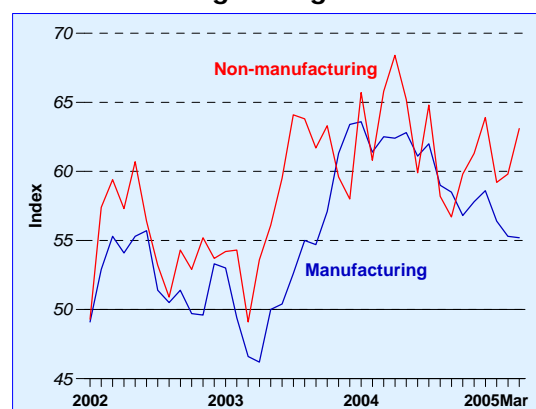
Source: CEIC

**Chart 4.2**  
**Corporate Credit Spreads**



Source: Datastream

**Chart 4.3**  
**ISM Manufacturing and Non-manufacturing Purchasing Managers' Indices**



Source: CEIC

pointing towards stronger growth in the US relative to the other G3 economies, the US current account deficit is likely to widen further.

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### Growth in the eurozone is likely to be modest.

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The European economies hit a soft patch in H2 2004 as personal consumption spending eased. Household spending may have been affected by uncertainties over labour market reforms in a number of large European countries such as Germany and France. In Germany, the Hartz IV reforms were aimed at improving work placements, cutting back on unemployment benefits and generally reducing the incentives for the unemployed to remain jobless. In France, there was some debate about the need to introduce greater flexibility to the 35-hour workweek. Furthermore, after breaching the 3% limit, fiscal policy in a number of eurozone economies is beginning to become less accommodative, with many countries striving to rein in their deficits.

Leading indicators, such as the industrial confidence index and the Ifo index for Germany, suggest that the near-term outlook remains modest. (Chart 4.6) Overall, we do not expect a significant reduction in the unemployment rate, which remains close to 9% in the eurozone. The ECB expects the eurozone's GDP growth to ease to 1.6% this year, a slight softening from the 1.8% attained in 2004.

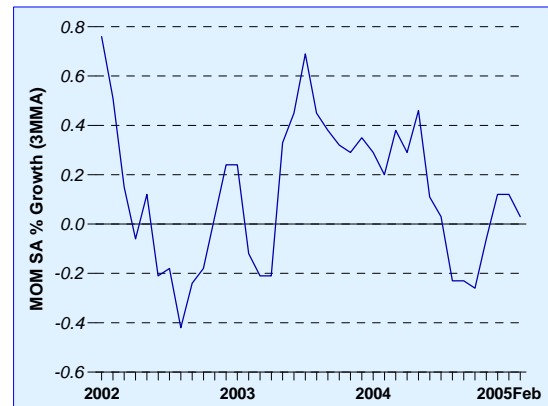
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### Japan appears to be emerging from a technical recession but growth prospects are modest for 2005.

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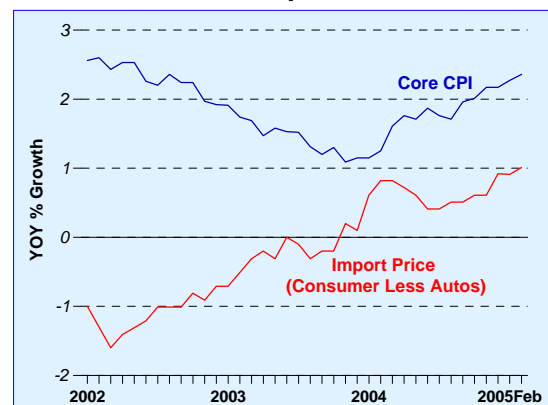
The near-term outlook for the Japanese economy has improved a little after a sluggish nine months from Apr-Dec 2004. Recent data suggests that a modest pickup in GDP growth is likely, at least in the early part of 2005. Personal consumption expenditure appears poised to recover after contracting by 1% q-o-q SAAR in Q4 2004 due to an unseasonably warm winter which dampened winter-related household spending. In January 2005, retail sales, industrial production, employment and nominal wages all registered fairly strong gains, raising hopes of a strong recovery at the start of this year. Industrial output, for instance, rose by 3.2% m-o-m SA in January. Employment increased by almost half a million jobs on a seasonally adjusted basis in the same month, the strongest in more than 12 years, indicating that firms might now be ready to increase hiring,

**Chart 4.4**  
Conference Board  
Leading Indicator for the US



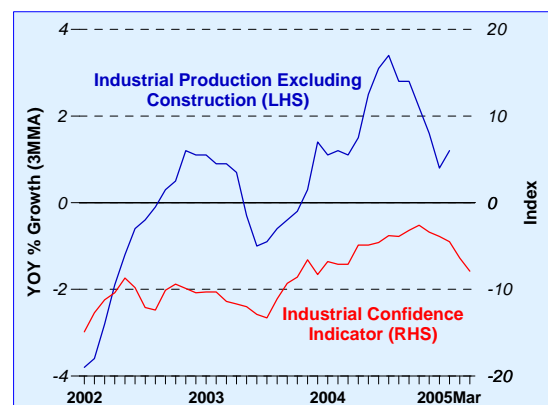
Source: CEIC

**Chart 4.5**  
US Core CPI and Import Price Inflation



Source: CEIC

**Chart 4.6**  
Eurozone Industrial  
Production and Confidence



Source: Datastream

after many years of shedding capacity and labour. However, the optimism generated by the January figures soon gave way to more modest expectations as the February data showed a significant pullback from the high levels a month earlier. Industrial output, for instance, contracted by 2.3% m-o-m in February.

The BOJ's latest March 2005 Tankan survey pointed towards some moderation in growth momentum as higher oil and other commodity prices, as well as softer exports, took their toll on business sentiment. The widely-followed confidence index for large manufacturers fell to a lower-than-expected 14 points in March 2005, from a thirteen-year high of 26 points in September 2004. (Chart 4.7) Overall, these indicators suggest that Japan could grow a little faster this year compared to H2 2004, and come in at around 1%, down from 2.7% last year.

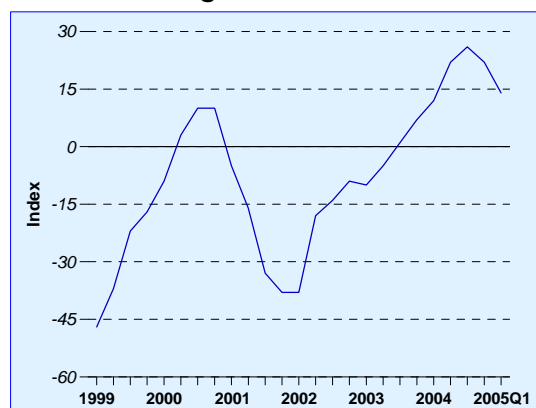
**In Northeast Asia, the NIEs have started to slow, although China's growth has remained firm.**

In line with the softer growth of the industrial economies in H2 2004, export and GDP growth began to pull back across parts of East Asia, in particular, among the NIEs. (Chart 4.8) Being more export-driven and exposed to the electronics cycle, the NIEs have experienced greater volatility in GDP growth in recent years. The downturn in the global electronics industry is expected to continue, at least into H1 2005.

GDP growth in China remained firm at 9.5% in Q1 2005, supported by strong exports, continued growth in fixed investments and robust household spending. China continued to benefit from strong FDI inflows and the relocation of more labour-intensive operations from the rest of Asia. The expiry of the Multi-Fibre Arrangement should also benefit the country, as it is a low-cost producer.

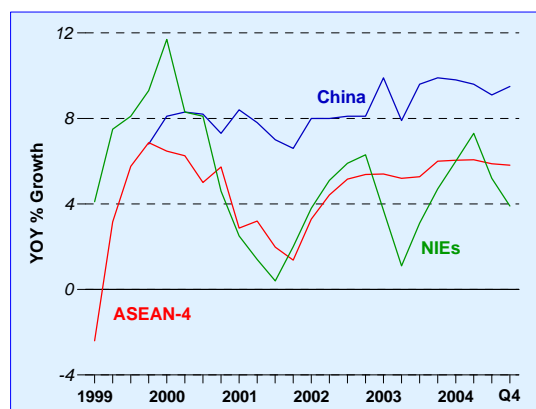
Nonetheless, the Chinese economy is expected to gradually decelerate as the government continues to impose selective measures to curb over-investment in some sectors, such as steel and cement plants, and in residential properties. In line with such measures, fixed asset investment spending slowed to 25% y-o-y in the first two months of this year, from 53% a year ago. Still, this remains above the official target growth rate of 16% for fixed investment this year. Banks' credit growth has also stabilised at 10-15% y-o-y in the past seven months to February 2005, from a high

**Chart 4.7  
BOJ's Tankan Survey  
of Large Manufacturers**



Source: Datastream

**Chart 4.8  
East Asia GDP Growth**



Source: CEIC

of 24% in August 2003. (Chart 4.9)

The outlook for the NIEs (Korea, Taiwan and Hong Kong) will depend to a greater extent on conditions in the global electronics industry. While there have been some bright spots (such as MP3 players and flat panel TVs), the demand for electronics and computer products has generally been weaker than expected. Coupled with a fairly significant build-up of manufacturing capacity last year, particularly in semiconductors, this has led to significant product price erosion and cutbacks in output. Nonetheless, overall GDP growth in the NIEs is not expected to slow dramatically in the near term, as the electronics downturn is expected to be milder than in previous downturns, and domestic demand is likely to provide some support. The NIEs are expected to grow by about 4% this year, compared to 5.5% last year.

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#### Growth in Southeast Asia is also expected to soften.

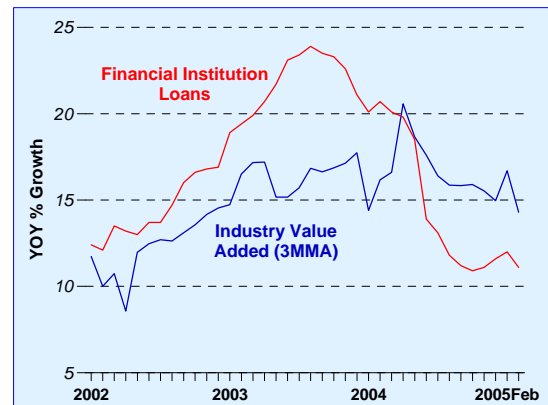
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In Southeast Asia, growth prospects are generally expected to be more modest this year, given the downturn in the global electronics industry, and as further fiscal consolidation takes place across the region.

Nonetheless, domestic demand – in particular, private consumption spending – should hold up for a number of reasons. First, the labour market has improved considerably in many countries, which will help to shore up household income and spending. Second, interest rates should remain relatively soft provided inflation – especially core inflation – remains in check and capital continues to flow into the region. Third, a faster pace of investment spending, particularly in infrastructure projects, will help to boost domestic demand. Both Indonesia and Thailand, for instance, have announced fairly ambitious infrastructure development plans.

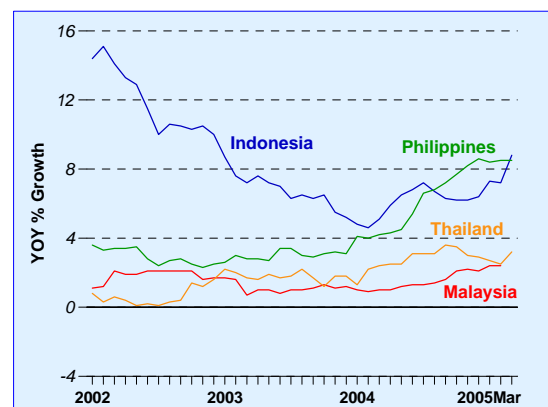
Driven largely by the sharp rise in oil prices, headline inflation has gone up across much of Southeast Asia over the past year. (Chart 4.10) While the rise in inflation has been fairly moderate across the region, the Philippines, in particular, has seen a notable jump in inflation to over 8% in recent months. Increased inflationary concerns have led to a tighter monetary policy stance in a number of central banks in the region. The BOT was the first to raise interest rates. This was followed, more recently, by the central banks in Indonesia and the Philippines. Nonetheless, partly because of uncertainties about the effects of oil prices,

**Chart 4.9**  
**China's Loan Growth and Industrial Production**



Source: CEIC

**Chart 4.10**  
**ASEAN-4 CPI Inflation**



Source: CEIC

some central banks in the region have kept their policy interest rates unchanged. Bank Negara Malaysia, for instance, has kept its policy rate unchanged at 2.7% since April 2004 as inflation has remained at modest levels of under 3%.

Overall, GDP growth in the ASEAN-4 economies is expected to ease to just over 5% this year, from about 6% in 2004.

## 4.2 What Lies Ahead for the Domestic Economy?

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**The outlook for the Singapore economy is predicated on the prospects for the global IT industry.**

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Following strong growth in 2004, the domestic economy is expected to moderate in 2005. With the risks of a hard landing in the US and China having dissipated somewhat, the outlook now hinges largely on the prospects for the global IT industry.

### An IT Mini-Cycle?

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**A shallower IT downturn appears likely.**

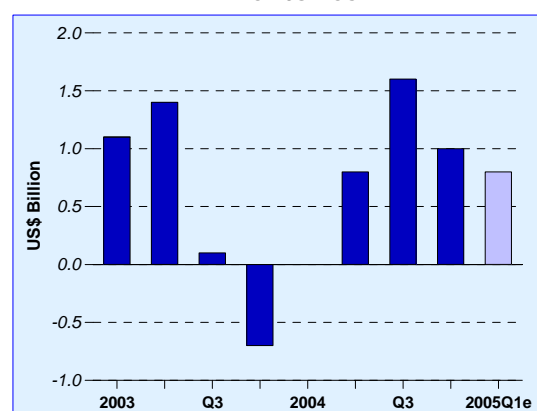
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It was increasingly evident towards the end of 2004 that the global IT industry was heading towards a lull in activity, especially in the midstream semiconductor segment. Excess inventories, which had been building up since Q2 2004, raised concerns that there would be a sharp inventory correction similar to the 2001 downturn.

However, it appears that producers have been more vigilant this time around in managing inventory excesses, particularly in the midstream semiconductor segment. Indeed, survey results suggest that excess inventories in the semiconductor supply chain had declined to US\$0.78 billion in Q1 2005, after hitting a peak of US\$1.6 billion last year. (Chart 4.11) The industry appears to be on track to “digest a US\$1.6 billion surplus completely by the end of Q2 2005”. (Clarke 2005)

EPD's own estimates also suggest that the semiconductor inventory correction this time round has been quicker than in previous episodes. In the last two IT downturns, inventory correction in the US semiconductor industry only set in some 9-11 quarters

**Chart 4.11**  
**Global Excess Semiconductor Inventories**



Source: iSuppli Corporation

after the initial accumulation phase. In comparison, the inventory build-up lasted just five quarters in this current cycle, before correction occurred in Q4 2004.<sup>2</sup> (Chart 4.12) This quicker adjustment has meant good news for the industry, with a better-than-expected pickup in global chip sales in Jan-Feb 2005. With the surplus inventory problem largely contained, the question remains if end-user demand is strong enough to support a rebound in production.

The downstream segment was the key support in H2 2004. US new orders for communication equipment, for instance, grew by an average of 7.5% q-o-q SA over Q3 and Q4 2004, buoyed by the 30% growth in mobile phones sales last year. (Gartner 2005) Similarly, PC new orders picked up in Q4 2004, growing 16% for the year. (Chart 4.13) However, despite robust electronics demand at the close of 2004, recent incoming data has pointed to some weakening in end-demand over the first two months of 2005, largely due to the fall-off in demand for communication equipment.

Analysts generally agree that there is no impetus for a strong boost to the global IT market this year, with a lack of significant drivers of growth in the near term. In the corporate segment, the PC replacement cycle has reached its end, while in the consumer segment, several eagerly anticipated products are expected to come onto the market only in late 2005 or early 2006. These include the next-generation game consoles such as Xbox-II and Playstation 3.

Nonetheless, most analysts do not foresee a sharp fall-off in demand either. The prospects for the key consumer segment will be contingent on economic conditions in the G-3 markets, which are expected to stay healthy, albeit with some moderation from the growth seen in 2004. For instance, the current IDC growth forecast for global PC shipments in 2005 remains high at 9.7%, although this is marginally lower than the 10.1% forecast announced in November 2004.

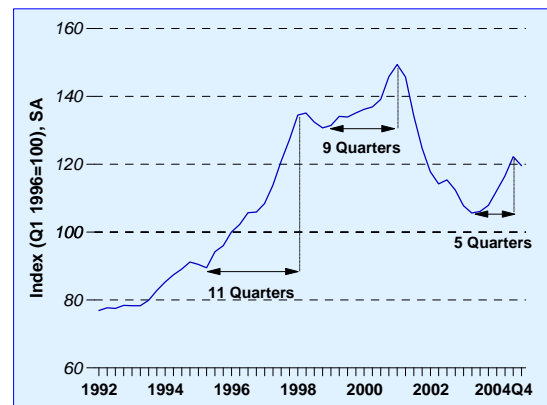
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**Further weakness in the global IT industry is expected in the immediate months ahead.**

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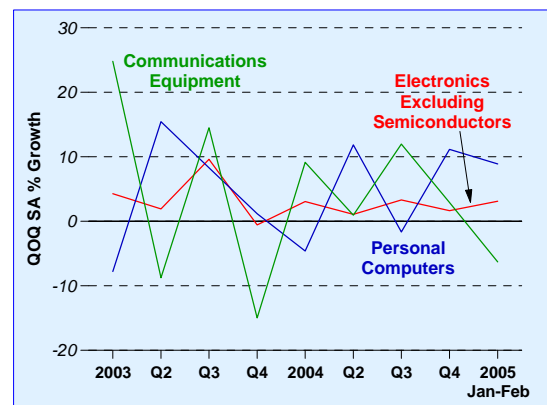
On the whole, recent evidence has pointed towards further downward adjustment in the global IT industry over the first two quarters of 2005, followed by a

**Chart 4.12**  
**Estimated US Semiconductor Inventories**



\* EPD, MAS internal estimates

**Chart 4.13**  
**US New Orders**



Source: US Census Bureau

<sup>2</sup> See Basu and Siems (2004) for an excellent discussion on how IT-enabled supply chains have resulted in lower inventory, reduced logistic costs and streamlined procurement processes. The authors argue that the greater efficiency in supply chain operations have reduced economic volatility and strengthened productivity growth in the US.



recovery sometime in the latter half of the year. Barring a collapse in downstream demand, the global IT industry should see a decisive turnaround once the excess inventory in the midstream is worked off. According to industry analysts, global semiconductor revenue (a proxy for IT demand) is expected to moderate from the exceptional 28% growth last year to low single-digit this year. (Table 4.1)

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**Nonetheless, medium-term prospects remain positive, with consumer electronics a support for growth.**

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Despite the somewhat weak near-term outlook, the medium-term prospects for IT remain positive. Consumer electronics<sup>3</sup> is likely to become a more important source of global IT demand due to increasing use of digital technology in consumer products. This transformation is most apparent in digital imaging electronics such as that found in digital cameras, which has practically rendered traditional film cameras obsolete. Digital imaging technology holds the promise of making already popular recording, storage, display and distribution of digital images even more widespread and pervasive. (Please refer to Box Item D for a more detailed discussion of the trends in digital imaging.)

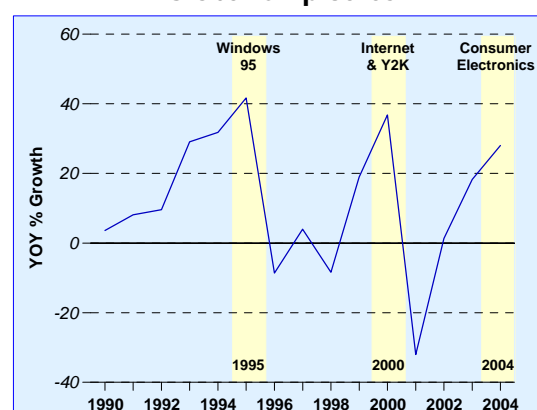
A look at previous technology cycles shows that there was a strong driver behind each of the three most recent booms. (Chart 4.14) The first in 1995 followed the launch and adoption of Microsoft's graphical interface Windows 95, and the second in 1999 arose from the critical mass achieved in internet usage and the race towards Y2K compatibility. In the latest cycle, consumer electronics has been the key support behind the upswing, which began in 2003 and peaked in Q2 2004.

**Table 4.1  
Forecast of Global Chip Sales, 2005**

Analyst	2005 % Growth Forecast	Date Released
iSuppli	1.9	3-01-05
SIA	0	3-01-05
Gartner	3.6	23-03-05

Source: iSuppli, SIA, Gartner

**Chart 4.14  
Global Chip Sales**



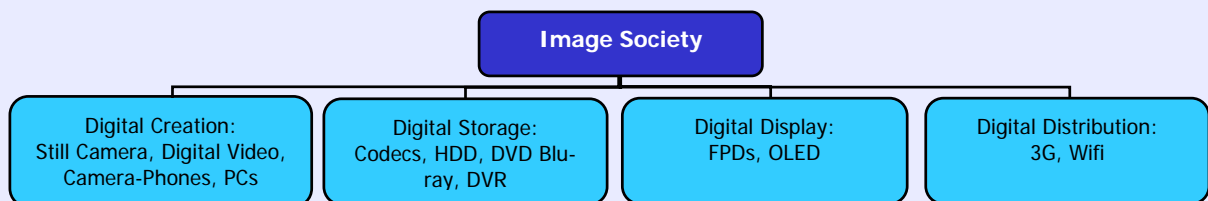
Source: Semiconductor Industry Association

<sup>3</sup> Consumer electronics include products such as digital cameras, cellular phones, DVD players and recorders, and flat panel displays.

### Box Item D The Image Society

The stellar year for IT markets in 2004 was driven by demand for digital imaging consumer electronics. The central theme in the upturn was the shift of consumer demand from analogue to digital alternatives in media products. In fact, a mass-market shift in digital imaging is emerging, which reflects the convergence of applications encompassing image creation, storage, display and distribution. (Figure D1) Instead of a single killer application as a convergence product, imaging technologies are likely to develop as discrete applications with specialised functions. These functions complement each other to shape an image-centric lifestyle. This box item highlights recent trends in each of the image-centred technologies.

Figure D1



#### ***Digital Image Creation***

Digital image creation entails the capturing and editing of digital still and moving images. One such application is the camera phone. Although camera phones developed much later than still digital cameras, the product has created spin-offs to at least four image-centred technologies: image capture, flat-panel display, mini hard disk drives and 3G networks. With sales totalling 257 million units in 2004, the future for camera phones looks promising. Currently, cameras are already fast becoming a standard feature on phones with around 40% of all cellular phones sold globally in 2004 having built-in cameras. This share is set to increase to almost 100% in 2008.

#### ***Digital Image Storage***

The increasing usage of hard-disk drives (HDDs) in a myriad of consumer electronic devices points to the vast potential for manufacturers and consumers alike. There were 17 million HDD-based consumer electronic devices sold in 2003, approximately 7% of total HDD volumes shipped in 2003.

In particular, the push towards one inch and smaller drives is gaining momentum, with this HDD segment set to grow by a compound annual growth rate of 90% from 2003 to 2007. These compact drives can be integrated into cell phones, digital cameras and camcorders to radically increase storage capacity thereby improving their video handling capability. The increased storage capacity is one of the key spokes of the multimedia vision of cell phones, which can then function as digital still cameras, camcorders, personal media players, and video conferencing tools.

#### ***Digital Image Displays***

The differences in the two main competing flat panel display technologies, plasma and liquid crystal displays (LCDs) are narrowing. Formerly used widely only in smaller display applications like PCs and cell phone screens, LCDs are now competing with plasma displays in the fast-growing, high margin home entertainment market. The rise in LCD TV demand has been exponential—from 0.1% of total demand for TV sets in 2000 (or 181,000 sets) to 4.7% in 2004 (8.3 million sets). Costs should continue falling as investments to boost supply increase, pushing LCD TVs across the threshold from niche to mass market. In the longer term, the Federal Communications Commission's 2006 target for complete conversion from analogue to digital high-definition TV broadcasting in the US will expedite the migration to flat panel display TVs by encouraging consumers to replace their existing televisions.

### ***Digital Distribution***

With the appropriate hardware in the hands of consumers, the missing link is in connecting consumers in a meaningful way with one another and/or content providers. The challenge is to have in place infrastructure capable of providing increasingly more bandwidth to make such connections. Whereas in the past this meant laying fibre optic cable beneath roads and oceans, today's connecting technologies — such as third generation (3G) networks — are wireless, but yet are able to deliver high quality images reliably and seamlessly.

Today, there are 113 3G networks in the world, twice as many as in 2003. However so far, 3G had been long on promise and short on delivery. 3G phones had been touted as an all-in-one device that would become an indispensable "life tool" carried everywhere by everyone. After a launch in Japan and Korea plagued by technical difficulties, and repeated delays in Europe's launch, 3G seemed to be neither pervasive nor indispensable. In fact, what 3G appears to be best at handling is the traditional phone call, given that the greater bandwidth of 3G networks provide typically three times the amount of voice capacity of 2G at a quarter of the cost.

Going forward, however, demand growth for 3G phone services remains positive, especially in Asia. IDC estimates that 3G subscriptions in Asia outside of Japan will grow by half this year to more than 17 million users, driven by the established South Korean market. As for Singapore, Singtel's trial 3G network was recently made available to consumers in December 2004. 3G technology has up to 384Kbps of bandwidth compared to about 40Kbps in 2G, giving users on the move access to high-speed internet surfing, video conferencing, picture messaging, video streaming, navigational aids and TV programmes — applications that will make mobile imaging a reality.

### ***Sum-up***

The confluence of technologies which allow the consumer to create, store, display and distribute digital images has a huge social impact not only on how people connect with one another, but also on how institutions and corporations interact with people. Whether it will transform the work space, reinvent the home space, or regulate the thought space, the infinite multiplicity of digital images is certain to bring to reality what previously could only be imagined.

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Whereas the IT cycle was previously driven by demand for computers, the upturn in the current cycle has been characterised by a distinct increase in consumer electronics demand. Indeed, the strong growth in global chip sales in 2003 and 2004 could be largely attributed to the global consumer market as consumers adopted new technologies and multi-functional smart devices such as camera phones and DVD recorders. The 50% share of semiconductor chips going into consumer applications highlights the importance of consumers to the IT industry (Semiconductor Industry Association 2005).

There is considerable potential for growth in the consumer electronics segment, given the growing penetration of digital devices in today's household. Some of these include digital cameras for image creation, compact hard disk drives for image storage, flat panel displays for image display, and 3G networks for image distribution. In the US, devices that place control in the hands of the consumer and add convenience to their lives have proven to be remarkably popular; for example, the videocassette recorder introduced in the late 1970s is present in 91.5% of US homes today. Currently, aside from the personal computer, digital imaging devices have the highest penetration rates in US households. (Chart 4.15)

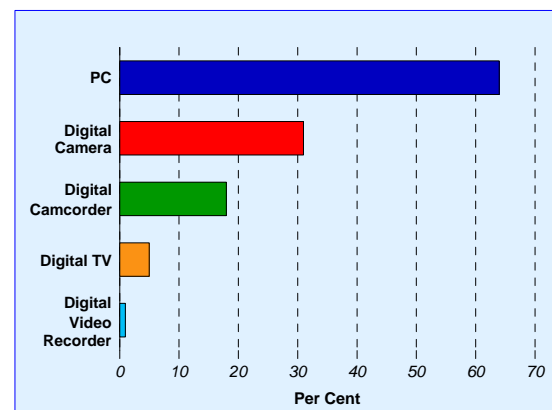
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**Singapore is poised to benefit from the consumer electronics boom over the medium term.**

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With digital imaging consumer electronics driving growth in the medium term, Singapore – as a leading component manufacturer in semiconductors – is primed to ride the consumer imaging electronics wave with its established production facilities and strong intellectual property (IP) laws. Semiconductors, which fuel the processing power and storage capacity in almost all digital gadgets, should see increased overall activity here as devices demand more memory and computing power. In addition, Singapore's electronics sector is likely to play an important role in the area of consumer electronics product design and R&D. Indeed, Singapore has had encouraging results attracting investments in this sector. Dell, for instance, has moved its design and research functions for displays and imaging lines of business from the US to Singapore, while Motorola's R&D centre for 3G handsets in Singapore will undertake the development of 3G mass market phones.

**Chart 4.15**  
**Penetration Rate of Consumer Electronics Devices in the US, 2003**



Source: Consumer Electronics Association

## Sectoral Prospects for 2005

While the longer term developments in IT appear promising, a key characteristic of the IT industry is that it is prone to excesses in the short term. In late 2003 and into early 2004, for instance, overly rapid expansion of certain IT products had led to an unplanned build-up of inventory.

### **In-house indicators point to lingering weakness in the domestic electronics industry.**

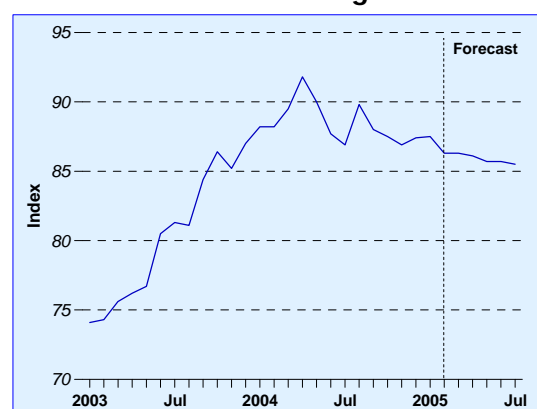
For the year ahead, the growth profile of the global IT industry will translate into a similar trajectory for the domestic electronics sector, as is evident from EPD's in-house leading indicators. The MAS Electronics Leading Index – first introduced in the April 2004 issue of the *Macroeconomic Review* – which combines information from a range of IT variables, points to some continuing weakness in the domestic IT sector for the rest of H1 2005. (Chart 4.16)

### **Non-electronics output is expected to continue expanding, albeit at a more modest pace.**

The non-electronics manufacturing sector looks to continue growing steadily in 2005, albeit at a more moderate pace. Notably, the marine & offshore engineering segment is expected to be one of the star performers, as the industry continues to maintain strong order books with construction of offshore rigs driving output growth. The oil-refining sector should also maintain healthy growth this year with demand for oil still strong. Bolstered by demand in China and limited refining capacity coming on-stream, oil-refining margins look set to strengthen after growing by 55% last year. (Chart 4.17)

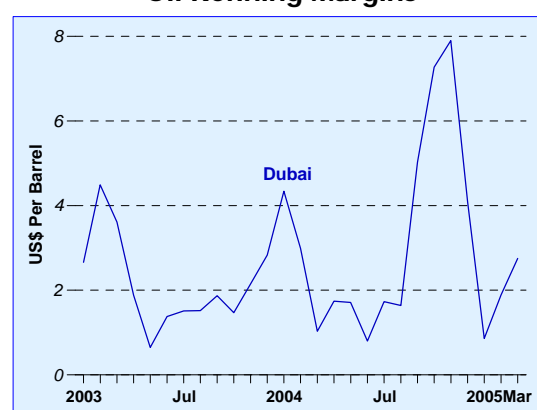
The strong expansion of the domestic pharmaceutical industry last year is not likely to be repeated in 2005, a view echoed by Economic Development Board and A\*Star. These two agencies are predicting that the domestic biomedical cluster will turn in “modest” growth this year, as production settles down following a significant ramp up over the past few years.

**Chart 4.16**  
**Electronics Leading Index**



\* EPD, MAS internal estimates

**Chart 4.17**  
**Oil Refining Margins**



Source: EnergyAsia

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**Trade-related industries should mirror the profile of the domestic manufacturing sector.**

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Following the profile of the domestic manufacturing sector, trade-related services are likely to soften further in H1 before some improvement in the latter half of this year. Hub-related activities such as entrepôt trade, could benefit from the increase in manufacturing activity in the region, once the upturn in global electronics demand materialises in the second half of the year. Air and sea cargo shipments should also expand alongside the pickup in regional and domestic exports.

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**Consumer spending is likely to remain modest for the rest of the year.**

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Growth of the domestic-oriented industries is likely to be capped by the weaker economic prospects in the earlier part of the year. Supporting this view, the Q1 Business Expectations Survey by DOS indicate more pessimistic business sentiments in the domestic wholesale and retail industries for the first six months of the year. (Chart 4.18)

In tandem with the slower pace of economic growth, consumer spending will be dampened somewhat in 2005. Motor vehicle sales, which were boosted by a record number of vehicle de-registrations last year, will slow, with growth unlikely to reach the 21% seen in 2004.

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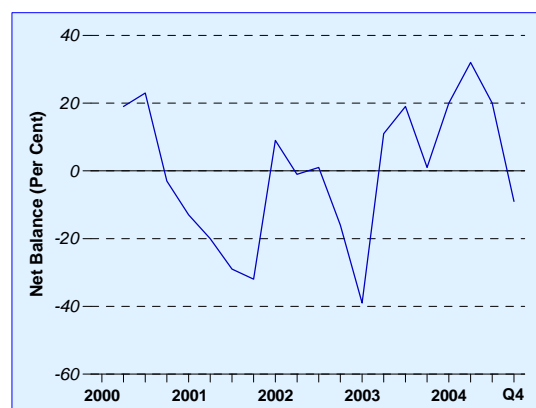
**The tourism-related cluster could see slower growth this year.**

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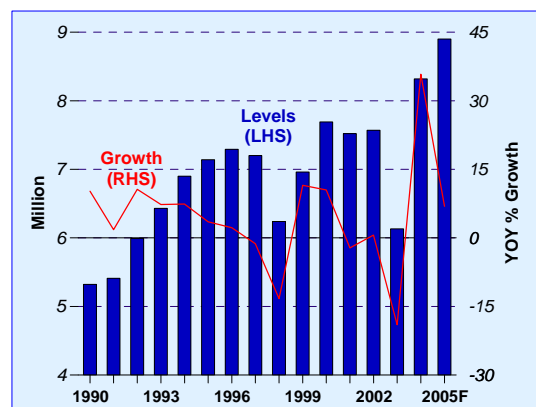
The generally slower economic growth in the region could result in less spectacular tourist arrival figures this year compared with 2004. STB expects visitor arrivals to reach 8.9 million, an increase of 6.9% over 2004, but considerably slower than the 36% growth recorded last year. (Chart 4.19)

Tourist arrivals are expected to receive a boost from the budget airline segment. The three locally-based low-cost carriers (LCCs) have been a catalyst in the expansion of the traffic volume for certain short-haul routes. For instance, during the final three months of 2004, passenger traffic on the popular Singapore-Hong Kong and Singapore-Bangkok routes was reported to have grown by 26% and 18% respectively, relative to the same period a year ago. This was much higher than

**Chart 4.18**  
**Business Expectations for Wholesale and Retail Trade**



**Chart 4.19**  
**Visitor Arrivals**



the average growth of 11% for all routes at Changi Airport. (*Singapore Parliament Reports 2005*) With regulations pertaining to landing rights in the region expected to ease slightly this year, air passenger travel could rise further as new and existing markets are increasingly served by LCCs.

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### The outlook for the financial services industry remains positive.

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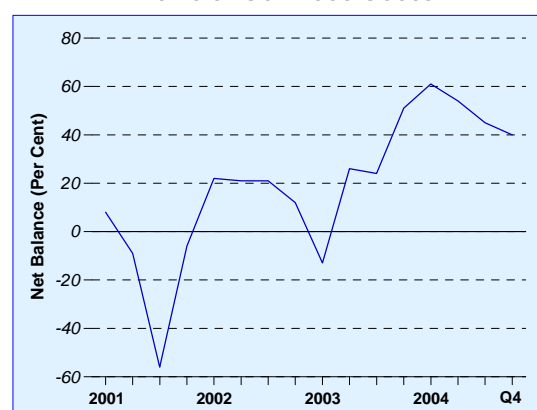
Growth in the financial services sector may well decelerate but remain positive over the remainder of 2005. In line with the more subdued outlook, results from the latest Business Expectations Survey conducted in December 2004, indicate that financial institutions have continued to scale down their expectations of prospects in the near term. A net balance of 40% of financial institutions polled expected favourable business conditions in the six months ahead, down from 45% and 54% in Q3 and Q2 respectively. (Chart 4.20)

The performance of the financial services industry in the year ahead will hinge on the banking sector. The buoyant performance of financial services over the past two quarters reflected in large part the upsurge in offshore lending, as well as continued support from loans in the domestic banking sector. However, the expansion in non-bank lending activity across most major segments has shown signs of tailing off, and is expected to weaken further over the near term. Loans growth to the key housing segment, in particular, has moderated in recent months. Nevertheless, some pickup could occur alongside the strengthening recovery in the residential property market, where transaction volumes have risen steadily to the highest levels in two years. (Chart 4.21) Lending to the industrial and commerce segments, however, is likely to be capped by more modest expectations of economic performance in the year ahead.

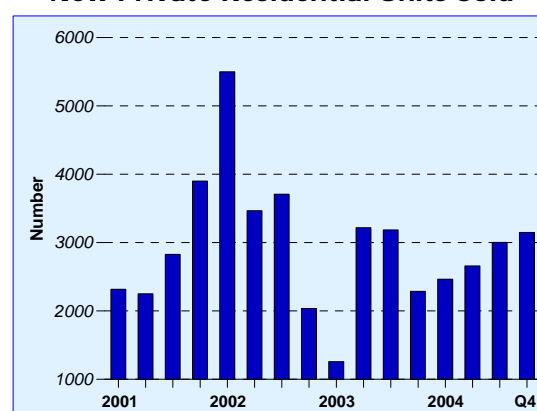
While the strengthening interest rate environment should eventually translate into stronger interest income, intense competition within the banking sector has thus far curtailed banks' ability to pass on the increased cost of funds to customers in the form of higher lending rates.

Banks' non-interest income is expected to be underpinned by corporate banking activity. Merger and acquisition deals, in particular, have been on the rise in recent years and are expected to continue

**Chart 4.20**  
Business Expectations of the Financial Services Sector



**Chart 4.21**  
New Private Residential Units Sold



strengthening, especially as local companies turn increasingly to offshore opportunities for growth. Banks' earnings from IPO underwriting activity are also expected to remain robust, although the number of new listings is unlikely to match the high of 80 in 2004. (Chart 4.22) Recent investigations into several alleged corporate scandals could have dented investor sentiment somewhat for the near term.

Meanwhile, prospects for the sentiment-sensitive industries remain mixed. The prevailing risk factors in the global economic environment – such as the external imbalances and the rising interest rate environment – continue to weigh on market sentiment. Conversely, the volatility in the global exchange rate environment could induce stronger activity in the forex market. Indeed, turnover values have generally been sustained at high levels in recent months, as investors actively re-aligned their forex exposures in anticipation of further currency fluctuations. After languishing for much of 2004, activity in the domestic stock market is also likely to pick up, on the back of attractive valuations and robust corporate earnings. There has already been a marked improvement in the early months of 2005, with turnover volumes increasing to their highest levels in a year.

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#### The outlook for the property market has improved.

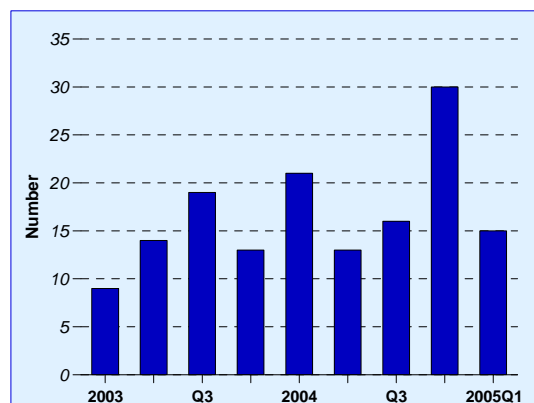
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Prospects for the property market appear to be more sanguine compared to six months ago. Private residential property prices bottomed out in Q1 last year, and have since registered three sequential quarters of increase. Similarly, HDB resale prices have been increasing sequentially since early 2002. (Chart 4.23) However, the pace of recovery is likely to be slow, constrained by the lower rate of economic activity this year.

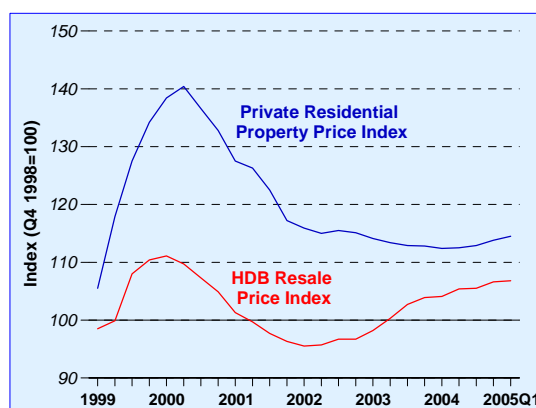
Moreover, the supply-side situation appears to have deteriorated somewhat in recent quarters, with the stock of unsold private residential units surging to 15,800 in Q4 2004, after having been gradually trimmed over the last two years to a low of 12,600 at end-September. (Chart 4.24)

Some caution on the demand side remains as well. Homebuyers have become more discerning and price conscious, in part due to the changes in rules over the past two years that restrict the availability of CPF

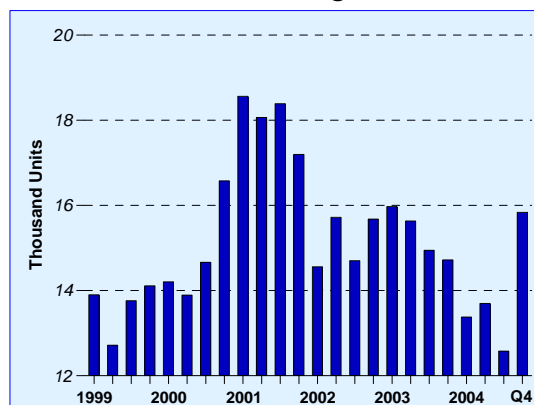
**Chart 4.22**  
**IPOs**



**Chart 4.23**  
**Private Residential Property and HDB Price Indexes**



**Chart 4.24**  
**Unsold Stock of Uncompleted Private Housing Units**





savings to fund property purchases. There could also be some unevenness in the pickup in demand, as residential projects that are strategically located or offer unique lifestyle marketing concepts will be more in demand than others.

**Construction activity is likely to be lacklustre in 2005.**

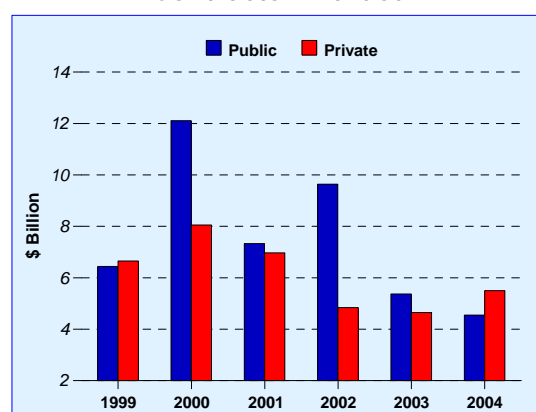
Notwithstanding the brighter outlook in the property market this year, growth momentum in domestic construction activity is likely to remain lacklustre. Indeed, the total value of contracts awarded – a leading indicator for construction output – was about \$10 billion in 2004, similar to that recorded in the previous year. (Chart 4.25) The slight increase in private contracts awarded in 2004 was offset by the decline in the value of public contracts, which was attributed to the postponement of several major projects to 2005, such as the Fusionpolis superstructure development. Looking ahead, although the building sector may see some improvement in the next few quarters,<sup>4</sup> construction demand is not expected to improve dramatically in 2005, as the recovery in demand is still not broad-based. The total value of contracts awarded is projected to come in between \$10-11 billion this year, largely unchanged from 2004.

**Steady as it goes into 2005.**

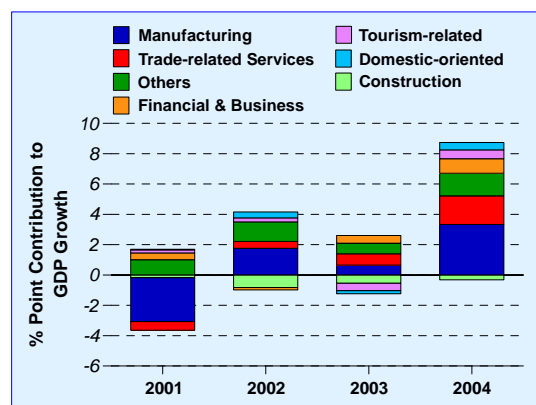
The Singapore economy is set to experience a less eventful year, after adjustment to a succession of shocks in recent years. GDP growth for 2005 as a whole is expected to come in at the lower half of the official forecast range of 3-5%.

Compared to 2004 when growth was driven largely by the manufacturing and trade-related services sectors (Chart 4.26), output in 2005 is likely to be more evenly distributed across the sectors, albeit at lower rates of expansion. With negative Q1 growth and possibly some lingering softness in economic activity in Q2, overall GDP growth in H1 2005 will weaken before some strengthening in the second half of the year. The anticipated upturn in H2 is consistent with the views garnered from EPD's consultations with industry as part of the April monetary policy review process.

**Chart 4.25  
Private and Public Sector  
Contracts Awarded**



**Chart 4.26  
Contribution to GDP Growth**



\* EPD, MAS internal estimates

<sup>4</sup> Some of the large projects expected to commence in 2005 include public projects such as Fusionpolis superstructure, Pinnacle@Duxton and Boon Lay MRT extension. Major private projects include City Square (Jalan Besar), and the building and upgrading of power plants at Jurong Island.

## 4.3 Labour Market

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### Employment gains are likely to moderate as output growth momentum eases.

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Going forward, the job market is likely to see continued hirings, although at a more modest pace.

According to the latest Business Expectations Surveys conducted by DOS and EDB, most of the firms in the manufacturing and services sectors have become less optimistic about the business outlook. This more cautious business sentiment is also confirmed in other labour market surveys. For example, findings from a recent poll by the Manpower Inc. have pointed towards some softening in new hirings. Although net employment expectations picked up slightly in Q2 2005 with 12% of employers intending to boost headcount, this remains significantly lower than the peak of 19% in Q3 2004. In particular, job sentiment in the financial services sector has become generally more subdued. (Chart 4.27)

Indeed, job-seekers too have also become somewhat less confident, with more people expecting labour market conditions to deteriorate alongside the rise in job insecurity. The latest survey by MasterCard International also suggests that Singaporeans were generally less optimistic about the economy in H1 2005, particularly in the areas of employment and income, as compared to six months ago. The proportion of respondents who were optimistic had declined from 41% to 32% in the latest survey.

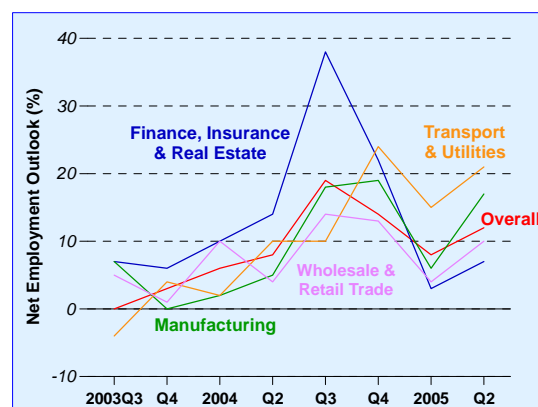
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### However, employment prospects for specific sectors remain good.

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There remain pockets of support in certain sectors of the economy, as indicated by the results of a survey by Hudson Global Resources (2005). Hiring optimism is expected to remain relatively high in several services-related sectors including legal, media and advertising, as well as healthcare in Q1 2005. This is consistent with the findings from the Business Expectations Survey, with almost 30% of companies in the legal, accounting and business consultancy segment indicating plans to expand hirings. The Hudson survey found that sales professionals were most in demand, followed by positions in marketing/public relations, and IT

**Chart 4.27**  
Employment Expectations for the Next Quarter



Source: Manpower Employment Outlook

Net Employment Outlook refers to the difference between the percentage of firms expecting to see a staffing increase and those who expect a decline in employment.

professionals. (Chart 4.28)

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**The overall unemployment rate is expected to fall further, as cyclical and structural unemployment improve.**

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The headline unemployment rate is likely to ease gradually in the quarters ahead, in line with continued growth in the domestic economy. The unemployment rate is expected to improve through the year and average around 3.5% in 2005, compared to 4.0% in 2004. Barring any unforeseen shocks, the unemployment rate should return to its natural rate of 3-3.5% by the end of this year.

The government's targeted measures for dealing with structural unemployment are also bearing fruit. The Workforce Development Agency (WDA), Community Development Councils and the National Trades Union Congress have been working in close cooperation to retrain the lower-skilled and older workers, and to match them with job vacancies. Hoon (2005) sees merit in adopting a targeted approach in tackling structural unemployment – which he believes will likely be higher than in the past. He argues that policies that target directly at job creation and job matching are especially effective in tackling structural unemployment, particularly in a geographically small country like Singapore. On job matching, he supported the work of the WDA in providing relevant training for unemployed workers and then attempting to match them to firms requiring workers with these skills.

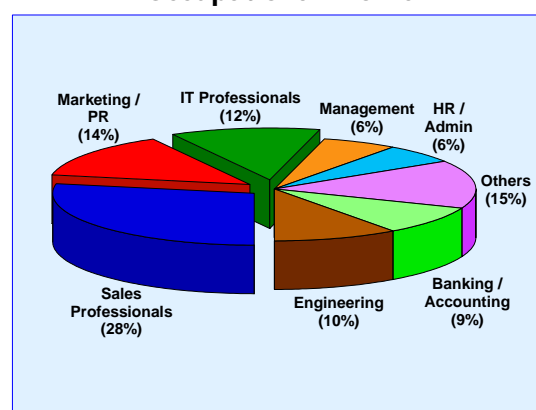
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**Early education is important in equipping the labour force with relevant skills.**

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Complementing the efforts to continually upgrade the skills of the workforce to ensure its relevance are the ongoing endeavours to revamp and improve the education system in Singapore, to ensure a supply of versatile and talented individuals entering the labour force. The focus of the changes and refinements lie in creating more opportunities and providing greater flexibility in the education system. Across the levels, the government is opening up more choices and new paths to help the young discover their talents and develop them to their potential.

**Chart 4.28**  
**Employment Demand by Occupational Profile**



Source: The Hudson Report, Jan-Mar 2005

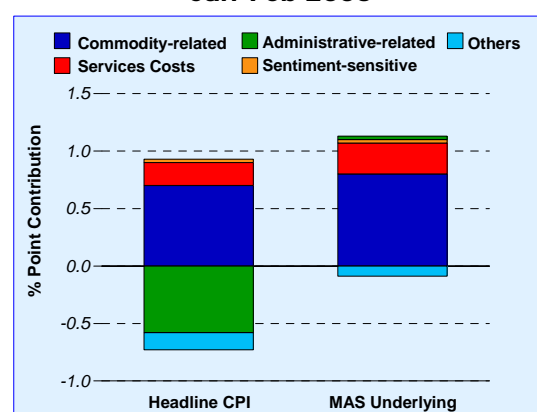
The importance of a good early education is supported by findings in the academic literature. Heckman (2005) documents empirical findings which showed that ability gaps between individuals opened up at early ages, and that early interventions have a substantial effect on adult performance, leading to a high economic return. For example, the results from the Perry Pre-school Project,<sup>5</sup> which was a study designed to investigate the effects of providing high-quality pre-school program for children born in poverty, suggests that enriched early intervention at the youngest ages improves their educational performance, contributes to their economic development, helps prevent them from committing crimes, and provides a high return on taxpayers' investment. The importance of early education lends support to the government's efforts in developing the young. In the Budget statement this year, the government, recognising the importance of investing in the young, has pledged a one-off top-up of \$100 to the Edusave account of every eligible primary and secondary school student, over and above the Edusave contributions that are given annually.

## 4.4 Inflation

### The rebasing of the CPI will have implications for headline inflation.

The weights and composition of the CPI basket were recently rebased to 2004 to incorporate the latest information from the 2002/03 Household Expenditure Survey (HES).<sup>6</sup> Under the new series, CPI inflation in Jan-Feb 2005 averaged 0.2% y-o-y, with the headline number for January revised downwards from 0.9% to 0.4%. CPI inflation was dragged down by the fall in private road transport costs (largely due to cars) and accommodation costs, which reduced the Jan-Feb headline number by as much as 0.6% points. (Chart 4.29) The MAS underlying inflation measure<sup>7</sup> – which excludes private road transport and accommodation costs – came in higher at 1.0%. Nonetheless, price pressures from other sources remained, due to higher prices in commodity-related items, as well as in some services costs, such as miscellaneous school fees.

Chart 4.29  
Main Factors Contributing to Headline  
CPI and MAS Underlying Inflation,  
Jan-Feb 2005



\* EPD, MAS internal estimates

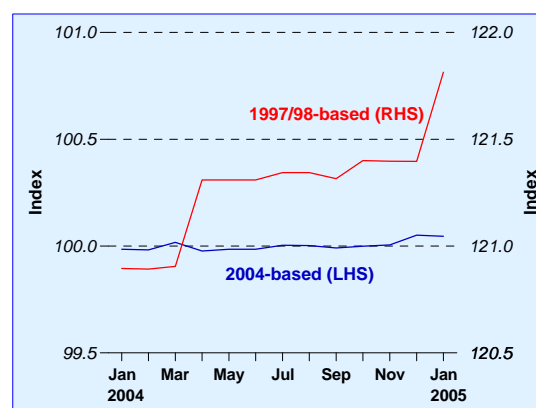
<sup>5</sup> The Perry Pre-school Project began in 1962 by the High/Scope Educational Research Foundation. Children from low-income, African American families in Michigan were randomly assigned to program and no-program control groups, where those in the program group received high quality pre-school program from ages 3 and 4.

<sup>6</sup> The old base period was from November 1997 to October 1998.

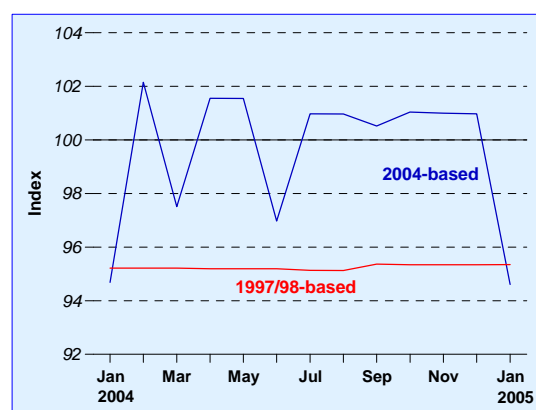
<sup>7</sup> The MAS underlying inflation measure excludes private road transport and accommodation costs, which can be significantly affected in the short term by changes in administrative controls and policies.

Several key changes to the CPI basket are worth highlighting. First, there were significant shifts in consumption patterns towards some items that have been experiencing falling prices or lower inflation rates, including communications and motor vehicles (largely cars). Second, several new items that are now included in the rebased series have had a dampening effect on overall prices. For instance, the inclusion of certain categories of medical services had a moderating effect on the movements of overall medical treatment costs. (Chart 4.30) Third, some existing items now show a more distinct declining price trend, such as household durables which may now be imported from lower cost locations. The price developments of some of the items above could reflect structural influences that may be persistent, such as liberalisation (e.g. telecommunication services), globalisation (e.g. cheaper import sources), technological advances and productivity growth (e.g. day surgery procedures). Nevertheless, EPD will be monitoring the disaggregated data on the rebased CPI series over the next few months before making any inferences about structural shifts in underlying inflation influences. Fourth, several methodological changes were also incorporated in the rebased CPI. Notably, rebates for service & conservancy charges and rents, previously excluded from the CPI, will henceforth be incorporated in the rebased series. This is likely to introduce considerable volatility to the CPI over the short term, as government rebates vary from month to month. (Chart 4.31) In addition, the owner-occupied accommodation series will be based on more updated Annual Values for HDB flats, which should provide a more accurate reflection of market price movements.<sup>8</sup>

**Chart 4.30  
Comparison of 1997/98 and 2004-based CPI for Medical Treatment**



**Chart 4.31  
Comparison of 1997/98 and 2004-based CPI for Accommodation**

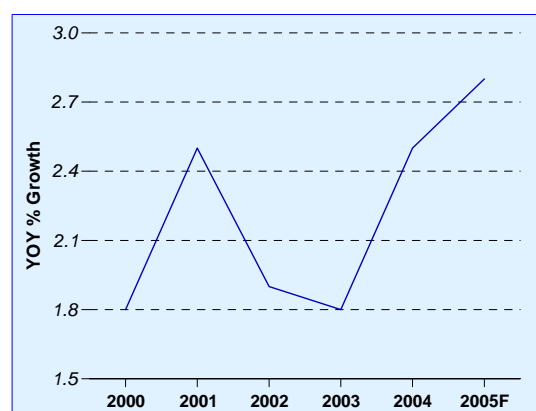


On balance, the changes incorporated in the revised CPI are expected to have a downward bias on the headline inflation number for 2005. Nonetheless, as indicated by the MAS underlying inflation measure, price pressures remain in the economy, with several upside risks arising from both the external and domestic fronts.

**Inflation risks are rising in the external environment.**

Concern over inflationary pressures have generally risen in the external environment in recent months. Inflation in our trading partner countries is expected to average about 3% in 2005, up from 2.5% in 2004 and 1.8% the year before. (Chart 4.32) In particular, the Fed has

**Chart 4.32  
Forecast of External Inflation**



<sup>8</sup> Annual Values for HDB flats were kept unchanged during the period 1990-2003.

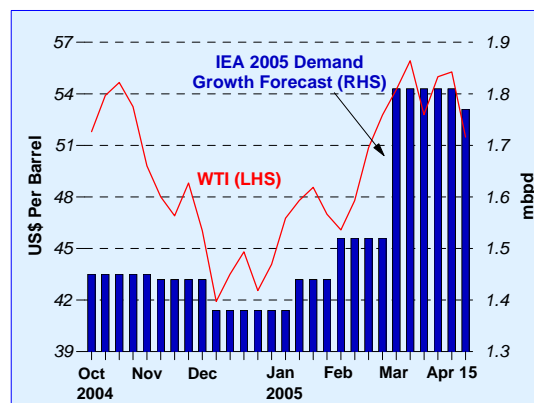
noted that price pressures have been creeping up partly due to some exchange rate pass-through effects and high oil prices. Higher energy costs have also been driving up consumer prices in several Asian economies such as Thailand and Indonesia.

Commodity prices have firmed further into this year. The price of light sweet crude oil has surged by about 30% since the beginning of this year, hitting a new record high of US\$58 at one point in early April, although prices have since receded to around US\$50. Against this backdrop, a strong consensus has emerged that a tight demand-supply outlook and geopolitical factors are likely to keep oil prices high and volatile for some time. Despite moderating global economic growth and higher oil prices, oil demand has thus far remained resilient. The International Energy Agency (IEA) projects overall oil demand growth this year to hit 1.8 million bpd, compared to an earlier projection of around 1.4 million bpd at end-2004. (Chart 4.33) However, demand risks have now slightly edged on the downside, as fears of a surge in Chinese consumption recede.

On the supply side, the production of oil has been constrained by historically low spare capacity and recent supply difficulties in a number of non-OPEC countries, although the recent pledge by OPEC to raise production by 0.5 million bpd in May could provide some respite. The IMF (2005b) projected that spare capacity will remain thin, at under 2 million bpd, through 2005. Over the longer term however, higher oil prices should incentivise capacity building. For instance, Saudi Arabia has recently said that it intends to raise its production capacity by another two million bpd to 12.5 million bpd within the next five years, with 15 million bpd a possibility if demand remains strong. To this end, Saudi Aramco, the kingdom's state-owned oil company, has announced plans to double the number of drilling rigs it operates by the end of the year. However, as highlighted by Greenspan (2005), the status of world refining capacity is another source of concern. Global oil refining capacity currently stands at only slightly above the levels of the 1980s. With limited prospects for building spare capacity in the short term, oil markets will remain volatile.

As a result, several agencies have raised their projections for oil prices. The US Department of Energy (2005) currently projects that WTI prices will remain above US\$50 a barrel for the rest of 2005 and 2006. The IMF also recently raised its forecast of the average oil price for this year to US\$46.50, up sharply from the US\$37.25 projected last September. (IMF 2005a)

**Chart 4.33**  
**Oil Demand and Prices**



Source: Bloomberg, IEA

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### Futures prices suggest some persistence in current high oil prices.

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Expectations of persistently higher oil prices are reflected in the futures markets. In a recent study, the IMF estimated that about 95% of the increase in spot prices since the beginning of 2004 has fed through to end-2006 futures prices, and 60% to end-2010 prices. (IMF 2005b) This suggests that there is a significant “permanent” component in the recent price increases. In line with this finding, WTI futures prices have climbed sharply across the entire forward curve in Q1 this year. (Chart 4.34)

Turning to non-oil commodities, some moderate price increases are expected this year. For example, the prices of food commodities, including rice, coffee and sugar are likely to rise further in the near term, as drought conditions in producer countries such as Thailand and Brazil continue to affect supplies. Metal commodity prices could remain firm on the back of supply tightness. Despite slower demand growth from China, sluggish global production has resulted in dwindling inventory levels.

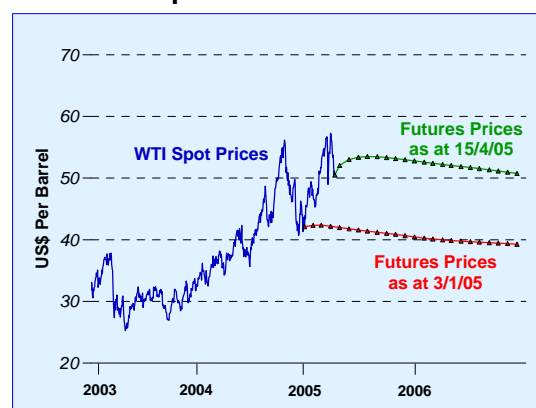
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### Domestic cost components to pick up as well with continued improvement in the labour market.

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The price pressures in the external environment are expected to push up the cost of intermediate inputs in the domestic economy. Indeed, import prices of goods and services are projected to rise by around 3.6% in 2005, compared to 0.3% in 2004. At the same time, domestic cost components have increased alongside the pickup in the economy. Unit labour costs, for example, have turned around to grow by 1.5% in Q4 2004, following five consecutive quarters of decline. The increase in nominal wages (including employers' CPF contributions) of 4.4% in y-o-y terms in Q4 2004, outstripped productivity growth of 3.5%. Going forward, upside pressures to overall labour costs will remain, as the labour market improves and the unemployment rate falls to its natural rate by the end of the year. For 2005 as a whole, growth in unit labour costs is expected to come in at a positive 0.6%, as a result of wage increases and the moderation of cyclical productivity gains. (Table 4.2)

**Chart 4.34**  
WTI Spot and Futures Prices



Source: Bloomberg

**Table 4.2**  
Wages, Productivity  
and Unit Labour Costs

YOY % Growth	2004	2005f
Nominal Earnings*	1.7	2.7
Productivity	6.7	0.3
Unit Labour Costs	-4.0	0.6

\* Inclusive of employers' CPF contributions

**Build-up of cost pressures  
is expected to filter into consumer  
prices, despite increasing competition.**

Against the backdrop of continued expansion in economic activity, the build-up of cost pressures from both the external and domestic fronts is likely to trickle down to domestic consumer prices. Although domestic competition pressures have thus far tempered the pass-through of higher import prices to retail prices, such as for oil, this could weaken somewhat going forward. Notably, with domestic prices of oil-related items already at such historic lows relative to global oil prices, the extent to which local firms and operators can continue to absorb the cost increases may be limited. (Chart 4.35) Indeed, retail petrol pump prices have climbed about 7% since the beginning of the year.

With a more moderate rate of income growth this year, price increases of sentiment-sensitive items are likely to be fairly modest. Moreover, intense competition in the domestic economy is expected to hold down price increases, such as in the communications and air-travel-related industries.

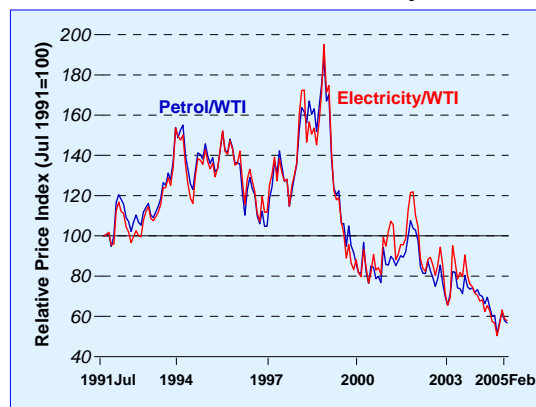
Overall consumer price developments will also depend on the impact of several policy measures. Tobacco taxes were hiked in late February, although this is likely to be offset by the reduction in maid levy in April.

**Headline CPI inflation to come in between 0-1%  
for 2005, and 1-2% next year.**

Taking all these factors into account, CPI inflation under the revised base is expected to be between 0-1% for 2005, before picking up to 1-2% in 2006. (Chart 4.36) The MAS underlying inflation, which excludes accommodation and private road transport costs, is projected to come in higher this year at around 1%, before rising to 1-2% in 2006.

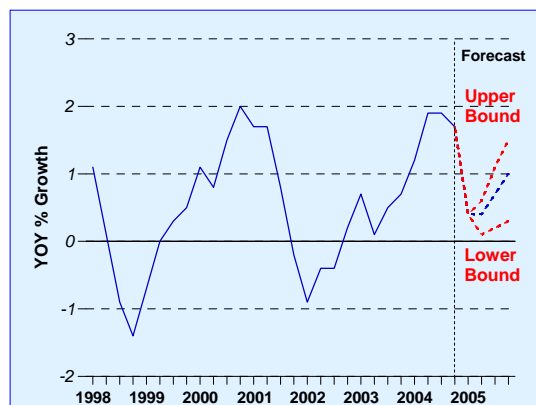
The divergence between the expected headline and underlying inflation numbers in 2005 largely reflects lower private transport costs, with weaker car prices on average compared to a year ago. Nonetheless, these developments are expected to be temporary in nature and likely to dissipate by next year. Car prices could see some mild increase later in the year, following some stabilisation after the LTA's announcement of a smaller COE quota available in the coming months.

**Chart 4.35  
Domestic Prices of Oil-related Items  
Relative to WTI Prices (\$\$ Equivalent)**



\* EPD, MAS internal estimates  
Source: Bloomberg

**Chart 4.36  
Forecast of CPI Inflation, 2005**





Overall, the gradual increase in inflationary pressures in the economy reflects higher commodity prices, rising wages, and increases in services charges. Domestic unit labour costs are also expected to turn positive after declining last year, arising from the moderation of cyclical productivity gains and continued improvement in the labour market. There are upside risks to these sources of inflation, including higher-than-expected oil prices and the possibility of a stronger pass-through of cost pressures into consumer prices.

## 4.5 Assessing the Macroeconomic Policy Mix

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**The macroeconomic policy stance in 2005 remains appropriate given continued growth.**

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The macroeconomic policy mix is expected to remain broadly supportive to growth this year, as the economy comes off its cyclical high and moderates to a more sustainable pace of expansion. On the monetary policy front, MAS recently reaffirmed its policy of a modest and gradual appreciation for the S\$NEER in its MPS of 12 April. The MAS had shifted to this policy stance one year ago at the April 2004 MPS, when indications emerged of a more sustainable recovery in the economy, with signs of incipient inflationary pressures. In the event, the recovery has broadened to include the domestic labour market. On fiscal policy, the government is projecting a surplus for FY2005. The withdrawal of the macroeconomic policy stimulus takes place against expectations of continued growth in the economy along its potential output path. (Chart 4.37)

### Monetary Policy

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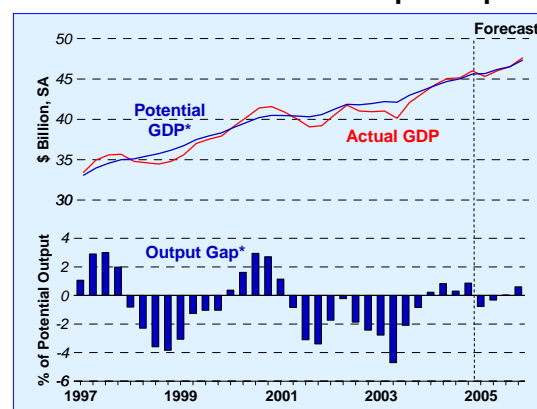
**Overall GDP growth is expected to moderate in 2005, while inflationary pressures remain.**

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*Advance GDP Estimates* released by the Ministry of Trade and Industry (MTI) show that the Singapore economy expanded at a more modest 2.4% in Q1 2005 on a y-o-y basis, as growth momentum slowed.

Going forward, while uncertainties persist, it appears that the balance of risks over the next 6-12 months is tilted in favour of a continued and sustainable rate of

**Chart 4.37**  
Real GDP Levels and Output Gap



\* EPD, MAS internal estimates

expansion in the world economy, albeit at a more modest pace. While the global IT industry will also see slower growth, the downturn is likely to be less severe and shorter in duration compared to the downswing in 2001, due to increased vigilance in inventory management from manufacturers keen to avoid unintended build-ups.

In fact, the outlook for the IT sector has improved somewhat, with firmer evidence that the slowdown in the electronics industry will be relatively shallow and short-lived. Key forward-looking electronics indicators have showed early signs of levelling off, and barring further negative shocks, a strengthening in IT demand is expected in the second half of the year.

Against this backdrop, and taking into account the Q1 performance of the domestic economy, Singapore's GDP growth for 2005 is projected to come in at the lower half of the 3-5% forecast range, with the economy settling to a more sustainable pace of growth.

Concomitantly, the labour market is expected to improve gradually over the year, with the unemployment rate projected to fall from 4.0% last year to about 3.5% this year.<sup>9</sup>

In terms of prospects, the assessment for the economy has not fundamentally changed despite the weak Q1 GDP number. It should be noted that a significant part of the slippage in Q1 2005 was due to the fluctuations in biomedical manufacturing, which in itself is not expected to

have significant spillover effects to the other sectors of the economy or on overall employment conditions. The moderation in services sector activity was also due in part to one-off factors, as tourist arrivals in the early part of the year were affected by the recent tsunami disaster.

On the inflation front, headline CPI inflation is forecast to come in at between 0-1% in 2005, before picking up to 1-2% in 2006. The MAS underlying inflation, which excludes accommodation and private road transport costs, is projected to come in higher this year at around 1%, before rising to 1-2% in 2006. However, we do not rule out further upside risks to inflation. Indeed, inflation in the external environment have risen in recent months, with the CPI inflation in our trading partner countries expected to average around 3% for 2005, after coming in at 2.5% in 2004 and 1.8% in 2003. At the same time, commodity price pressures remain from high oil prices, as the markets grapple with the spectre of resilient oil demand growth amidst thin spare capacity conditions in the energy supply chain.

There is also the risk of a higher degree of pass-through of these cost increases within the domestic economy. Domestic unit labour costs have turned around in Q4 last year, while service providers have begun to pass on some of the pent-up cost increases.

Taking into account these considerations, MAS maintained its policy of a modest and gradual appreciation of the S\$NEER policy band.

<sup>9</sup> Please see the October 2004 issue of the *Macroeconomic Review* for a discussion about the natural rate of unemployment.

## Fiscal Policy

### The government has projected a modest surplus for FY2005.

The FY2005 Budget was announced on 18 Feb 2005, against the backdrop of strong economic growth last year and sustainable growth this year. The Budget continued to focus on efforts to restructure the Singapore economy and enhance its economic competitiveness. At the same time, it recognised the need to build a caring society and provide targeted assistance to the truly needy and vulnerable, especially those having difficulty keeping up with the pace of ongoing restructuring in the economy. The government also continued to maintain fiscal prudence and emphasised the importance of restoring fiscal balance and sustainability over the medium term. An overall budget surplus of \$210 million (0.1% of GDP) is expected for FY2005, following small deficits recorded in three out of the last four years, averaging -1.0% of GDP. (Table 4.3)

### The FY2005 Budget continued to foster a conducive business environment.

The recent Budget included a comprehensive package of measures to foster a conducive business environment and strengthen competencies in the manufacturing and services sectors. In particular, various schemes and tax incentives were introduced to further develop the financial services, logistics and tourism industries. To attract and retain internationally mobile talent,

the top personal income tax rate will be reduced from 22% to 21% in YA2006, and further to 20% in YA2007, with corresponding reductions in the other income brackets. There were also measures aimed at providing support and encouraging enterprise amongst the small and medium-sized enterprises (SMEs). One of the key initiatives was the introduction of a one-year loss carry-back for corporate taxes from YA2006 to help SMEs cope with losses by allowing them to seek a refund of income taxes already paid, subject to a maximum loss of \$100,000.

### A more targeted approach was adopted in assisting the needy.

Even as the government pressed on with its restructuring efforts to ensure that Singapore remained internationally competitive, it also reaffirmed its commitment to help Singaporeans cope with the ongoing structural changes in the economy. While the FY2005 Budget has been hailed as "all-encompassing", with wide-ranging benefits for the different strata of society, the government adopted a more focused and targeted approach towards helping the more needy Singaporeans, particularly the poor, elderly and unemployed, whilst preserving the work ethic and social ethos of personal responsibility and self-reliance.

The size of transfers in FY2005 amounted to \$0.8 billion. Although lower than the average of

**Table 4.3**  
Government Budget

	FY2004 Revised		FY2005 Budgeted	
	\$ billion	% of GDP	\$ billion	% of GDP
Operating Revenue	27.8	15.6	28.9	15.4
Total Expenditure	29.2	16.4	29.7	15.9
Operating Expenditure	20.5	11.5	21.7	11.6
Development Expenditure	8.7	4.9	8.0	4.3
<b>Primary Surplus/Deficit (-)</b>	<b>-1.4</b>	<b>-0.8</b>	<b>-0.8</b>	<b>-0.4</b>
Add: NII Contribution	2.7	1.5	1.9	1.0
Less: Special Transfers	1.7	1.0	0.8	0.4
<b>Budget Surplus/Deficit (-)</b>	<b>-0.4</b>	<b>-0.2</b>	<b>0.2</b>	<b>0.1</b>

Note: Figures may not tally due to rounding.

\$2.3 billion for FY2001-04, more than half of these transfers had comprised across-the-board direct "cash" handouts like the Economic Restructuring Shares and New Singapore Shares, amounting to an aggregate of some \$5 billion over the years. Excluding such direct handouts, indirect transfers in FY2005 were comparable in magnitude. For FY2005, the government has focused on more targeted and indirect forms of assistance, through top-ups to the Community Care Fund (\$254 million), Edusave (\$50 million), Medisave (\$320 million) and Medifund (\$100 million). (Table 4.4)

A more detailed analysis of the nature of special transfers in the FY2005 Budget with that of past budgets revealed a number of other underlying objectives of the government. First, there was a

continuing emphasis on providing for basic healthcare. This had accounted for up to 30% of total indirect transfers in the latest two budgets. Second, there was a special one-off top-up to the Edusave, underpinning the government's belief in investing in the young and the future of Singapore. Third, a new Community Care Fund was set up to deliver assistance programmes to support needy families, children from disadvantaged backgrounds, senior citizens and disabled persons who may need longer-term assistance. With a target size of \$1 billion, it replaces the Community Assistance Fund, and is targeted at taking a more pro-active approach towards identifying and tailoring assistance to those in need. See Box Item E for EPD's analysis of the economic impact of these special transfers.

**Table 4.4**  
**Special Transfers (\$ million)**

	<b>FY2001</b>	<b>FY2002</b>	<b>FY2003</b>	<b>FY2004 (Revised)</b>	<b>FY2005 (Budgeted)</b>
Economic Restructuring and New Singapore Shares	2450	1201	600	900	0
CPF Top-up Scheme	1010	0	3	0	0
Funds for Elderly	504	0	0	0	80
Funds for Healthcare	100	100	0	300	320
Top-up to Edusave Accounts	0	0	0	0	50
Funds for Learning and Skills Development	1000	500	0	500	0
Community Care Fund	200	0	0	0	254
Utility, S&CC and Rental Rebates	0	0	0	9.5	122
<b>Total</b>	<b>5264</b>	<b>1801</b>	<b>603</b>	<b>1710</b>	<b>826</b>

Note:

- (i) Funds for Elderly include top-ups to CPF accounts of senior citizens, Medishield for elderly and Eldercare Fund.
- (ii) Funds for Healthcare include top-ups to Medisave accounts and Medifund.
- (iii) Funds for Learning and Skills Development include top-up to the Lifelong Learning Fund and Skills Development Fund.
- (iv) Top-ups to the Medifund and Lifelong Learning Fund were announced in the FY2005 Budget but were funded from the FY2004 Budget.
- (v) Utility rebates were reclassified from operating expenditure to special transfers from FY2004, while service & conservancy charges and rental rebates were reclassified to special transfers from FY2005.

### Box Item E Assessing the Impact of Budget FY2005 Special Transfers

This box item provides a more detailed assessment of the near-term impact of the government's targeted transfers announced in the FY2005 Budget on private consumption spending and GDP growth into 2005. A number of simplifying assumptions had to be invoked in the analysis. First, the funds earmarked for the elderly, which comprise the top-ups to the CPF retirement accounts of Singaporeans above the age of 50, as well as the top-ups to the Medisave accounts of adult Singaporeans, were excluded from the assessment. These funds are only disbursed for specific retirement and healthcare purposes and are therefore unlikely to have a significant impact on contemporaneous private disposable income. Second, the \$50 million top-up to the Edusave accounts<sup>1/</sup> of all primary and secondary school students was also omitted, given that withdrawals from this fund have historically been very small and disbursed over a period of time so that their short-term cyclical impact on the economy is thus likely to be small. Instead, the main impact of the FY2005 transfers package will come from the remaining components, i.e. the Community Care Fund, utility rebates, as well as service & conservancy charges (S&CC) and rental rebates. We have assumed that the entire amount committed to utility, S&CC and rental rebates would be fully paid out to the public (i.e. \$122 million), while "effective" transfers disbursed from the Community Care Fund are estimated to be \$55 million a year.

The estimate of the impact of these transfers on the economy was derived through a two-stage process. In the first stage, the MMS was used to simulate the effect of a hypothetical \$1 billion transfer on private consumption and GDP growth in its first year, based on the average propensity to consume (APC) of households with varying income levels.<sup>2/</sup> As shown in Table E1, the APC is larger for the lower-income households. Cash transfers given to these households would therefore have a greater impact on the economy, as they are likely to face tighter liquidity constraints, and the transfers would provide immediate support to their income flows. For example, it was estimated that a \$1 billion transfer would boost private consumption growth by 1.9% points and GDP growth by 0.9% points for the lowest 20th percentile of households, compared to 0.3% and 0.2% point respectively for the top 40th percentile of households.

In the second stage, the impact of each specific transfer was calculated by mapping it to the profile of the households/population benefiting from that particular transfer, and applying the estimated boost to consumption and GDP associated with the various income quintiles as indicated in Table E1. For the Community Care Fund for example, we assume that the beneficiaries of the estimated \$55 million disbursed from this Fund would be those belonging to the lowest 20th percentile of the population, given the Fund's objective to provide financial assistance to those who are truly in need. As for the utility, S&CC and rental rebates totaling \$122 million, they were applied to the various income cohorts in a graduated fashion with larger rebates given to households living in smaller HDB flats. For example, households in 1- and 2-room HDB flats will enjoy \$200 in utility rebates while those in 5-room HDB flats will only get \$60 in 2005. We then estimated the amount of rebates benefiting households living in the various types of HDB flats (ranging from 1- to 5-room flats), followed by an assumption on the quintile that the majority of households living in the different flat types would fall under.<sup>3/</sup> The impact from these rebates was estimated individually for each income group by applying the figures in Table E1.

<sup>1/</sup> The money in the Edusave accounts can be used to pay for various extra-educational activities conducted by the school as well as school miscellaneous fees.

<sup>2/</sup> Estimates of the APC were derived using data in the Household Expenditure Survey, Singapore Department of Statistics, 1997/98.

<sup>3/</sup> Estimated from the Household Expenditure Survey, Singapore Department of Statistics, 1997/98.

**Table E1**  
Impact of a \$1 billion Transfer

Household Income Group	Average Propensity to Consume	% Point Increase in the First Year	
		Private Consumption Growth	Real GDP Growth
Lowest 20%	0.881	1.9	0.9
Second Quintile	0.767	1.1	0.5
Third Quintile	0.706	0.6	0.3
Top 40%	0.677	0.3	0.2

Aggregating these impact effects across all households, our estimates show that the (selected) special transfers package in FY2005, amounting to \$178 million or 0.2% of GDP, would boost private consumption growth by 0.22% points, and real GDP growth by 0.11% points in the first year. (Table E2)

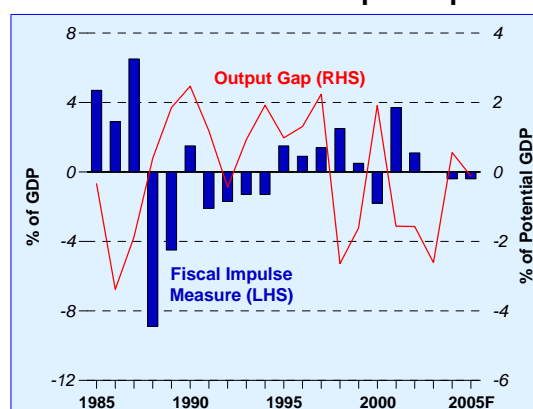
**Table E2**  
Impact of FY2005 Special Transfers

Household Income Group	Distribution of Total "Effective" Transfers (%)	% Point Increase in the First Year	
		Private Consumption Growth	Real GDP Growth
Lowest 20%	48	0.16	0.08
2 <sup>nd</sup> and 3 <sup>rd</sup> Quintiles	40	0.05	0.03
Top 40%	12	0.01	0.00
<b>Total</b>	<b>100</b>	<b>0.22</b>	<b>0.11</b>

**Fiscal policy is expected to be mildly contractionary in 2005.**

Taking into account the FY2005 Budget, the FI measure for CY2005 is estimated to be -0.4% of GDP, suggesting a more contractionary fiscal policy stance compared to 2004. This will represent the second consecutive year of contractionary fiscal policy. (Chart 4.38) Such a policy stance is appropriate, given the smaller degree of slack in the economy as it continues to grow at 3-5% this year, in line with its potential trend growth rate in the medium term. As such, there is no real need for the government to stimulate the economy further through an increase in discretionary expenditure. Nevertheless, in the event of unanticipated economic shocks, the government retains the capacity and flexibility to respond through off-Budget measures, as in past years.

**Chart 4.38**  
FI Measure and Output Gap



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## Special Feature

# Trade and Investment in the ASEAN Region: From Flying Geese to Cross-Border Production Networks

## Introduction

This special feature chapter examines the broad characteristics of intra-ASEAN and East Asian trade over the period 1996-2003, highlighting the main factors underpinning such flows. Using data drawn from UN COMTRADE statistics, it is evident that market forces — particularly the emergence of cross-border production networks (CPNs) — have forged increased trade linkages among the ASEAN countries. Such competitive forces have spurred an increase in intra-industry trade around specific industry clusters including electronics, automobiles and oil.

## An Overview of ASEAN Trade

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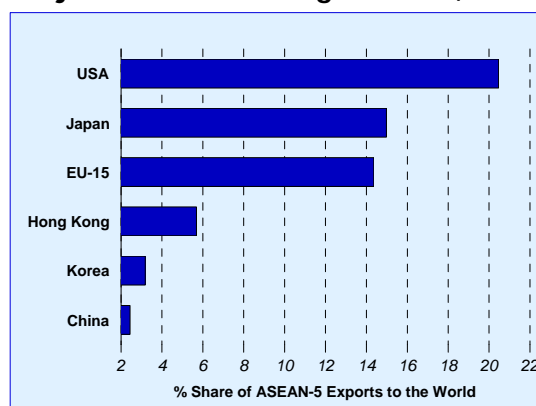
**ASEAN exports have grown robustly with intra-ASEAN exports rising dramatically.**

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Between 1993 and 2003, the ASEAN<sup>1</sup> economies performed strongly on the back of robust exports. Expanding at an annual growth rate of 9.2% over the period, growth of ASEAN exports have outpaced those of most developed and developing economies. The region's share of world trade averaged 6.3% over the past decade and had climbed to a high of 6.7% in 2000 with the global IT boom, before levelling to around 5.9% in recent years.

In terms of key export markets, the US has remained ASEAN's largest export market, accounting for 16% of total exports in 2003, while Japan's share has fallen from over 15% to 12%, and the EU-15 has overtaken

**Chart 1(a)**  
Major ASEAN-5 Trading Partners, 1993



<sup>1</sup> Due to data constraints, ASEAN in this study refers to the ASEAN-5: Singapore, Malaysia, Indonesia, Thailand and the Philippines. It is also not possible to harmonise the periods for point-to-point comparisons of the trade data across the study, as the UN COMTRADE data is incomplete for some years.



Japan to become the second largest market for the region's exports, taking a share of about 14% in 2003. (Charts 1(a) and 1(b))

Nevertheless, from 1998 onwards, the proportion of ASEAN's exports headed for the developed countries has been on a gradual decline while that to the Northeast Asian economies<sup>2</sup> has trended up, with China becoming an increasingly important export destination. (Chart 2)

Trade within the region has also risen dramatically. In value terms, intra-ASEAN trade more than doubled between 1993 and 2003, although as a share of total ASEAN exports, it has remained stable at around 20% over this period as the region's exports have gained an increasing foothold in the global marketplace. The Asian crisis and the collapse of the IT bubble in 2001 have had a dampening effect on intra-ASEAN trade. Intra-ASEAN exports grew by an average of just 4% per annum between 1996 and 2003, compared to 23% per annum from 1990 to 1995.

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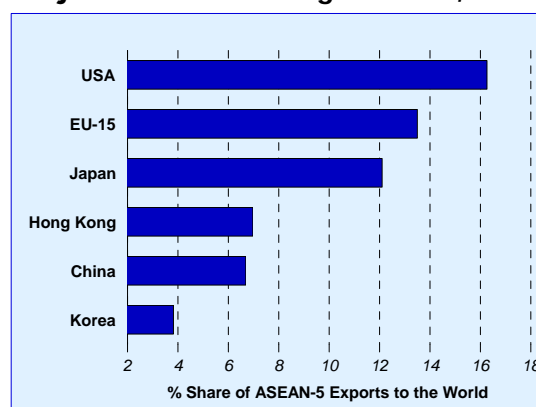
**Intra-regional trade has been dominated  
by electronics.**

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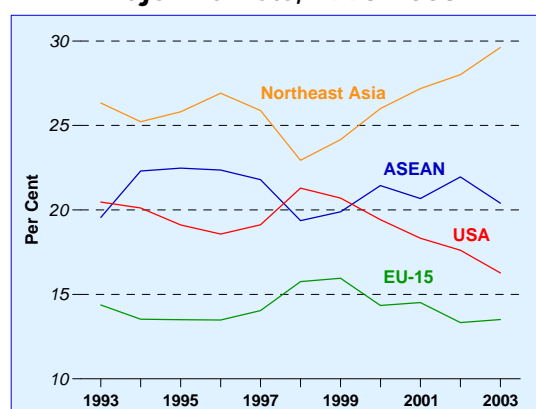
The overwhelming bulk of intra-ASEAN exports have been concentrated in three broad industry clusters: electronics, automobiles, and oil & petrochemicals. Together these accounted for over 50% of total intra-ASEAN exports in 2003, with electronics taking the largest share. (Table 1) At the same time, these industries received more than half of total FDI inflows into ASEAN between 1996 and 2003.

Trade in electronic goods has clearly been the key engine of growth for intra-ASEAN trade. Whilst electronics trade comprises only slightly more than one-third of total intra-ASEAN exports, it accounted for about two-thirds of the growth of such exports over the period 1996-2003. Moreover, countries with deep and complementary relationships in production, for example Malaysia and Singapore, are characterised by extensive trade flows in intermediate or component IT products.

**Chart 1(b)**  
**Major ASEAN-5 Trading Partners, 2003**



**Chart 2**  
**Proportion of ASEAN Exports to Major Markets, 1993-2003**



<sup>2</sup> In this study, Northeast Asia refers to China, Hong Kong, Japan and Korea.

**Table 1**  
**Intra-ASEAN Exports and FDI Inflows by Commodity**

Commodity	Proportion of FDI Inflows* (1996-2003, %)	Proportion of Total Intra-ASEAN Exports (2003, %)	Growth in Intra-ASEAN Exports (Average Annual, 1996-2003, %)	Average % Point Contribution to Growth (1996-2003)
Food	3.4	4.1	4.4	0.1
Beverages & Tobacco	0.2	0.9	12.1	0.0
Crude Materials	13.3	1.9	3.1	0.1
Mineral Fuels	20.9	9.0	8.7	0.4
Animal & Vegetable Oil	0.0	1.0	3.4	0.0
Chemicals**	17.0	8.0	7.1	0.3
Manufactured Goods	10.6	7.9	0.3	0.3
Machinery & Transport Equipment***	32.6	59.9	5.1	2.6
Electronics	24.2	41.0	6.5	2.6
Miscellaneous Manufactured Articles	1.9	5.7	0.7	0.2
Others	0.2	1.7	8.1	0.0
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>4.0</b>	<b>4.0</b>

\* Source: *ASEAN Statistical Yearbook*, 2004

\*\* Intra-regional trade in chemicals is dominated by petrochemicals.

\*\*\* The desegregation of automobiles from Machinery & Transport Equipment is unavailable.

In 1995, bilateral trade between Malaysia and Singapore accounted for more than half of total intra-ASEAN trade. (Table 2(a)) In 2003 it had fallen to 42%, but the share of electronics in bilateral trade between these two countries rose from 42% to 48% over the same period. (Table 2(b))

**Table 2(a)**  
**Proportion of Total Intra-ASEAN Trade, 1995, %**

Origin	Destination					
	Indonesia	Malaysia	Philippines	Singapore	Thailand	ASEAN-5
<b>Indonesia</b>	-	1.4	0.8	5.4	1.0	<b>8.6</b>
<b>Malaysia</b>	1.4	-	1.0	21.4	4.1	<b>27.9</b>
<b>Philippines</b>	0.2	0.5	-	1.4	1.1	<b>3.2</b>
<b>Singapore<sup>3</sup></b>	-	32.4	2.8	-	9.8	<b>44.9</b>
<b>Thailand</b>	1.2	2.2	0.6	11.3	-	<b>15.3</b>
<b>ASEAN-5</b>	<b>2.7</b>	<b>36.5</b>	<b>5.2</b>	<b>39.6</b>	<b>16.0</b>	<b>100.0</b>

<sup>3</sup> Published data on Singapore exports to Indonesia are only available after 2003.

**Table 2(b)**  
**Proportion of Total Intra-ASEAN Trade, 2003, %**

Origin	Destination					
	Indonesia	Malaysia	Philippines	Singapore	Thailand	ASEAN-5
Indonesia	-	2.5	1.0	5.8	1.5	<b>10.8</b>
Malaysia	2.3	-	1.5	17.6	4.9	<b>26.4</b>
Philippines	0.3	2.6	-	2.6	1.3	<b>6.9</b>
Singapore	7.1	24.3	3.5	-	6.6	<b>41.5</b>
Thailand	2.4	4.1	1.7	6.3	-	<b>14.6</b>
ASEAN-5	<b>12.2</b>	<b>33.6</b>	<b>7.7</b>	<b>32.2</b>	<b>14.3</b>	<b>100.0</b>

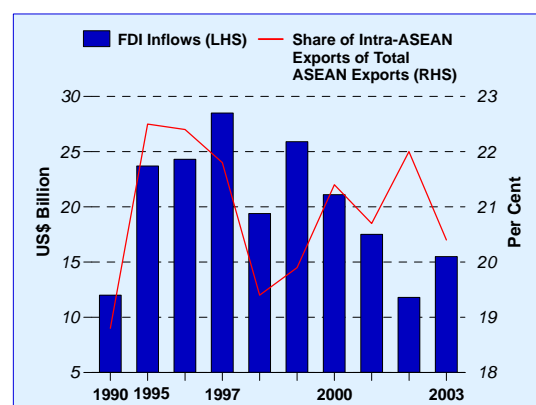
**This reflected complementarities in production across countries, underpinned by FDI flows.**

Although intra-ASEAN FDI (i.e. investment from ASEAN countries) has been quite low, amounting to about 13% of total FDI inflows between 1995 and 2003, the boom in intra-ASEAN trade was accompanied, if not preceded, by a marked increase in inward FDI into the region in the early 1990s (Chart 3).<sup>4</sup> This has, in turn, generated a high degree of intra-firm trade in intermediate products within the region.

This apparent interdependence between FDI and trade flows has stimulated the development of regional integration models. The “Flying Geese” or “Product Cycle” model, popular in the 1970s and 1980s, explained the shift in the location of production from one country to another in terms of changing competitiveness as industries mature (Akamatsu 1961; Vernon 1966, 1979). As the returns to capital fell when a product or industry matures and competition intensifies, producers were forced to relocate their factories to lower cost countries in order to preserve profit margins. First tier developed countries, such as Japan, would “pass on” the technology – and end-market – to countries in the lower tiers. The Asian NIEs (Korea, Taiwan, Hong Kong and Singapore) were in the second tier and the first to benefit from this outflow of FDI from Japan in the late-1980s and early 1990s. As costs rose in the NIEs, FDI began to flow into the other emerging Asian countries that formed the third tier, first into ASEAN countries, and more recently, into China.

In recent years, the “Flying Geese” model has given way to one where investments are made according to the

**Chart 3**  
**Intra-ASEAN Trade and Stock of Inward FDI**



Source: World Investment Report, UN COMTRADE Database

<sup>4</sup> A number of empirical studies have pointed to the complementary relationship between home country trade and FDI through overseas affiliates. See, for example, the work on Japan by Kawai (2004).

comparative advantage of each country within a CPN.<sup>5</sup> This production complementarity across countries follows from the shift in organisational focus from the entity of the firm to the “contractual network of firms tied together by mutual long-term interest” (Stopford 1994). The increasing trend towards outsourcing core manufacturing functions not just to subsidiaries based in foreign countries, but also to third party contractual suppliers indigenous to those countries, is one indicator of these networks. The deepening of contractual networks has led to greater integration of production chains across countries. In sectors such as electronics and automobiles, in particular, firms are becoming linked by a complex architecture of networks that extend outside the firm to span across the entire value-chain: from logistics to components and final products.

The establishment of production networks in the region has, in turn, significantly boosted trade flows in intermediate parts and components, and led to a deepening of the trade links between ASEAN countries. In the past, these products were used as inputs for further assembly into final products, which were mainly exported out of the ASEAN region. Recently, however, intra-regional trade in components<sup>6</sup> has been growing in importance as East Asian economies position themselves in the various stages of the production network to capitalise on their comparative advantages (Ng and Yeats 2003).<sup>7</sup>

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**Intermediate electronics products account for most of the trade in electronics, which is dominated by Malaysia and Singapore.**

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From trade data at the 5-digit Standard International Trade Classification level, there is evidence of an extensive production network in intermediate electronics products<sup>8</sup> distributed across a variety of independent suppliers throughout the region, accounting for 92% of trade in electronics within ASEAN in 2003, compared to

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<sup>5</sup> A firm's CPN refers to the inter- and intra-firm relationships through which the firm organises the entire range of its business activities: from research and development, product definition and design, to supply of inputs, manufacturing, distribution, and support services. For more details, see Borrus et al. (2000).

<sup>6</sup> “Components” as defined in Ng and Yeats (2003) refers to items in UN COMTRADE data that are preceded by the term “Parts of...”.

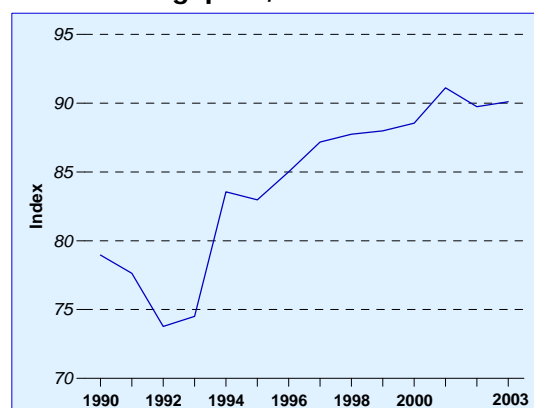
<sup>7</sup> Asian global exports of components rose more than fivefold between 1984 and 1996 compared to only a threefold increase in overall exports.

<sup>8</sup> EPD, MAS' definition. Refers to parts and components needed for the production of PCs and consumer electronics.

around 85-90% in the 1990s. In comparison, the low proportion of final electronics products<sup>9</sup> suggests that final demand largely continues to reside outside the ASEAN region.

As noted earlier, bilateral trade between Malaysia and Singapore dominates intra-ASEAN exports in electronics. The high level of intra-industry trade between these two countries can be discerned from the Grubel-Lloyd index.<sup>10</sup> Although the index declined in the early 1990s, it has been on an upward path ever since, rising from 75 in 1993 to a record high of 91 in 2001, largely driven by items within SITC-7, of which electronics products loom large. (Chart 4) In 2003, Singapore was Malaysia's largest export market within ASEAN for intermediate electronics products, while Malaysia was also Singapore's top export market in ASEAN. Similar patterns can also be observed for trade in final electronics products. (Tables 3(a) and 3(b))

**Chart 4**  
Grubel-Lloyd Index for Malaysia and Singapore, 1990-2003



**Table 3(a)**  
Proportion of Intra-ASEAN Trade in Intermediate Electronics Products, 2003, %

Origin	Destination					
	Indonesia	Malaysia	Philippines	Singapore	Thailand	ASEAN-5
Indonesia	-	0.9	0.1	3.8	0.2	4.9
Malaysia	0.7	-	1.5	22.7	4.7	29.6
Philippines	0.2	6.2	-	5.7	1.8	14.0
Singapore	-	30.8	3.6	-	6.6	40.9
Thailand	0.3	1.9	1.3	7.1	-	10.6
ASEAN-5	1.2	39.8	6.5	39.3	13.2	100.0

**Table 3(b)**  
Proportion of Intra-ASEAN Trade in Final Electronics Products, 2003, %

Origin	Destination					
	Indonesia	Malaysia	Philippines	Singapore	Thailand	ASEAN-5
Indonesia	-	0.8	0.1	10.9	0.6	12.4
Malaysia	1.0	-	0.7	33.7	2.2	37.6
Philippines	0.0	0.4	-	1.9	2.0	4.3
Singapore	-	22.9	2.7	-	8.2	33.9
Thailand	0.1	7.3	0.1	4.3	-	11.7
ASEAN-5	1.1	31.4	3.7	50.8	13.1	100.0

<sup>9</sup> EPD, MAS' definition. Refers to end-products such as PCs and consumer electronics.

<sup>10</sup> The Grubel-Lloyd index measures the proportion of total trade accounted for by "overlapping" exports and imports, i.e. the share of intra-industry trade in total trade. It takes a value of zero when intra-industry trade does not exist, and a value of 100 when there is perfect intra-industry trade. (Please refer to the *OECD Economic Outlook* (2002), No. 71, Chapter VI, Box VI.1, for the mathematical formula and explanation of the Grubel-Lloyd index.)

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**A pattern of regional specialisation in electronics  
may be beginning to appear.**

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Within ASEAN, a pattern of regional specialisation may be beginning to appear, with Singapore, Thailand and the Philippines specialising more on intermediate electronics products than final products, while the reverse is true for Indonesia and Malaysia.

Table 4 shows the Revealed Comparative Advantage (RCA) for ASEAN countries in final and intermediate electronics goods over the period 1998-2003.<sup>11</sup> The pattern of regional specialisation is more clear-cut in final products, with Indonesia and Malaysia showing clear specialisation in this area (RCA well above unity). However, the results for intermediate products are less conclusive, with Singapore, Thailand and the Philippines recording readings of slightly more than unity.

**Table 4**  
**Revealed Comparative Advantage Index for ASEAN Economies, Average (1998-2003)**

Countries	Final Electronics	Intermediate Electronics
Indonesia	2.77	0.88
Malaysia	1.39	0.97
Philippines	0.19	1.06
Singapore	0.83	1.01 <sup>12</sup>
Thailand	0.62	1.03
ASEAN-5	1.00	1.00

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**Thailand is at the centre of a regional  
production network in automobiles.**

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A production network in automobiles has also emerged in recent years, with Thailand at its centre. This is partly a consequence of an earlier surge in FDI from Japan and other developed economies. Both Honda Motor Company and Toyota have based a significant part of their production facilities in Thailand. Trade in this industry can be disaggregated into fully assembled automobiles and automobile parts. (Tables 5(a) and 5(b)) Thailand took the top spot for automobile exports in 2003, accounting for 87% of intra-ASEAN exports, most of which were for final consumption in Indonesia and Singapore.<sup>13</sup>

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<sup>11</sup> This compares the share of a given product in a nation's exports to the share of that product in world exports. For the purpose of this study, we have taken the universe of "exports" to be intra-ASEAN exports. In other words, the adjusted RCA measures the share of a given product in a country's exports to the region relative to the share of the same product in intra-ASEAN exports.

<sup>12</sup> The estimated RCA for Singapore shows an increase towards the end of the sample period.

<sup>13</sup> Some of the car exports to Singapore are re-exported to other markets outside ASEAN.

Nevertheless, while Thailand dominates the export of completed automobiles, there is a greater dispersion in the manufacture of automobile parts in the region. About one third of exports of automobile parts manufactured in ASEAN were bound for Thailand, mostly supplied by the Philippines. At the same time, Thailand is itself a major producer of auto parts, exporting mostly to Malaysia and Indonesia.

**Table 5(a)**  
**Proportion of Intra-ASEAN Trade in Automobiles, 2003, %**

Origin	Destination					
	Indonesia	Malaysia	Philippines	Singapore	Thailand	ASEAN-5
Indonesia	-	0.1	1.6	0.8	0.1	<b>2.6</b>
Malaysia	2.7	-	0.0	1.9	0.1	<b>4.7</b>
Philippines	0.0	0.0	-	0.1	0.3	<b>0.4</b>
Singapore	-	4.2	0.5	-	0.9	<b>5.6</b>
Thailand	33.9	1.2	20.9	30.8	-	<b>86.8</b>
ASEAN-5	<b>36.5</b>	<b>5.5</b>	<b>23.0</b>	<b>33.6</b>	<b>1.4</b>	<b>100.0</b>

**Table 5(b)**  
**Proportion of Intra-ASEAN Trade in Automobile Parts, 2003, %**

Origin	Destination					
	Indonesia	Malaysia	Philippines	Singapore	Thailand	ASEAN-5
Indonesia	-	4.3	5.0	6.1	5.2	<b>20.7</b>
Malaysia	1.8	-	0.6	2.1	4.4	<b>8.9</b>
Philippines	2.6	2.0	-	1.0	17.0	<b>22.7</b>
Singapore	-	10.2	2.4	-	6.8	<b>19.4</b>
Thailand	10.1	12.3	4.9	1.0	-	<b>28.3</b>
ASEAN-5	<b>14.6</b>	<b>28.9</b>	<b>13.0</b>	<b>10.2</b>	<b>33.4</b>	<b>100.0</b>

**There is also an intricate regional oil production network emerging in ASEAN.**

ASEAN as a whole exported a total value of US\$10.5 billion in crude oil in 2003, accounting for 4.1% of world crude oil exports. At the midstream (refined oil & hydrocarbons) and downstream (polymers) levels, ASEAN's 25 refineries together formed 4.7% of the world's oil distillation volume and 3.2% of cracking and reforming volume as at the beginning of 2003.<sup>14</sup>

The pattern of intra-ASEAN trade in oil products again reveals the intricacies of a regional oil production network. (Chart 5) Thailand and the Philippines, with limited oil resources and heavy energy consumption demands, are highly dependent on oil imports.

**Chart 5**  
**ASEAN-5 Net Oil Exports as % of GDP, 2003**



Source: Compiled from various countries' reported exports and GDP

<sup>14</sup> Energy Information Administration, *International Energy Annual*, 2002.

Singapore, a major oil refining center and entrepôt hub in the region, imports crude oil and re-exports midstream and downstream petrochemical products. Indonesia with its plentiful crude oil resources, lacks sufficient infrastructure to refine its oil to meet domestic demand, and hence remains a net importer of oil. Malaysia, with both oil resources and the refining capacity, is the sole net exporter of oil products in ASEAN.

In terms of the production chain, Indonesia and Malaysia together accounted for over 92% of total upstream intra-ASEAN oil exports in 2003. (Table 6(a)) Singapore figures strongly at the midstream level, with just under 50% of midstream intra-ASEAN oil exports in 2003, while Malaysia accounts for 26%. (Table 6(b)) Bilateral trade between Malaysia and Singapore at the midstream level also dominates total intra-ASEAN trade, accounting for 59% of total trade in midstream oil products. Finally, at the downstream level, Singapore exports 54% of intra-ASEAN oil products, with Malaysia and Thailand the other major players. (Table 6(c))

**Table 6(a)**  
**Proportion of Intra-ASEAN Trade in Upstream Oil Products, 2003, %**

Origin	Destination					
	Indonesia	Malaysia	Philippines	Singapore	Thailand	ASEAN-5
<b>Indonesia</b>	-	1.4	1.0	15.5	14.0	<b>31.8</b>
<b>Malaysia</b>	13.9	-	6.8	5.0	34.7	<b>60.4</b>
<b>Philippines</b>	0.0	0.0	-	0.1	0.0	<b>0.1</b>
<b>Singapore</b>	-	0.0	0.0	-	0.0	<b>0.0</b>
<b>Thailand</b>	6.8	0.0	0.0	0.9	-	<b>7.6</b>
<b>ASEAN-5</b>	<b>20.7</b>	<b>1.4</b>	<b>7.8</b>	<b>21.5</b>	<b>48.7</b>	<b>100.0</b>

**Table 6(b)**  
**Proportion of Intra-ASEAN Trade in Midstream Oil Products, 2003, %**

Origin	Destination					
	Indonesia	Malaysia	Philippines	Singapore	Thailand	ASEAN-5
<b>Indonesia</b>	-	1.1	0.2	4.7	0.7	<b>6.7</b>
<b>Malaysia</b>	3.3	-	1.6	19.9	1.0	<b>25.8</b>
<b>Philippines</b>	0.1	0.2	-	2.2	0.1	<b>2.6</b>
<b>Singapore</b>	-	38.8	6.2	-	4.7	<b>49.7</b>
<b>Thailand</b>	3.6	2.3	0.8	8.4	-	<b>15.2</b>
<b>ASEAN-5</b>	<b>7.0</b>	<b>42.4</b>	<b>8.8</b>	<b>35.2</b>	<b>6.5</b>	<b>100.0</b>



**Table 6(c)**  
**Proportion of Intra-ASEAN Trade in Downstream Oil Products, 2003, %**

Origin	Destination					
	Indonesia	Malaysia	Philippines	Singapore	Thailand	ASEAN-5
Indonesia	-	2.8	0.6	2.1	0.6	<b>6.1</b>
Malaysia	5.4	-	2.4	6.4	5.3	<b>19.4</b>
Philippines	0.2	0.3	-	0.2	0.0	<b>0.7</b>
Singapore	-	34.0	6.7	-	12.9	<b>53.6</b>
Thailand	5.4	7.6	3.4	3.8	-	<b>20.2</b>
ASEAN-5	<b>11.0</b>	<b>44.7</b>	<b>13.1</b>	<b>12.5</b>	<b>18.8</b>	<b>100.0</b>

The RCA index confirms this tiered production specialisation, with Indonesia and Malaysia both having an RCA in upstream oil products exceeding unity, whilst Singapore has an advantage in the production of mid and downstream oil products. (Table 7)

**Table 7**  
**Revealed Comparative Advantage Index for ASEAN Economies in Oil Products, Average (1998-2003)**

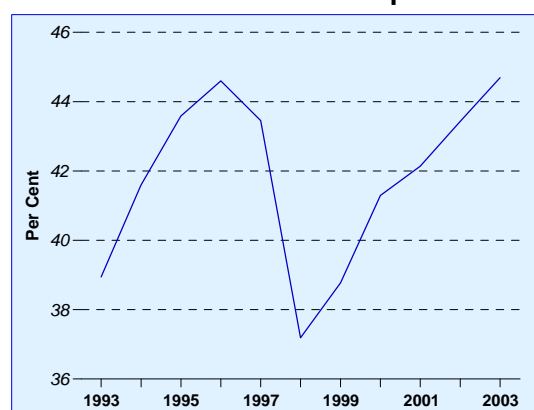
Countries	Downstream	Midstream	Upstream
Indonesia	0.59	0.53	2.76
Malaysia	0.59	0.83	1.80
Philippines	0.70	1.37	0.09
Singapore	1.39	1.24	0.00
Thailand	1.24	1.12	0.47
ASEAN-5	1.00	1.00	1.00

## ASEAN: Jumping onto the China Bandwagon?

**The inclusion of China and other Northeast Asian countries boosts intra-regional trade significantly.**

The inclusion of China, Hong Kong, Japan and Korea in the trade matrix has a significant impact on trade patterns in the region. Intra-East Asian exports as a percentage of total East Asian exports is much higher at 45% (compared to 20% for ASEAN alone), and has been on a steady increase since the Asian crisis.<sup>15</sup> (Chart 6) The increased trade flows within this expanded grouping has largely reflected strong growth in trade within the Northeast Asian (NEA) countries and, to a lesser extent, higher exports from ASEAN to the NEA countries. (Table 8(a)) Being smaller economies, the scale of intra-ASEAN trade clearly pales in comparison to intra-NEA trade. The

**Chart 6**  
**Proportion of Intra-East Asian Exports to Total East Asian Exports**



<sup>15</sup> East Asia refers to the ASEAN-5 economies, as well as the Northeast Asian economies.

former accounts for only 11% of total intra-East Asian exports, compared to 58% for the NEA economies. (Table 8(b)) Further, within the East Asian subset, China and Hong Kong have been the main thrust behind the increased trade flows, accounting for 39% of intra-East Asian exports in 2003.

**Table 8**  
**Intra-East Asian Exports**

(a) Average Annual Growth, 1999-2003, %			(b) Share of Total Intra-East Asian Exports, 2003, %		
Origin	Destination		Origin	Destination	
	NEA	ASEAN		NEA	ASEAN
NEA	14.9	9.3	NEA	58.3	14.6
ASEAN	13.8	8.8	ASEAN	16.1	11.1

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**China has provided important support to ASEAN exports.**

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ASEAN's exports to China and Hong Kong grew at an average of 16% per annum over the period 1993 to 2003. Combined, China and Hong Kong represent the second largest market for ASEAN's exports in 2003. Between 2001 and 2003, ASEAN's exports to China and Hong Kong grew by an average of 20% a year, making up for some of the slack in the G3 markets. Nevertheless, some of these exports are further processed in China and are ultimately destined for final consumption in the G3 economies, especially the US. China alone still absorbs less than 10% of ASEAN's exports, compared to almost 30% for the US and EU combined.

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**ASEAN trade with China is underpinned by industry-specific production networks.**

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The boom in ASEAN exports to China and Hong Kong can be attributed to the shifting dynamics of manufacturing within the East Asian region, with China becoming a manufacturing powerhouse for technology-intensive goods. Machinery & transport equipment (mainly electronics) was the largest contributor to growth between 2001 and 2003, despite the severe correction in the global IT industry. (Table 9)

**Table 9**  
**ASEAN Exports to China and Hong Kong by Commodity**

Commodity	Proportion of ASEAN Exports to China and Hong Kong (2003, %)	Growth in ASEAN Exports to China and Hong Kong (Average Annual, 2001-2003, %)	Average % Point Contribution to Growth (2001-2003)
Food	2.4	27.9	0.1
Beverages & Tobacco	0.2	-11.5	0.0
Crude Materials	4.5	29.6	0.9
Mineral Fuels	11.6	12.5	1.5
Animal & Vegetable Oil	2.9	42.8	1.0
Chemicals	10.3	21.2	2.1
Manufactured Goods	7.4	10.7	0.5
Machinery & Transport Equipment*	54.6	22.7	12.5
Miscellaneous Manufactured Articles	4.5	16.5	0.8
Others	1.5	34.6	0.3
<b>Total</b>	<b>100.0</b>	<b>19.5</b>	<b>19.5</b>

\* Intra-regional trade in chemicals is dominated by petrochemicals.

\* The desegregation of automobiles and electronics from Machinery & Transport Equipment is unavailable.

These industry-based trade linkages in East Asia are underscored by the accompanying increase in the Grubel Lloyd index, which rose from 51 in 1998 to 59 in 2001 (MAS 2003), suggesting that almost 60% of East Asian trade is now intra-industry trade.

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**China has emerged as the driver of the electronics supply chain in the region.**

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ASEAN's exports of electronic goods to China<sup>16</sup> recorded strong growth between 2001 and 2003. (Table 10(a)) In particular, ASEAN's exports of intermediate electronics products grew by an average of 30% over the period 2001 to 2003, compared to a 3% contraction in trade in the same products within the ASEAN region. (Table 10(b))

**Table 10(a)**  
**Average Annual Growth in Intra-East Asian Trade in Overall Electronics Products, 2001-2003, %**

Origin	Destination			
	China	Japan	Korea	ASEAN
<b>China</b>	-	24.3	33.0	27.9
<b>Japan</b>	33.3	-	4.8	-8.2
<b>Korea</b>	47.6	-2.1	-	-2.1
<b>ASEAN</b>	29.4	0.5	10.2	-2.2

<sup>16</sup> Hong Kong is excluded from the following section, as the intention was to identify the emergence of China's direct role in the regional CPNs.

**Table 10(b)**  
**Average Annual Growth in Intra-East Asian Trade in**  
**Intermediate Electronics Products, 2001-2003, %**

Origin	Destination			
	China	Japan	Korea	ASEAN
China	-	22.6	28.3	30.2
Japan	34.2	-	5.2	-8.8
Korea	41.4	-2.1	-	-4.3
ASEAN	30.0	0.7	10.8	-2.7

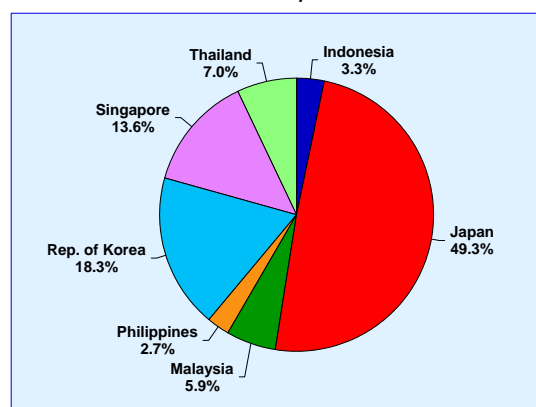
**Korea and Japan are important members of the**  
**China-driven electronics network.**

Bilateral trade in electronics between China and Korea, and China and Japan, have expanded at double-digit rates in recent years. (Table 10(a)) As a result, China became the top export market for Japan (within East Asia) in terms of intermediate electronics products in 2003, and Japan was in turn the top market for China's exports of final electronics products. (Charts 7(a) and 7(b)) Similar trade patterns are also observed between Korea and China.

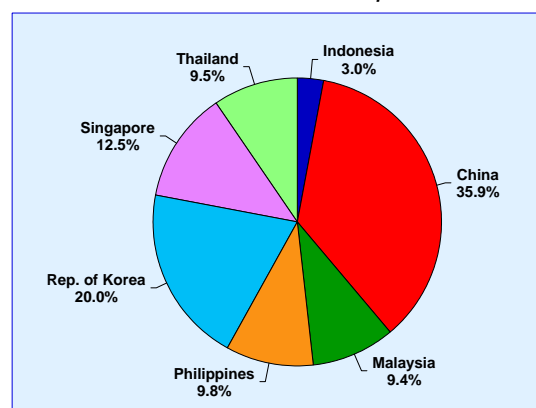
**China is emerging as an important**  
**source of end demand.**

Although ASEAN still depends heavily on G3 demand, China is now an important source of end demand for the region. MAS (2003) suggests that some two-thirds of China's imports from East Asia are destined for domestic consumption. Over the longer term, as the Chinese economy grows, the strength and importance of its domestic demand is expected to increase. A good example is the oil and petrochemical industry. Given its growing electronics-centric manufacturing, China has absorbed an increasing share of ASEAN's exports of downstream oil products. (Chart 8) This provides an avenue of opportunity for ASEAN, which has a comparative advantage in exporting midstream and downstream oil products. (Table 11) In comparison, China's advantage lies in the upstream segment. Nevertheless, with China's rapid industrialisation continuing to feed through the regional network, all producers are set to benefit.

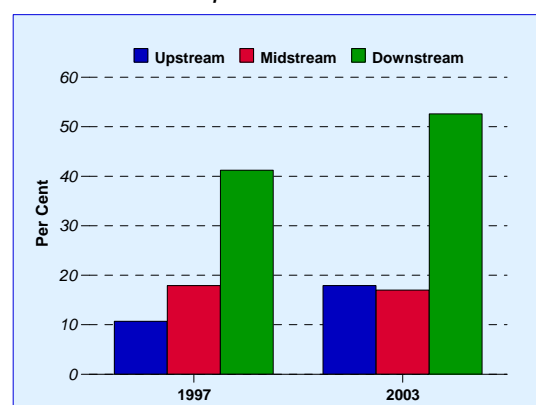
**Chart 7(a)**  
**China's Exports of Final Electronics**  
**Products, 2003**



**Chart 7(b)**  
**Japan's Exports of Intermediate**  
**Electronics Products, 2003**



**Chart 8**  
Share of Intra-East Asian Oil Exports to China, 1997 and 2003



**Table 11**  
Oil RCAs for ASEAN and the NEA economies, Average (1998-2003)

	Downstream	Midstream	Upstream
China	0.27	0.78	2.49
Japan	2.83	0.71	0.01
Korea	1.58	1.09	0.00
ASEAN-5	0.51	1.04	1.41
Total East Asia	1.00	1.00	1.00

## Sum-up

Intra-ASEAN trade has grown over the past few decades, benefiting in particular from intra-regional trade linkages in the electronics, automobile and oil industries. Inclusive of the NEA countries, intra-regional trade increases significantly, as a result of strengthening trade and production links between China, Hong Kong, Korea and Japan.

The advent of CPNs plays a crucial role in anchoring trade within the ASEAN countries, although final demand (at least for electronics products) remains largely outside of ASEAN. These networks exploit countries' specialisations within industries, weaving together greater economic interdependence between countries with complementary capabilities.

Going forward, China will be a key factor when considering trade dynamics in ASEAN. The rapid growth of manufacturing capacity in China is likely to influence the development of the production networks in ASEAN as they adjust to the challenges and opportunities posed by the emergence of China. Two promising areas of growth are the export of intermediate electronics products and

downstream oil products (polymers) from ASEAN to China. As China modernises, ASEAN producers stand to benefit from the country's growth by tapping into the production network as complementary producers rather than competitors. At the same time, resource rich ASEAN countries could export primary commodities to the booming Chinese market.

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# Statistical Appendix

**Table 1:** Real GDP Growth by Sector

**Table 2:** Real GDP Growth by Expenditure

**Table 3:** Consumer Price Index

**Table 4:** Labour Market

**Table 5:** External Trade

**Table 6:** Non-oil Domestic Exports by Selected Countries

**Table 7:** Electronics Leading Index

**Table 8:** Balance of Payments – Current Account

**Table 9:** Balance of Payments – Capital & Financial Accounts

**Table 10:** Exchange Rates

**Table 11:** Monetary

**Table 12:** Domestic Liquidity Indicator

**Table 13:** Fiscal

**TABLE 1: REAL GDP GROWTH by sector**

Period	Total	Manu- facturing	Financial & Business Services			Con- struction	Commerce			Transport & Communi- cations	Total	Manu- facturing	Financial & Business Services			Con- struction	Commerce			Transport & Communi- cations
			Total	Financial Services	Business Services		Total	Wholesale & Retail Trade	Hotels & Rest- aurants				Total	Financial Services	Business Services		Total	Wholesale & Retail Trade	Hotels & Rest- aurants	
Year-on-Year % Change											Seasonally-adjusted Quarter-on-Quarter Annualised % Change									
2002	3.2	7.8	0.8	-4.1	4.7	-12.1	1.9	2.6	-1.8	6.2										
2003	1.4	2.7	1.0	4.3	-1.5	-9.5	4.2	6.7	-9.9	-1.8										
2004	8.4	13.9	3.9	6.0	2.2	-6.5	14.3	14.6	12.4	9.1										
2003 Q1	1.3	5.7	-3.7	-6.8	-1.3	-16.5	3.9	5.5	-4.6	1.3	0.8	5.1	-9.3	-10.6	-8.3	-20.7	6.1	9.4	-11.3	4.7
Q2	-3.8	-6.0	0.6	5.8	-3.2	-9.4	-3.9	0.6	-29.0	-10.3	-8.4	-11.5	14.4	42.5	-3.1	8.5	-14.0	-1.1	-67.1	-34.1
Q3	2.4	3.1	2.9	8.0	-0.8	-6.6	6.2	8.5	-6.2	-1.6	20.7	32.2	4.2	1.3	6.6	-0.4	33.8	20.3	182.6	42.7
Q4	5.6	8.7	4.1	10.8	-0.7	-5.1	10.2	12.1	-0.5	3.5	11.1	13.5	8.6	16.8	2.5	-5.7	20.8	21.5	16.6	15.9
2004 Q1	7.9	10.2	8.3	16.7	2.2	1.0	12.3	13.7	3.5	3.7	10.1	11.1	6.1	9.9	3.0	1.7	14.2	15.5	6.4	6.0
Q2	12.3	20.1	4.0	5.2	3.0	-6.4	21.4	19.0	40.3	18.4	7.5	24.2	-2.6	-5.7	-0.1	-19.5	17.7	18.7	11.2	12.4
Q3	7.2	11.2	2.0	2.9	1.4	-11.4	14.7	15.6	9.2	9.0	0.7	-1.6	-3.3	-7.4	0.1	-20.1	6.7	7.2	3.5	2.1
Q4	6.5	14.1	1.5	0.4	2.3	-8.4	9.9	10.7	4.6	6.3	7.9	25.3	6.2	5.9	6.5	7.1	1.6	2.4	-3.5	4.5

Source: Singapore Department of Statistics

**TABLE 2: REAL GDP GROWTH by expenditure**

Period	Total Demand	Domestic Demand									External Demand	Year-on-Year % Change
		Total	Consumption			Gross Fixed Capital Formation			Total			
			Total	Private	Public	Total	Private	Public				
2002	3.0	0.2	3.6	3.0	5.5	-10.7	-8.9	-16.2	4.3			
2003	4.8	-9.7	-0.1	0.6	-2.2	-4.6	-4.2	-6.0	10.9			
2004	17.5	11.6	6.4	8.6	-1.6	8.4	13.9	-10.6	19.6			
2003 Q1	5.5	-11.8	-0.1	1.2	-3.6	-8.9	-7.1	-14.0	13.5			
Q2	-2.0	-15.3	-1.8	-2.7	2.3	-10.5	-11.3	-7.1	4.1			
Q3	5.2	-8.1	-1.8	0.4	-9.4	0.2	0.5	-0.9	10.4			
Q4	10.7	-2.8	3.4	3.4	3.4	1.2	1.7	-0.7	15.8			
2004 Q1	16.0	17.3	7.2	7.9	5.1	11.8	16.3	-2.1	15.5			
Q2	22.8	14.6	8.9	12.8	-6.4	12.1	17.8	-10.7	25.9			
Q3	18.6	10.0	4.4	7.2	-6.4	9.5	17.1	-16.1	21.4			
Q4	13.2	4.7	5.1	6.6	-1.0	0.8	4.9	-13.9	16.0			

Source: Singapore Department of Statistics



**TABLE 3: CONSUMER PRICE INDEX**

Period	All Items	Food	Housing	Clothing & Footwear	Transport & Communications	Education & Stationery	Health Care	Recreation & Others	All Items	Food	Housing	Clothing & Footwear	Transport & Communications	Education & Stationery	Health Care	Recreation & Others
	2004 = 100									Year-on-Year % Change						
2002	97.8	97.4	100.6	99.4	98.7	93.8	92.5	96.9	-0.4	0.0	-2.2	0.2	-1.0	1.4	3.2	0.3
2003	98.3	97.9	100.1	99.8	98.8	95.9	94.4	97.7	0.5	0.6	-0.5	0.4	0.1	2.3	2.0	0.9
2004	100.0	99.9	100.0	99.9	100.0	100.0	100.0	100.0	1.7	2.0	-0.1	0.1	1.2	4.2	6.0	2.3
2003 Q1	98.3	97.7	100.0	99.6	99.3	94.7	93.9	98.0	0.7	0.0	-0.5	1.8	1.3	1.4	3.2	1.6
Q2	98.1	97.9	100.5	99.1	98.7	94.8	94.1	96.7	0.1	0.5	0.2	0.5	-0.4	1.6	1.6	-0.9
Q3	98.4	97.9	100.4	100.1	98.8	97.0	94.6	97.2	0.5	0.7	-0.3	-0.6	-0.5	3.1	1.8	0.9
Q4	98.6	98.2	99.5	100.4	98.6	97.1	94.8	99.0	0.7	1.1	-1.3	0.0	0.1	3.1	1.4	1.9
2004 Q1	99.5	99.5	98.6	99.8	100.0	99.5	99.9	99.7	1.2	1.8	-1.4	0.2	0.7	5.1	6.4	1.7
Q2	99.9	99.4	99.9	99.7	100.1	99.8	99.8	100.6	1.9	1.5	-0.6	0.7	1.4	5.2	6.1	4.1
Q3	100.3	100.2	100.6	99.8	100.6	100.0	100.1	99.7	1.9	2.3	0.3	-0.4	1.9	3.1	5.8	2.6
Q4	100.2	100.8	100.8	100.2	99.2	100.6	100.1	99.8	1.7	2.6	1.3	-0.2	0.7	3.7	5.6	0.9

Source: Singapore Department of Statistics

**TABLE 4: LABOUR MARKET**

Period	Average Monthly Earnings	Labour Productivity								Unit Labour Cost		Changes in Employment							
		All Sectors	Manufacturing	Construction	Wholesale & Retail Trade	Hotels & Restaurants	Transport & Communications	Financial Services	Business Services	Overall Economy	Manufacturing	All Sectors	Manufacturing	Construction	Wholesale & Retail Trade	Hotels & Restaurants	Transport & Communications	Financial Services	Business Services
Year-on-Year % Change											Thousand								
2002	0.8	4.6	10.3	-1.9	3.4	-1.4	5.7	-1.5	4.5	-1.1	-6.8	-22.9	-5.3	-34.3	-0.1	3.3	2.9	-2.0	-0.1
2003	1.7	2.6	5.2	0.8	7.4	-11.1	-2.4	3.2	-2.1	-0.7	-4.3	-12.9	-4.9	-17.5	-2.3	1.9	-1.4	2.2	0.5
2004	3.6	6.7	9.7	-1.6	12.7	8.0	8.6	2.1	-1.1	-4.0	-9.1	71.4	27.2	-9.1	11.0	4.1	3.2	6.2	17.6
2003 Q1	2.4	2.1	7.0	-5.3	5.3	-7.6	-0.8	-6.7	-1.6	1.6	-4.3	-4.1	-2.6	-6.5	-0.6	-1.4	0.6	0.8	0.0
Q2	1.5	-2.3	-3.2	1.9	1.2	-28.8	-11.4	4.7	-3.5	5.0	5.8	-26.0	-6.4	-7.1	-3.9	-5.8	-2.3	0.7	1.4
Q3	1.3	4.0	6.4	3.6	9.6	-6.8	-1.8	6.5	-1.6	-3.2	-6.0	0.9	0.0	-1.9	-2.0	4.1	-0.6	-0.1	0.7
Q4	1.6	6.6	10.8	3.1	13.1	-2.1	4.5	8.8	-1.7	-5.8	-11.1	16.2	4.1	-2.0	4.2	5.1	0.9	0.9	-1.6
2004 Q1	4.4	8.0	9.9	7.9	14.0	1.6	4.4	14.3	0.7	-5.3	-9.7	13.7	6.1	-3.6	2.5	-0.6	1.0	1.2	2.1
Q2	4.1	10.8	16.7	-1.7	17.4	32.5	18.4	2.1	0.4	-9.1	-15.0	10.9	6.4	-2.7	1.6	0.5	0.0	1.8	4.2
Q3	1.4	4.7	5.4	-7.4	12.8	3.6	7.9	-1.6	-1.9	-3.1	-5.9	14.1	8.5	-1.7	0.2	-0.3	1.1	1.2	3.2
Q4	4.4	3.5	7.3	-4.4	7.5	1.3	4.6	-4.7	-3.4	1.5	-5.8	32.7	6.3	-1.1	6.7	4.5	1.2	2.0	8.1

Source: Singapore Department of Statistics/Ministry of Manpower

**TABLE 5: EXTERNAL TRADE**

Period	Total Trade	Exports	Domestic Exports					Re-exports	Imports	Exports	Domestic Exports			Re-exports	Imports	Year-on-Year % Change		
			Total	Oil	Non-oil		Total				Oil	Non-oil	Total				Oil	Non-oil
					Total	Electronics												
			At Current Prices									At 2000 Prices						
2002	1.5	2.7	0.8	-3.9	1.9	-3.2	9.8	4.9	0.3	7.9	7.7	-4.3	10.6	8.0	2.5			
2003	9.6	12.1	16.3	21.7	15.1	5.1	28.9	7.4	7.0	14.3	18.2	6.0	20.6	9.5	6.5			
2004	22.5	20.9	19.9	32.8	17.0	14.7	19.6	22.1	24.3	20.8	18.5	9.4	20.1	23.9	22.7			
2003 Q1	13.5	17.1	26.4	56.5	20.6	9.1	37.5	6.9	9.8	18.6	25.8	12.4	28.7	9.7	6.6			
Q2	2.7	5.4	11.8	20.2	10.1	-3.4	27.9	-1.7	-0.1	8.2	14.9	11.8	15.5	0.2	0.2			
Q3	7.7	10.5	12.0	6.2	13.2	3.8	26.4	8.7	4.6	12.3	13.7	-3.0	17.1	10.5	4.9			
Q4	15.0	16.0	16.2	12.3	17.1	10.9	25.3	15.7	13.9	18.5	19.3	3.8	22.3	17.3	14.3			
2004 Q1	17.2	15.3	12.5	4.9	14.5	7.0	23.1	18.8	19.3	17.7	15.4	5.4	17.3	20.8	21.6			
Q2	27.0	25.7	22.8	30.2	21.1	21.8	20.4	29.3	28.5	25.7	21.5	6.8	24.5	31.5	27.3			
Q3	27.8	25.2	25.3	46.8	20.8	17.9	24.1	25.2	30.7	23.2	20.9	11.0	22.5	26.3	27.2			
Q4	18.1	17.5	18.8	51.7	12.0	12.6	11.3	15.9	18.9	16.9	16.3	14.6	16.6	17.7	15.5			

Source: International Enterprise Singapore

**TABLE 6: NON-OIL DOMESTIC EXPORTS by selected countries**

Period	All Countries	ASEAN				NIEs				USA	Japan	EU-15	Others
		Total	of which			Total	Hong Kong	S. Korea	Taiwan				
			Malaysia	Thailand	Philippines								
Year-on-Year % Change													
2002	1.9	-2.0	-6.3	12.1	-15.3	6.0	13.7	-5.4	5.0	-1.0	-7.4	-8.1	25.4
2003	15.1	4.0	-1.6	5.6	21.5	21.2	31.8	20.8	7.9	-0.6	10.1	32.0	27.5
2004	17.0	14.5	12.3	25.3	13.7	14.9	16.1	15.8	12.4	6.4	7.7	25.3	26.8
2003 Q1	20.6	3.2	-5.8	16.1	41.5	30.1	55.1	16.0	13.8	10.5	5.0	31.7	43.4
Q2	10.1	-7.3	-12.4	-3.6	6.2	14.4	27.5	14.0	-1.5	4.2	3.5	31.4	17.5
Q3	13.2	6.4	0.5	-0.9	17.6	20.4	29.5	24.9	5.2	-9.8	15.0	37.6	20.3
Q4	17.1	14.0	12.4	11.7	24.5	20.8	22.1	28.7	14.1	-5.2	17.1	27.9	31.5
2004 Q1	14.5	14.8	13.7	12.1	23.4	7.7	10.9	7.7	3.2	-6.8	7.6	34.4	25.6
Q2	21.1	18.6	13.8	30.8	25.4	25.9	30.7	23.2	20.2	1.5	9.1	29.5	37.1
Q3	20.8	14.4	15.2	34.3	10.5	15.0	12.0	22.6	15.0	19.9	9.5	19.8	38.1
Q4	12.0	10.9	7.1	24.6	-2.2	11.9	12.3	10.9	12.0	11.5	4.9	19.2	10.2
% Share of All Countries													
2002	100.0	18.9	11.3	4.3	2.1	15.7	6.9	3.4	5.4	21.7	9.0	16.2	18.5
2003	100.0	17.1	9.6	3.9	2.2	16.6	7.9	3.6	5.1	18.7	8.6	18.6	20.4
2004	100.0	16.7	9.2	4.2	2.1	16.3	7.9	3.5	4.9	17.0	7.9	19.9	22.2

Source: International Enterprise Singapore

**TABLE 7: ELECTRONICS LEADING INDEX**

Period	1999 = 100	Year-on-Year % Change	Quarter-on-Quarter % Change
2002	74.3	2.3	
2003	80.2	8.0	
2004	88.5	10.3	
2002 Q1	73.5	-14.8	8.8
Q2	76.7	7.0	4.4
Q3	74.2	14.2	-3.3
Q4	72.7	7.7	-1.9
2003 Q1	74.7	1.6	2.7
Q2	77.8	1.4	4.2
Q3	82.3	10.9	5.7
Q4	86.2	18.5	4.8
2004 Q1	88.6	18.7	2.8
Q2	89.8	15.5	1.4
Q3	88.2	7.3	-1.8
Q4	87.3	1.2	-1.1

Source: Monetary Authority of Singapore

**TABLE 8: BALANCE OF PAYMENTS – Current Account**

	Current Account Balance		Goods Account			Services Account						Income Balance	Current Transfers
	S\$ Million	% of GNI	Exports	Imports	Balance	Total	Transportation	Travel	Insurance	Government Services	Other		
2002	28,100	18.2	246,369	214,980	31,389	2,531	2,482	-3,407	-1,331	-144	4,931	-3,778	-2,042
2003	46,956	29.6	275,953	226,954	48,999	2,439	-266	-2,925	-1,054	-153	6,837	-2,500	-1,982
2004	47,122	26.8	333,422	280,667	52,754	830	-1,434	-4,486	-1,413	-202	8,365	-4,528	-1,934
2003 Q1	11,825	n.a.	65,083	53,562	11,521	1,106	254	-498	-226	-55	1,631	-275	-527
Q2	10,649	n.a.	65,652	54,456	11,196	-50	-471	-819	-265	-17	1,522	-12	-485
Q3	12,893	n.a.	70,500	57,187	13,313	921	115	-716	-269	-42	1,833	-857	-484
Q4	11,589	n.a.	74,719	61,750	12,969	462	-163	-892	-294	-40	1,851	-1,356	-486
2004 Q1	9,916	n.a.	74,775	63,597	11,178	520	-56	-1,074	-278	-82	2,009	-1,269	-512
Q2	10,714	n.a.	81,792	69,523	12,269	-371	-740	-1,242	-370	-27	2,009	-729	-455
Q3	13,401	n.a.	88,381	74,126	14,255	669	-204	-909	-405	-32	2,218	-1,043	-479
Q4	13,091	n.a.	88,474	73,421	15,052	12	-434	-1,262	-360	-60	2,129	-1,486	-487

Source: Singapore Department of Statistics

**TABLE 9: BALANCE OF PAYMENTS – Capital & Financial Accounts**

Period	Capital & Financial Account Balance	Capital Account	Financial Account						Errors & Omissions	Overall Balance	Official Foreign Reserves (End of Period)
			Total	Direct Investment	Portfolio Investment	Other Investment					
						Total	Banks	Others			
2002	-18,508	-287	-18,221	3,092	-24,101	2,788	1,461	1,327	-7,305	2,287	142,721
2003	-34,519	-292	-34,227	9,801	-18,240	-25,788	2,885	-28,672	-662	11,775	163,190
2004	-22,134	-308	-21,825	9,115	-19,177	-11,763	-2,213	-9,550	-4,556	20,433	183,844
2003 Q1	-9,911	-73	-9,838	1,957	-5,661	-6,134	-1,492	-4,642	-1,057	857	147,570
Q2	-7,765	-64	-7,701	1,932	-4,927	-4,706	-655	-4,051	30	2,914	152,592
Q3	-5,183	-78	-5,105	1,876	-3,320	-3,661	7,501	-11,162	-2,634	5,076	157,388
Q4	-11,660	-76	-11,584	4,036	-4,332	-11,288	-2,470	-8,818	2,999	2,928	163,190
2004 Q1	-112	-77	-35	8,092	-4,255	-3,872	4,075	-7,947	815	10,619	172,153
Q2	-6,354	-73	-6,281	4,908	-6,707	-4,482	-7,214	2,732	-4,056	304	175,204
Q3	-12,722	-81	-12,641	-6,597	-4,573	-1,470	-1,199	-271	139	819	172,855
Q4	-2,946	-77	-2,869	2,712	-3,642	-1,939	2,124	-4,063	-1,454	8,691	183,844

Source: Singapore Department of Statistics/Monetary Authority of Singapore

**TABLE 10: EXCHANGE RATES**

End of Period	Singapore Dollar Per									
	US Dollar	Pound Sterling	EURO	100 Swiss Franc	100 Japanese Yen	Malaysian Ringgit	Hong Kong Dollar	100 New Taiwan Dollar	100 Korean Won	Australian Dollar
2002	1.7365	2.7839	1.8193	125.16	1.4632	0.4570	0.2227	4.9950	0.1461	0.9820
2003	1.7008	3.0294	2.1388	137.12	1.5909	0.4476	0.2191	5.0060	0.1423	1.2760
2004	1.6338	3.1455	2.2243	144.10	1.5916	0.4299	0.2102	5.1474	0.1578	1.2723
2003 Q1	1.7656	2.7829	1.9116	129.47	1.4763	0.4646	0.2264	5.0793	0.1403	1.0652
Q2	1.7567	2.9048	2.0092	130.01	1.4657	0.4623	0.2253	5.0742	0.1469	1.1723
Q3	1.7285	2.8853	2.0088	130.53	1.5559	0.4549	0.2232	5.1230	0.1503	1.1749
Q4	1.7008	3.0294	2.1388	137.12	1.5909	0.4476	0.2191	5.0060	0.1423	1.2760
2004 Q1	1.6790	3.0778	2.0553	131.78	1.6054	0.4418	0.2154	5.0785	0.1462	1.2734
Q2	1.7163	3.1038	2.0747	135.68	1.5807	0.4516	0.2201	5.0822	0.1490	1.1822
Q3	1.6908	3.0406	2.0835	134.15	1.5248	0.4449	0.2168	4.9746	0.1466	1.2112
Q4	1.6338	3.1455	2.2243	144.10	1.5916	0.4299	0.2102	5.1474	0.1578	1.2723
2005 Q1	1.6498	3.1010	2.1329	137.68	1.5389	0.4342	0.2115	5.2191	0.1620	1.2732

Source: Monetary Authority of Singapore

**TABLE 11: MONETARY**

End of Period	Money Supply								Interest Rates				
	Narrow Money M1	Broad Money M2	Broad Money M3	Reserve Money	Narrow Money M1	Broad Money M2	Broad Money M3	Reserve Money	Prime Lending Rate	3-month Interbank Rate	3-month SIBOR (US\$)	Banks	
												Savings Rate	12-month Fixed Deposit Rate
	S\$ Billion				Year-on-Year % Change				Rate (% Per Annum)				
2002	35.8	180.3	188.8	20.0	-0.7	-0.3	-0.8	-0.3	5.35	0.81	1.38	0.44	1.32
2003	38.7	194.8	200.0	20.7	8.1	8.1	5.9	3.4	5.30	0.75	1.15	0.24	0.70
2004	44.2	207.0	212.2	21.8	14.0	6.2	6.1	5.7	5.30	1.44	2.56	0.23	0.72
2003 Q1	36.9	183.5	191.7	20.0	1.7	0.5	-0.1	0.4	5.30	0.75	1.28	0.32	1.15
Q2	36.7	184.7	191.6	20.0	5.2	2.9	1.7	4.8	5.30	0.63	1.13	0.24	0.72
Q3	38.0	185.1	191.9	19.8	11.8	4.8	3.6	4.1	5.30	0.81	1.17	0.24	0.70
Q4	38.7	194.8	200.0	20.7	8.1	8.1	5.9	3.4	5.30	0.75	1.15	0.24	0.70
2004 Q1	41.4	201.7	206.9	20.5	12.3	9.9	7.9	2.5	5.30	0.75	1.11	0.23	0.70
Q2	41.1	204.4	209.5	20.6	12.0	10.7	9.3	3.0	5.30	0.81	1.61	0.23	0.70
Q3	41.9	200.7	205.9	21.1	10.2	8.4	7.3	6.6	5.30	1.44	2.02	0.23	0.72
Q4	44.2	207.0	212.2	21.8	14.0	6.2	6.1	5.7	5.30	1.44	2.56	0.23	0.72

Source: Monetary Authority of Singapore

**TABLE 12: DOMESTIC LIQUIDITY INDICATOR**

Period	Change from 3 Months Ago											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2002	-0.207	0.129	0.092	-0.201	-0.228	-0.245	0.189	0.226	0.331	-0.044	-0.131	-0.038
2003	0.104	-0.135	-0.325	-0.674	-0.306	-0.338	-0.161	-0.101	-0.025	-0.003	-0.180	-0.032
2004	0.106	0.216	0.121	0.402	0.195	0.230	-0.130	0.087	0.392	0.624	0.554	0.271
2005	0.301	0.244	0.352									

Source: Monetary Authority of Singapore

Note: The DLI is a measure of overall monetary conditions, reflecting changes in the S\$NEER and domestic 3-month interbank rate. A positive (negative) number indicates a tightening (easing) monetary policy stance from the previous quarter. Please refer to the June 2001 issue of MAS ED *Quarterly Bulletin* for more information.

**TABLE 13: FISCAL**

Period	Operating Revenue							Expenditure			Primary Surplus (+)/ Deficit (-)	Less: Special Transfers	Add: Net Investment Income Contribution	Budget Surplus (+)/ Deficit (-)	
	Total	Tax Revenue						Non-tax Revenue	Total	Operating					Development
		Total	of which												
			Income Tax	Asset Taxes	Stamp Duty	GST									
	S\$ Million														
FY2002	25,469	21,502	11,496	1,308	695	2,165	3,967	27,152	19,359	7,793	-1,683	1,802	3,675	191	
FY2003	25,315	21,501	10,271	1,512	743	2,957	3,813	28,499	19,991	8,508	-3,184	603	1,900	-1,887	
FY2004 (Revised)	27,814	24,158	11,631	2,090	760	3,700	3,655	29,224	20,488	8,736	-1,411	1,710	2,680	-440	
FY2005 (Estimated)	28,852	25,366	12,351	1,905	798	4,000	3,486	29,681	21,680	8,001	-829	820	1,860	211	
	% of Nominal GDP														
FY2002	16.0	13.5	7.2	0.8	0.4	1.4	2.5	17.1	12.2	4.9	-1.1	1.1	2.3	0.1	
FY2003	15.3	13.0	6.2	0.9	0.4	1.8	2.3	17.2	12.1	5.1	-1.9	0.4	1.1	-1.1	
FY2004 (Revised)	15.6	13.5	6.5	1.2	0.4	2.1	2.0	16.4	11.5	4.9	-0.8	1.0	1.5	-0.2	
FY2005 (Estimated)	15.4	13.6	6.6	1.0	0.4	2.1	1.9	15.9	11.6	4.3	-0.4	0.4	1.0	0.1	

Source: Ministry of Finance

# List of Publications

Title	Frequency	Online Links
<b>Inflation Monthly</b>	Monthly	<a href="http://www.mas.gov.sg/masmcm/bin/pt1Inflation_Monthly.htm">http://www.mas.gov.sg/masmcm/bin/pt1Inflation_Monthly.htm</a>
<b>Monthly Statistical Bulletin</b>	Monthly	<a href="https://secure.mas.gov.sg/frames/msb/msbIndexpage.html">https://secure.mas.gov.sg/frames/msb/msbIndexpage.html</a>
<b>Recent Economic Developments</b>	Quarterly	<a href="http://www.mas.gov.sg/masmcm/bin/pt1Recent_Economic_Developments.htm">http://www.mas.gov.sg/masmcm/bin/pt1Recent_Economic_Developments.htm</a>
<b>Survey of Professional Forecasters</b>	Quarterly	<a href="http://www.mas.gov.sg/masmcm/bin/pt1Survey.htm">http://www.mas.gov.sg/masmcm/bin/pt1Survey.htm</a>
<b>Financial Stability Review</b>	Semi-annual	<a href="http://www.mas.gov.sg/masmcm/bin/pt1MAS_FSR_No1_Dec04.htm">http://www.mas.gov.sg/masmcm/bin/pt1MAS_FSR_No1_Dec04.htm</a>
<b>Macroeconomic Review</b>	Semi-annual	<a href="http://www.mas.gov.sg/masmcm/bin/pt1Macroeconomic_Review.htm">http://www.mas.gov.sg/masmcm/bin/pt1Macroeconomic_Review.htm</a>
<b>Monetary Policy Statements</b>	Semi-annual	<a href="http://www.mas.gov.sg/masmcm/bin/pt1Monetary_Policy_Statements.htm">http://www.mas.gov.sg/masmcm/bin/pt1Monetary_Policy_Statements.htm</a>
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<b>Singapore's Exchange Rate Policy</b>	Feb 2001	<a href="http://www.mas.gov.sg/masmcm/bin/pt1Singapore_s_Exchange_Rate_Policy.htm">http://www.mas.gov.sg/masmcm/bin/pt1Singapore_s_Exchange_Rate_Policy.htm</a>

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