

Singapore: Selected Issues

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SINGAPORE

Selected Issues

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I. OVERVIEW

1. The recent cyclical peak in 2000 fueled by the strong global electronics demand, followed by the sharp slowing of the economy precipitated by the downturn in the electronics cycle and significant weakness in the US economy, highlights the importance of external demand in the business cycle of Singapore's economy. Because of the small size of Singapore's domestic market, external factors will undoubtedly remain a key determinant of its economic outlook. In a volatile external environment, an important challenge for Singapore has been to sustain strong long-term growth and dampen cyclical fluctuations.
2. Well aware of these challenges, Singapore has embarked on an ambitious program of structural reforms in the last two decades aimed, to a large extent, at diversifying the manufacturing base and moving it up the value added chain, and liberalizing and strengthening the financial sector. This paper examines the structural change in Singapore's manufacturing industry during 1980–99, analyzes the key recent developments and reforms of Singapore's financial sector, and traces the evolution of the policy on noninternationalization of the Singapore dollar.
3. Chapter II examines the extent to which the structure of the manufacturing sector has changed in Singapore over the period 1980–99. In particular, the focus is on two questions: did the manufacturing sector move up the value added chain and has the manufacturing base become more diversified during the period 1980–99? The analysis strongly supports the view that the Singaporean manufacturing sector has continued its fast pace transformation from low/medium value added sectors to high tech and high value added sectors during the last two decades. The continuous upward shift along the value added chain in the manufacturing sector coupled with the diversification effort has contributed to both enhancing long term-growth and significantly reducing cyclical fluctuations in real output.
4. Chapter III provides an update on the reforms implemented over the past year and outlines the remaining tasks and priorities. In early 1998, the Singapore authorities unveiled a program of comprehensive reforms aimed at positioning Singapore at the forefront of financial sector innovations in a global economic environment. The overarching objective of the reforms were to overcome the disadvantage of the small size of the domestic market in Singapore and to compensate for the lack of a natural hinterland unlike other Asian financial centers such as Hong Kong and Tokyo. The strategy involved an active role for the government in promoting the industry, including through tax and other incentives, and reforms of the regulatory environment in a manner that maintained a robust financial system while at the same time encouraging innovation. As a result, the financial sector landscape has now come close to the vision set out in early 1998. The institutional environment is already at par with the international best practice in most areas, and continues to be reviewed and upgraded. Activity has also picked up sharply in a number of segments including the bond market and asset management. Challenges ahead are continued growth in the capital market and improved efficiency and international competitiveness in the banking sector, while completing the transformation of the supervisory framework to a more progressive risk-based regime.

5. Chapter IV traces the evolution of the policy on noninternationalization of the Singapore dollar since the 1980s and assesses its effect on Singapore's integration with the international financial market. Singapore has long maintained several restrictions against the international use of its currency, generally referred to as the policy of "not encouraging the internationalization of the Singapore dollar." The policy has been liberalized in stages since the late 1990s, and the most recent and significant liberalization was announced in December 2000. Even before the recent liberalization, the policy posed few impediments to international trade and capital flows, for the policy was intended not to inhibit free flow of bona fide capital but to limit speculative activities in Singapore's financial markets. The non-internationalization policy needs to be appraised from the perspective of overall macroeconomic policy framework of Singapore as it is difficult to disentangle the effects of the measures on insulating Singapore from speculative attacks from the overall macroeconomic policy track record. The noninternationalization policy clearly has had a strong signaling effect in deterring potential speculative activity against the S\$. However, without the strong and credible policy record, the noninternationalization policy is not likely to have been defensible for over two decades under the highly open regime for capital and financial accounts.

II. STRUCTURAL CHANGE IN SINGAPORE'S MANUFACTURING INDUSTRY DURING 1980–99¹

A. Introduction

1. This chapter will examine the extent to which the structure of the manufacturing sector has changed in Singapore over the period 1980–99. In particular, the focus will be on two questions: did the manufacturing sector move up the value added chain and has the manufacturing base become more diversified during the period 1980–99? The study uses annual census data for 4,007 establishments regrouped in 77 sub-sectors (corresponding to the 5-digit elements of the Singapore Standard Industrial Classification). The 77 sub-sectors will be further aggregated into 23 sectors. The data include the number of workers, output, value added, direct exports, and fixed assets. All value data are in nominal terms.²

2. The chapter is divided into nine sections. Section B covers labor reallocation across sectors. Sections C to G cover the evolution of: (i) sectoral shares in manufacturing value added; (ii) value added content; (iii) relative productivity; (iv) relative capital-labor ratio; and (v) export shares and degree of openness. Section H presents a few empirical results, and Section I concludes.

B. Labor Reallocation Across Sectors

3. Table II.1 shows the sectoral shares in manufacturing employment and their corresponding ranking among the 23 sectors in 1980 and 1999. In addition, the table shows the following statistics for the whole period: the mean, the standard deviation normalized by the mean share during 1980–99, and the minimum and maximum.

4. While *electronics* was already the most important manufacturing sector in Singapore in 1980 in terms of employment share (25 percent), this sector has fundamentally changed during the last two decades. In 1980, *semiconductors* were the dominant employer within the electronics sector with 6½ percent of total manufacturing employment, while *communication equipment* was insignificant (with ¼ percent of manufacturing employment) and *computing and data processing equipment* was still in its infancy with 1¾ percent of manufacturing employment. In 1999, *electronics* strengthened its top position to 31 percent of manufacturing employment. Thus, roughly one-third of the manufacturing employment is in the *electronics* sector. Furthermore, the structure of the *electronics* sector has significantly changed. While the share of *semiconductors* has increased slightly from 6½ percent to 7 percent, *communications equipment* increased its share from ¼ percent to 1¼ percent, and more importantly, *computing and data processing* moved from 1¾ percent to 13½ percent of manufacturing employment becoming the most important sub-sector in electronics, dominating every other two-digit sector.

¹ Prepared by Abdelhak Senhadji (x38380), who is available to answer questions.

² No data are available on deflators at the level of disaggregation used here.

5. Interestingly, *wearing apparel* was the second largest sector with 10 percent of manufacturing employment and *textiles* represented 3 percent. These traditional sectors have weakened considerably during the last two decades and represented only 2½ percent and ½ percent of manufacturing employment, respectively. *Chemicals* only represented 2¼ percent of manufacturing employment in 1980 and was ranked 15th among the 23 manufacturing sectors. Its share in manufacturing employment more than doubled during 1980–99 (4½ percent in 1999) and is ranked ninth in 1999. The relative size of *wood and wood products* also declined significantly (from 3½ percent in 1980 to ½ percent in 1999).

6. In view of the size of the increase in their labor shares, it is not surprising that *communication equipment and computing* and *data processing* are among the sectors with the highest volatility, as measured by their normalized standard deviation, indicative of the fundamental transformation occurring in these sectors. The other sectors with high normalized standard deviations are the declining sectors: *wood and wood products*, *textiles*, *refined petroleum products*, and *wearing apparels*.

C. Evolution of Sectoral Shares in Manufacturing Value Added

7. The previous section shows that there have been important shifts in labor across manufacturing sectors. Is there a pattern in this labor reallocation process and, in particular, is there evidence of reallocation of labor toward higher productivity sectors? There is indeed strong evidence in the data showing a rapid upgrading of the Singaporean manufacturing sectors toward higher value added sectors as shown by the sectoral shares in manufacturing value added in Table II.2.

8. First, *electronics* more than doubled their share in manufacturing value added during 1980–99, starting with 20½ percent and ending with 43½ percent. This gain in value added share is much larger than the gain in the employment share (which only increased from 25 percent to 31 percent during the same period) corroborating the view that the economy has shifted toward higher value added sectors. Another important fact pointing in the same direction is that *electronics* produced 43½ percent of manufacturing value added with only 31 percent of manufacturing employment in 1999. Consistent with the labor reallocation analysis in the previous section, *communication equipment* and, especially, *computing and data processing equipment* account for the bulk of the increase in electronics share in manufacturing value added. The former increased its share from ¼ percent to 3 percent, while the latter increased its share from 2½ percent to 24½ percent, becoming the dominant sector in manufacturing.

9. Second, *chemicals and chemical products* became the second most important manufacturing sector which produced 17½ percent of manufacturing value added with only 4½ percent of manufacturing employment in 1999. In this sector, *pharmaceutical and biopharmaceutical products* alone accounted for 12½ percent of manufacturing value added with merely ½ percent of manufacturing employment in 1999. Thus, electronics and chemicals accounted for more than 60 percent of manufacturing value added and 35 percent of manufacturing employment in 1999, versus 25 percent of manufacturing value added and 27 percent of employment in 1980.

10. Third, the relative importance of the more traditional sectors with low value added content such as *textiles, wearing apparels, and wood and wood products* declined substantially. All three sectors accounted for less than 1 percent of manufacturing value added in 1999 while they represented more than 5 percent in 1980.

11. An exception to this transformation of the economy toward higher value added sectors is the important contraction of *refined petroleum* which accounted for 18 percent of manufacturing value added and 1¼ percent of manufacturing employment in 1980, but only 4½ percent of value added and about 1 percent of employment in 1999. However, the decline in the relative importance of this sector is consistent with Singapore's strategy to move progressively away from sectors that are intensive in physical capital—indeed, this sector is highly intensive in physical capital as discussed in Section F—and move toward a knowledge-based economy where human capital plays a crucial role.

12. Sectors that are in the middle of the value added chain, such as *non-metallic mineral products, basic metals, machinery and equipment, electric machinery, and transport equipment* all lost in terms of value added share but less than the low value added sectors.

D. Evolution of Value Added Content

13. Value added content is defined as the ratio of value added divided by output. Table II.3 shows the change in value added content from 1980–99 for the 23 sectors. The value added content has been generally quite low, reflecting the high dependence of the manufacturing sector on material inputs, of which a large share is imported. For the whole manufacturing sector, value added accounts for only 22 percent in 1980 and 26 percent in 1999. The sector with consistently the highest value added content has been *pharmaceutical and bio-pharmaceutical products*. Its value added content was 49 percent in 1980 and has increased substantially to achieve a remarkable 90 percent in 1999. *Electronics* had a small value added content in 1980 (27 percent) which declined even further to account for only 22 percent of output in 1999, reflecting the large share of imported components in the sector's output. This is particularly true for the *computing and data processing equipment* whose value added content declined from 44 percent to 21 percent. However, fitting an exponential trend through the whole sample (including all sectors) for the periods 1980–89 and 1990–99 shows that value added content declined somewhat for during 1980–89 but increased during 1990–99.

E. Evolution of Relative Labor Productivity

14. The analysis of productivity across time is somewhat limited by the fact that all data are in current prices. Consequently, the traditional measure of productivity—value added in constant prices divided by the number of hours worked or employment—cannot be used here. However, it is possible to circumvent this problem by working with an index of relative productivity (which is unit free and therefore does not require constant price valuations), defined as value added per worker in current prices for a given sector divided by the same

ratio for the whole manufacturing sector. A value less than one implies that labor productivity in the given sector is smaller than the labor productivity for the whole manufacturing sector. The opposite holds for a value larger than one. A value of one indicates that the sector is representative of the whole manufacturing sector.

15. This measure of productivity is presented in Table II.4. In 1980, the sector with the highest relative labor productivity³ was *refined petroleum products* with more than 15 times the productivity of the whole manufacturing sector. Interestingly, *pharmaceuticals and bio-pharmaceuticals* was second with 4½ times the average productivity. Note that *electronics* was below average, even though two of its components, *semiconductors* and *computing and data processing equipment*, were above average. As expected, the traditional sectors, including *textiles, wearing apparels, leather, wood, and paper* have the lowest relative labor productivity.

16. The main changes in 1999 are: (i) *pharmaceuticals and bio-pharmaceuticals*, with a more than a fivefold increase in relative productivity, displaced *refined petroleum products* for the first place, bringing the *chemicals* cluster as whole to the second position after *refined petroleum products*; (ii) relative productivity in electronics increased by about 70 percent and is significantly higher than the manufacturing average (while it was significantly lower in 1980) with gains in all sub-sectors, particularly in communication equipments where relative productivity increased threefold; (iii) the significant gains in relative productivity for *chemicals* and *electronics* implies that the relative productivity of the other sectors has declined, including the traditional labor-intensive sectors but also the *metal-based industries, machinery equipment, electric machinery and transport equipment*; (iv) finally, *pharmaceuticals and bio-pharmaceuticals* are on a steep upward trend as the maximum relative productivity over 1980–99 occurred in 1999 and the minimum was recorded in the beginning of the period, while refined petroleum products, though with still relatively high labor productivity, followed the opposite path.

F. Evolution of Relative Capital-Labor Ratio

17. The usual capital-labor ratio cannot be used here because of the lack of constant prices. However, as in the case of productivity, we can define a relative capital-labor ratio as the sector's capital-labor ratio normalized by the capital-labor ratio for the whole manufacturing sector. The capital stock is measured by gross fixed assets and labor by the number of workers. Table II.5 shows that refined petroleum has had, by far, the highest capital-labor ratio with more than 18 times capital per worker than the average for the whole manufacturing sector. In 1999, *chemicals* had the second highest capital-labor ratio (more than four times the manufacturing average). *Electronics* was labor intensive in 1980 but capital per worker has increased 2½ times faster than the manufacturing average during 1980–99. In particular, *semiconductors* was labor intensive in 1980 with 50 percent less

³ Note that the index in Table II.4 is a measure of *relative* (to the whole manufacturing sector) labor productivity.

capital per worker than the manufacturing average, but had close to 2½ times more capital per worker than the manufacturing average in 1999. Note that *communication equipments* and *computing and data processing* are much less capital intensive than semiconductors with about 50 percent the capital-labor ratio of the whole manufacturing sector. However, these sectors are likely to be intensive in human capital which is not measured here.

G. Evolution of Export Shares and Degree of Openness

18. Table II.6, which shows sectoral shares in manufacturing exports, confirms the important transformation of the Singaporean economy during the last two decades. High-tech *electronics* and *chemicals* exports have gradually replaced exports of *refined petroleum products* and exports of traditional low value added sectors, such as *food*, *wearing apparels*, *wood and wood products*, and *textiles*. The share of *electronics* exports have increased from 23¾ percent in 1980 to 62¼ percent in 1999 while the *chemicals* share increased from 2¾ percent in 1980 to 13 percent in 1999. These share increases were to the detriment of refined petroleum, which moved from 40 percent of manufacturing exports in 1980 to 4 percent in 1999, and to the detriment of *food*, *wearing apparels*, *wood and wood products*, and *textiles* for which the combined share declined from 11¼ percent in 1980 to 2½ percent in 1999. Perhaps the most remarkable transformation is that of computing and data processing equipment, which increased its share of manufacturing exports from 1¾ percent in 1980 to 40 percent in 1999.

19. Table II.7 shows the share of exports in output, and thus measures the degree of openness. For the whole manufacturing sector, exports accounted for 60 percent of output in 1980 and 64 percent in 1999. *Pharmaceuticals and bio-pharmaceutical products* is the most open sector with exports representing 98 percent of output on average during 1980–99. The two main sectors, *electronics* and *chemicals*, export 77 percent and 80 percent of output, respectively.

H. Some Empirical Results

20. What are the determinants of labor productivity? Solow's growth model predicts that inter-sectoral differences in labor productivity reflect simply differences in the capital-labor ratio. A simple test would be to regress the relative labor productivity index (RLP_{it}) defined in Section D on the relative capital-labor ratio ($RKLR_{it}$) defined in Section E.⁴ The equation is estimated using fixed effects on a panel of 1,539 observations. The indices i and t refer to sector i and year t . The t -statistic are given below the coefficient estimates:

$$\begin{aligned} \log(RLP_{it}) &= -0.186 + 0.566 \log(RKLR_{it}), \\ &\quad (-36.53) \quad (67.12) \\ R^2 &= 0.74. \end{aligned} \tag{II.1}$$

⁴ Capital-labor ratio is the only right-hand side variable in equation (II.1) since Solow's model implies that it is the only relevant explanatory variable.

As predicted, the relationship between these two variables is quite strong. Under constant returns to scale, the coefficient on $\log(RKLR_{it})$ should yield the share of physical capital in manufacturing value added (that is, 57 percent) which seems reasonable.

21. If the manufacturing sector in Singapore has moved up the value-added chain, factor inputs (labor and capital) should have been relocated to sectors with high productivity. This implies that variations in sectoral employment and variations in sectoral capital stocks should be positively correlated with relative labor productivity (RLP). The following two equations carry out this test, where the growth rate in the number of workers ($\Delta\log(w_{it})$) and the growth rate of the stock of capital ($\Delta\log(k_{it})$) are regressed on (RLP_{it}), on a time trend, on the lagged dependent variable to take into account the adjustment process, real GDP to control for business cycle fluctuations, and fixed effects (not reported below) to control for other factors that are not explicitly introduced in the equation. The sample is a panel of 1,155 observations:

$$\Delta\log(w_{it}) = -0.0028trend - 0.285\Delta\log(w_{it-1}) + 0.708\Delta\log(GDP_{it}) + 0.0096RLP_{it},$$

(-6.88) (-6.78) (14.58) (9.76) (II.2)

$$R^2 = 0.17,$$

$$\Delta\log(k_{it}) = 0.0055trend - 0.340\Delta\log(k_{it-1}) + 0.426\Delta\log(GDP_{it}) + 0.011RLP_{it},$$

(5.24) (-8.46) (3.82) (2.20) (II.3)

$$R^2 = 0.15.$$

The regressions show a positive and statistically significant correlation between changes in factors of production and relative labor productivity suggesting that factor inputs have indeed moved toward sectors with higher labor productivity.

22. Another relevant question is whether the sectors which export a large share of their output are those with higher labor productivity as they face stiffer competition on international markets. To answer this question, RLP is regressed on the relative degree of openness (RDO) defined as the ratio of exports to output divided by the same ratio for the whole manufacturing sector. The equation is estimated using fixed effects on a panel of 1,540 observations:

$$RLP_{it} = 0.136 RDO_{it},$$

(34.79) (II.4)

$$R^2 = 0.84.$$

The relationship between relative productivity and relative openness is very strong and implies that a sector that has a degree of openness (that is a ratio of exports to output) 10 percent larger than the manufacturing average will have labor productivity 1½ percentage points higher than the manufacturing average.

23. A final question is whether the magnitude of the business cycle fluctuations of Singapore's economy has changed significantly between the 1980's and the 1990's. Comparing the volatility of real GDP growth during the periods 1980–89 and 1990–99 shows that fluctuations in real activity have indeed dampened. The standard errors of the growth rates of real GDP over 1980–89 and 1990–99 were, respectively, 4 percent and 3.2 percent, a decline of 20 percent in the magnitude of fluctuations in real GDP growth.⁵ A similar exercise for real value added in the manufacturing sector yields a standard error of 8½ percent for 1980–89 and 4½ percent for 1990–99, a decline of more than 50 percent in the amplitude of fluctuations in the manufacturing sector. Clearly, it is difficult to fully attribute any observed change to the effort to diversify the economy. Other key factors that affect the business cycle include the volatility of external demand and the macroeconomic management framework. However, Singapore has always been an open manufacturing-based economy and the framework for economic management has not changed significantly during the last two decades. Thus, albeit not definitive, the reduction in the magnitude of fluctuations suggests that the diversification effort has paid off in terms of reducing cyclical fluctuations.

I. Conclusion

24. The analysis above strongly supports the view that the Singaporean manufacturing sector has continued its fast pace transformation from low/medium value added sectors to high tech and high value added sectors during the last two decades. *Electronics* and *chemicals* account for more than 60 percent of value added and 35 percent of employment in the manufacturing sector. The *electronics* sector, while well established already in 1980, has consolidated its position and moved up the high tech product chain through investment both in physical capital and skill-upgrade. Growth in *chemicals* has outpaced even electronics and has allowed the Singaporean economy to diversify its manufacturing base with still significant growth potential ahead. The diversification effort coupled with the continuous upward shift along the value added chain in the manufacturing sector has contributed to both enhancing long term-growth and significantly reducing cyclical fluctuations in real output.

⁵ More precisely, the reported standard errors are the standard errors of the de-meanned series of real GDP growth rates, that is, the standard errors of regression of the first difference of the log of real GDP on a constant.

Table II.1. Sectoral Shares in Manufacturing Employment, 1980-99

Industry	Description	1980			1999			1980-1999			
		Share	Rank	Share	Rank	Share	Rank	Mean	Std	Min	Max
1	15-16	0.049	8	0.045	10	0.044	10	0.038	0.051		
2	Food, Beverage & Tobacco	0.031	14	0.005	22	0.013	22	0.005	0.031		
3	Textiles & Textile Manufactures	0.098	2	0.024	13	0.072	13	0.022	0.104		
4	Wearing Apparel Except Footwear	0.010	20	0.003	23	0.006	23	0.003	0.010		
5	Leather, Leather Products & Footwear	0.036	13	0.005	20	0.014	20	0.004	0.036		
6	Wood & Wood Products Except Furniture	0.015	18	0.014	16	0.014	16	0.013	0.016		
7	Paper & Paper Products	0.042	10	0.051	8	0.049	8	0.042	0.054		
8	Publishing, Printing & Reproduction of Recorded Media	0.012	19	0.009	18	0.011	18	0.009	0.013		
9	Refined Petroleum Product	0.022	15	0.046	9	0.031	9	0.022	0.046		
10	Chemicals and Chemical Products	0.004	22	0.005	19	0.005	19	0.004	0.006		
11	2420 <i>Manufacture of Pharmaceutical and Bio-Pharm. products</i>	0.042	11	0.059	7	0.047	7	0.038	0.059		
12	Rubber & Plastic Product	0.016	17	0.018	15	0.020	15	0.015	0.030		
13	Non-Metallic Mineral Products	0.008	21	0.005	21	0.007	21	0.005	0.008		
14	Basic Metals	0.058	6	0.112	3	0.077	3	0.058	0.112		
15	Fabricated Metal Products Except Machinery & Equipment	0.080	4	0.107	4	0.092	4	0.080	0.107		
16	Machinery & Equipment	0.043	9	0.032	11	0.045	11	0.032	0.052		
17	Electric Machinery & Apparatus	0.250	1	0.312	1	0.301	1	0.219	0.349		
18	Electronic Products & Components	0.066	5	0.071	6	0.053	6	0.041	0.071		
19	3111 <i>Manufacture of Semiconductor devices</i>	0.003	23	0.013	17	0.014	17	0.003	0.028		
20	3120 <i>Manufacture of communications equipment</i>	0.018	16	0.135	2	0.094	2	0.018	0.160		
21	3141/990 <i>Manufacture of Computing and Data Processing Equipment</i>	0.037	12	0.025	12	0.025	12	0.020	0.037		
22	Medical, Precision & Optical Instruments, Watches & Clocks	0.097	3	0.103	5	0.091	5	0.063	0.112		
23	Transport Equipment	0.053	7	0.024	14	0.043	14	0.024	0.057		
34	Other Manufacturing Industries										

Sources: Data provided by the Singapore authorities; and staff estimates.

Table II.2. Sectoral Shares in Manufacturing Value Added, 1980-99

Industry	Description	1980		1999		1980-1999			
		Share	Rank	Share	Rank	Mean	Std	Min	Max
1 15-16	Food, Beverage & Tobacco	0.039	8	0.025	13	0.040	0.210	0.025	0.053
2 17	Textiles & Textile Manufactures	0.017	20	0.002	21	0.007	0.690	0.002	0.017
3 18	Wearing Apparel Except Footwear	0.032	11	0.005	19	0.023	0.522	0.005	0.036
4 19	Leather, Leather Products & Footwear	0.004	22	0.001	23	0.002	0.445	0.001	0.004
5 20	Wood & Wood Products Except Furniture	0.019	19	0.002	22	0.007	0.862	0.002	0.019
6 21	Paper & Paper Products	0.010	21	0.009	17	0.014	0.206	0.009	0.018
7 22	Publishing, Printing & Reproduction of Recorded Media	0.032	10	0.038	10	0.044	0.143	0.032	0.052
8 23	Refined Petroleum Product	0.181	2	0.044	9	0.090	0.572	0.044	0.182
9 24	Chemicals and Chemical Products	0.044	7	0.175	3	0.094	0.366	0.043	0.175
10 2420	Manufacture of Pharmaceutical and Bio-Pharm. products	0.020	17	0.126	4	0.049	0.493	0.020	0.126
11 25	Rubber & Plastic Product	0.025	13	0.024	14	0.026	0.101	0.022	0.031
12 26	Non-Metallic Mineral Products	0.021	15	0.014	16	0.023	0.351	0.011	0.043
13 27	Basic Metals	0.019	18	0.004	20	0.010	0.437	0.004	0.019
14 28	Fabricated Metal Products Except Machinery & Equipment	0.044	6	0.051	8	0.056	0.122	0.044	0.066
15 29	Machinery & Equipment	0.094	4	0.053	7	0.080	0.293	0.053	0.130
16 30	Electric Machinery & Apparatus	0.033	9	0.019	15	0.031	0.140	0.019	0.037
17 31	Electronic Products & Components	0.206	1	0.436	1	0.326	0.301	0.163	0.449
18 3111	Manufacture of Semiconductor devices	0.083	5	0.101	5	0.060	0.387	0.033	0.104
19 3120	Manufacture of communications equipment	0.003	23	0.031	11	0.018	0.669	0.002	0.040
20 3141/9/90	Manufacture of Computing and Data Processing Equipment	0.024	14	0.244	2	0.146	0.583	0.023	0.267
21 32	Medical, Precision & Optical Instruments, Watches & Clocks	0.021	16	0.031	12	0.021	0.222	0.012	0.031
22 33	Transport Equipment	0.132	3	0.059	6	0.088	0.274	0.059	0.132
23 34	Other Manufacturing Industries	0.028	12	0.007	18	0.020	0.387	0.007	0.030

Sources: Data provided by the Singapore authorities; and staff estimates.

Table II.3. Share of Value Added in Output, 1980-99

Industry	Description	1980			1999			1980-1999			
		Share	Rank	Rank	Share	Rank	Rank	Mean	Std	Min	Max
1 15-16	Food, Beverage & Tobacco	0.132	22	15	0.260	15		0.200	0.227	0.132	0.260
2 17	Textiles & Textile Manufactures	0.257	13	10	0.293	10		0.247	0.065	0.226	0.293
3 18	Wearing Apparel Except Footwear	0.252	15	18	0.237	18		0.242	0.082	0.217	0.281
4 19	Leather, Leather Products & Footwear	0.250	18	21	0.216	21		0.247	0.105	0.208	0.293
5 20	Wood & Wood Products Except Furniture	0.174	21	20	0.221	20		0.191	0.129	0.151	0.236
6 21	Paper & Paper Products	0.240	19	5	0.394	5		0.328	0.178	0.211	0.406
7 22	Publishing, Printing & Reproduction of Recorded Media	0.405	4	2	0.495	2		0.436	0.097	0.380	0.513
8 23	Refined Petroleum Product	0.108	23	23	0.113	23		0.102	0.255	0.050	0.134
9 24	Chemicals and Chemical Products	0.318	7	3	0.441	3		0.351	0.125	0.235	0.441
10 2420	Manufacture of Pharmaceutical and Bio-Pharm. products	0.487	1	1	0.896	1		0.719	0.184	0.487	0.896
11 25	Rubber & Plastic Product	0.274	11	7	0.316	7		0.289	0.077	0.252	0.326
12 26	Non-Metallic Mineral Products	0.219	20	11	0.291	11		0.237	0.105	0.197	0.291
13 27	Basic Metals	0.256	14	14	0.273	14		0.226	0.160	0.159	0.307
14 28	Fabricated Metal Products Except Machinery \$ Equipment	0.251	17	13	0.276	13		0.266	0.046	0.248	0.290
15 29	Machinery & Equipment	0.349	6	8	0.302	8		0.304	0.100	0.261	0.363
16 30	Electric Machinery & Apparatus	0.316	8	12	0.279	12		0.287	0.082	0.249	0.340
17 31	Electronic Products & Components	0.268	12	19	0.222	19		0.223	0.101	0.193	0.268
18 3111	Manufacture of Semiconductor devices	0.276	10	17	0.245	17		0.200	0.190	0.153	0.276
19 3120	Manufacture of communications equipment	0.305	9	9	0.301	9		0.302	0.248	0.201	0.480
20 3141/9/90	Manufacture of Computing and Data Processing Equipment	0.444	2	22	0.208	22		0.262	0.324	0.176	0.444
21 32	Medical, Precision & Optical Instruments, Watches & Clocks	0.365	5	4	0.435	4		0.400	0.139	0.296	0.521
22 33	Transport Equipment	0.440	3	6	0.359	6		0.385	0.124	0.327	0.468
23 34	Other Manufacturing Industries	0.252	16	16	0.248	16		0.225	0.101	0.175	0.252
24	Total manufacturing	0.218			0.261			0.228	0.083	0.195	0.261

Sources: Data provided by the Singapore authorities; and staff estimates.

Table II.4. Relative Labor Productivity, 1980-99

Industry	Description	1980			1999			1980-1999			
		Share	Rank	Share	Rank	Share	Rank	Mean	Std	Min	Max
1 15-16	Food, Beverage & Tobacco	0.810	12	0.561	15			0.897	0.149	0.561	1.066
2 17	Textiles & Textile Manufactures	0.546	19	0.435	18			0.521	0.115	0.409	0.642
3 18	Wearing Apparel Except Footwear	0.325	23	0.226	23			0.300	0.173	0.206	0.379
4 19	Leather, Leather Products & Footwear	0.376	22	0.379	20			0.374	0.134	0.284	0.468
5 20	Wood & Wood Products Except Furniture	0.522	20	0.341	21			0.490	0.110	0.341	0.584
6 21	Paper & Paper Products	0.661	16	0.670	12			0.983	0.254	0.541	1.342
7 22	Publishing, Printing & Reproduction of Recorded Media	0.767	13	0.745	11			0.891	0.104	0.745	1.059
8 23	Refined Petroleum Product	15.570	1	4.748	2			7.963	0.487	3.951	15.570
9 24	Chemicals and Chemical Products	1.963	4	3.767	3			3.012	0.291	1.909	5.199
10 2420	<i>Manufacture of Pharmaceutical and Bio-Pharm. products</i>	4.509	2	23.224	1			9.885	0.470	4.182	23.224
11 25	Rubber & Plastic Product	0.604	17	0.404	19			0.571	0.118	0.404	0.658
12 26	Non-Metallic Mineral Products	1.298	6	0.786	10			1.147	0.234	0.673	1.506
13 27	Basic Metals	2.413	3	0.939	9			1.460	0.321	0.784	2.413
14 28	Fabricated Metal Products Except Machinery & Equipment	0.762	14	0.455	17			0.738	0.158	0.455	0.950
15 29	Machinery & Equipment	1.166	9	0.491	16			0.869	0.286	0.491	1.348
16 30	Electric Machinery & Apparatus	0.759	15	0.589	13			0.694	0.085	0.589	0.795
17 31	Electronic Products & Components	0.826	10	1.397	7			1.064	0.198	0.709	1.397
18 3111	<i>Manufacture of Semiconductor devices</i>	1.255	8	1.414	6			1.114	0.304	0.723	2.062
19 3120	<i>Manufacture of communications equipment</i>	0.825	11	2.438	4			1.252	0.512	0.556	2.547
20 3141/9/90	<i>Manufacture of Computing and Data Processing Equipment</i>	1.297	7	1.813	5			1.477	0.199	1.051	2.006
21 32	Medical, Precision & Optical Instruments, Watches & Clocks	0.555	18	1.212	8			0.831	0.224	0.555	1.212
22 33	Transport Equipment	1.357	5	0.572	14			0.988	0.279	0.572	1.357
23 34	Other Manufacturing Industries	0.514	21	0.304	22			0.446	0.142	0.304	0.560

Sources: Data provided by the Singapore authorities; and staff estimates.

Note: The index of labor productivity index is computed as the share of a sector in manufacturing value added divided by its share in manufacturing employment.

Table II.5. Relative Capital-Labor Ratio, 1980-99

Industry	Description	1980			1999			1980-1999			
		Share	Rank	Share	Rank	Mean	Std	Min	Max		
1 15-16	Food, Beverage & Tobacco	1.163	6	0.884	9	1.216	0.114	0.884	1.445		
2 17	Textiles & Textile Manufactures	0.967	9	0.497	18	0.720	0.165	0.497	0.967		
3 18	Wearing Apparel Except Footwear	0.190	23	0.168	23	0.182	0.129	0.151	0.229		
4 19	Leather, Leather Products & Footwear	0.417	19	0.286	22	0.337	0.179	0.248	0.430		
5 20	Wood & Wood Products Except Furniture	0.836	11	0.383	21	0.749	0.228	0.383	0.957		
6 21	Paper & Paper Products	0.763	12	0.906	8	1.141	0.157	0.763	1.411		
7 22	Publishing, Printing & Reproduction of Recorded Media	0.569	16	0.631	11	0.637	0.079	0.553	0.714		
8 23	Refined Petroleum Product	25.442	1	13.719	1	18.430	0.180	13.719	25.442		
9 24	Chemicals and Chemical Products	1.689	4	4.233	2	3.438	0.298	1.689	4.409		
10 2420	Manufacture of Pharmaceutical and Bio-Pharm. products	2.170	2	2.758	3	2.660	0.153	1.840	3.642		
11 25	Rubber & Plastic Product	0.699	13	0.509	16	0.660	0.122	0.509	0.807		
12 26	Non-Metallic Mineral Products	1.545	5	1.216	6	1.391	0.098	1.186	1.617		
13 27	Basic Metals	1.972	3	1.588	5	1.966	0.133	1.438	2.275		
14 28	Fabricated Metal Products Except Machinery & Equipment	0.937	10	0.519	14	0.785	0.156	0.519	0.944		
15 29	Machinery & Equipment	1.044	8	0.566	13	0.876	0.161	0.566	1.044		
16 30	Electric Machinery & Apparatus	0.627	15	0.768	10	0.697	0.092	0.604	0.791		
17 31	Electronic Products & Components	0.393	22	0.985	7	0.620	0.293	0.393	0.985		
18 3111	Manufacture of Semiconductor devices	0.498	17	2.355	4	1.269	0.486	0.498	2.355		
19 3120	Manufacture of communications equipment	0.403	21	0.513	15	0.478	0.265	0.195	0.801		
20 3141/9/90	Manufacture of Computing and Data Processing Equipment	0.410	20	0.501	17	0.435	0.157	0.300	0.585		
21 32	Medical, Precision & Optical Instruments, Watches & Clocks	0.666	14	0.614	12	0.656	0.096	0.562	0.760		
22 33	Transport Equipment	1.140	7	0.456	19	0.904	0.261	0.456	1.190		
23 34	Other Manufacturing Industries	0.425	18	0.390	20	0.450	0.129	0.367	0.593		

Sources: Data provided by the Singapore authorities; and staff estimates.

Note: The index of capital/labor ratio is computed as the share of a sector in manufacturing capital stock divided by its share in manufacturing employment.

Table II.6. Sectoral Shares in Manufacturing Exports, 1980-99

	Industry	Description	1980		1999		1980-1999				
			Share	Rank	Share	Rank	Mean	Std	Min	Max	
1	15-16	Food, Beverage & Tobacco	0.049	6	0.016	12	0.037	0.373	0.016	0.063	
2	17	Textiles & Textile Manufactures	0.011	16	0.001	22	0.004	0.764	0.001	0.011	
3	18	Wearing Apparel Except Footwear	0.032	7	0.008	15	0.025	0.446	0.008	0.043	
4	19	Leather, Leather Products & Footwear	0.002	23	0.001	20	0.001	0.420	0.001	0.002	
5	20	Wood & Wood Products Except Furniture	0.021	9	0.001	23	0.006	0.997	0.001	0.021	
6	21	Paper & Paper Products	0.002	22	0.004	18	0.005	0.341	0.002	0.008	
7	22	Publishing, Printing & Reproduction of Recorded Media	0.005	20	0.008	16	0.008	0.253	0.005	0.011	
8	23	Refined Petroleum Product	0.397	1	0.043	7	0.187	0.804	0.029	0.430	
9	24	Chemicals and Chemical Products	0.028	8	0.131	3	0.067	0.396	0.025	0.131	
10	2420	Manufacture of Pharmaceutical and Bio-Pharm. products	0.013	15	0.068	5	0.024	0.491	0.012	0.068	
11	25	Rubber & Plastic Product	0.009	18	0.010	14	0.008	0.119	0.007	0.010	
12	26	Non-Metallic Mineral Products	0.007	19	0.004	17	0.005	0.508	0.002	0.010	
13	27	Basic Metals	0.011	17	0.001	21	0.005	0.544	0.001	0.011	
14	28	Fabricated Metal Products Except Machinery & Equipment	0.016	14	0.023	11	0.020	0.185	0.016	0.027	
15	29	Machinery & Equipment	0.066	4	0.044	6	0.061	0.221	0.044	0.089	
16	30	Electric Machinery & Apparatus	0.020	10	0.015	13	0.022	0.140	0.015	0.027	
17	31	Electronic Products & Components	0.237	2	0.622	1	0.462	0.359	0.209	0.654	
18	3111	Manufacture of Semiconductor devices	0.095	3	0.116	4	0.088	0.138	0.065	0.116	
19	3120	Manufacture of communications equipment	0.002	21	0.034	9	0.019	0.627	0.002	0.035	
20	3141/990	Manufacture of Computing and Data Processing Equipment	0.018	11	0.401	2	0.226	0.712	0.018	0.437	
21	32	Medical, Precision & Optical Instruments, Watches & Clocks	0.018	12	0.026	10	0.017	0.226	0.011	0.026	
22	33	Transport Equipment	0.051	5	0.038	8	0.045	0.147	0.034	0.058	
23	34	Other Manufacturing Industries	0.017	13	0.003	19	0.014	0.376	0.003	0.022	

Sources: Data provided by the Singapore authorities; and staff estimates.

Table II.7. Export Share in Output, 1980-99

Industry	Description	1980		1999		1980-1999			
		Share	Rank	Share	Rank	Mean	Std	Min	Max
1 15-16	Food, Beverage & Tobacco	0.455	15	0.407	13	0.472	0.074	0.407	0.548
2 17	Textiles & Textile Manufactures	0.473	13	0.392	14	0.401	0.108	0.343	0.483
3 18	Wearing Apparel Except Footwear	0.717	7	0.855	3	0.784	0.068	0.692	0.859
4 19	Leather, Leather Products & Footwear	0.389	18	0.726	8	0.381	0.334	0.254	0.726
5 20	Wood & Wood Products Except Furniture	0.544	11	0.292	18	0.426	0.246	0.230	0.544
6 21	Paper & Paper Products	0.138	23	0.369	15	0.325	0.263	0.138	0.412
7 22	Publishing, Printing & Reproduction of Recorded Media	0.177	22	0.249	21	0.204	0.183	0.145	0.255
8 23	Refined Petroleum Product	0.663	9	0.270	19	0.482	0.389	0.185	0.666
9 24	Chemicals and Chemical Products	0.565	10	0.804	5	0.665	0.103	0.529	0.804
10 2420	<i>Manufacture of Pharmaceutical and Bio-Pharm. products</i>	0.905	2	1.185	1	0.975	0.082	0.818	1.185
11 25	Rubber & Plastic Product	0.275	19	0.328	16	0.251	0.129	0.206	0.328
12 26	Non-Metallic Mineral Products	0.206	21	0.186	23	0.132	0.312	0.074	0.206
13 27	Basic Metals	0.411	17	0.192	22	0.296	0.222	0.192	0.411
14 28	Fabricated Metal Products Except Machinery & Equipment	0.257	20	0.310	17	0.261	0.081	0.229	0.310
15 29	Machinery & Equipment	0.681	8	0.619	10	0.648	0.105	0.496	0.812
16 30	Electric Machinery & Apparatus	0.526	12	0.550	12	0.543	0.050	0.490	0.595
17 31	Electronic Products & Components	0.856	5	0.773	7	0.840	0.056	0.765	0.926
18 3111	<i>Manufacture of Semiconductor devices</i>	0.880	4	0.689	9	0.850	0.153	0.619	1.053
19 3120	<i>Manufacture of communications equipment</i>	0.738	6	0.798	6	0.860	0.126	0.641	0.981
20 3141/9/90	<i>Manufacture of Computing and Data Processing Equipment</i>	0.929	1	0.832	4	0.887	0.047	0.799	0.930
21 32	Medical, Precision & Optical Instruments, Watches & Clocks	0.881	3	0.905	2	0.907	0.031	0.850	0.966
22 33	Transport Equipment	0.472	14	0.562	11	0.554	0.122	0.447	0.680
23 34	Other Manufacturing Industries	0.422	16	0.265	20	0.441	0.177	0.265	0.553
24	Total Manufacturing	0.606		0.639		0.622	0.036	0.599	0.669

Sources: Data provided by the Singapore authorities; and staff estimates.

III. SINGAPORE'S FINANCIAL SECTOR: KEY RECENT DEVELOPMENTS AND REFORMS ¹

A. Introduction

1. In early 1998, recognizing that the financial sector was undergoing rapid change in an increasingly global environment, the Singapore authorities unveiled a program of comprehensive reforms aimed at making Singapore a predominant financial center.² The overarching objective of the reforms were to overcome the disadvantage of the small size of the domestic market in Singapore and to compensate for the lack of a natural hinterland unlike other Asian financial centers such as Hong Kong and Tokyo. The strategy involved an active role for the government in promoting the industry, including through tax and other incentives, and reforms of the regulatory environment in a manner that maintained a robust financial system while at the same time encouraging innovation.

2. The reform program is comprehensive but gradual. It covers all segments of the financial sector, comprising traditional banking activities, the fund management industry, the bond market, equity markets, the insurance sector, the overall regulatory environment. To ensure smooth transition under this extensive reform, the implementation is being phased in gradually. Important changes have also taken place in the long-standing policy of not encouraging the internationalization of the Singapore dollar (see Chapter IV of this paper for a fuller discussion of this issue).

3. The main aim of this paper is to provide an update on the reforms implemented over the past year and to outline the remaining tasks and priorities. The rest of the paper is organized as follows: Section B covers reforms and recent developments in the bond market in Singapore; Section C contains a discussion of reforms of the banking system, including regulatory changes; Section D contains discussion of the fund management industry; Section E outlines key changes affecting other key segments on the financial sector; and Section F concludes.

B. The Bond Market

4. The efforts to develop the debt market have been proven timely by the experience of the Asian crisis which exposed the structural weaknesses that could arise from over dependence on the banking system for financial intermediation. Significant growth has also taken place in bond markets across Asia thus helping these countries reduce their reliance on short-term foreign capital inflows.

¹ Prepared by Kalpana Kochhar (x38770) and Yutaka Nishigaki (x37368), who are available to answer questions.

² A detailed discussion of the evolution of Singapore's financial system is contained in *Singapore: Selected Issues*, SM/00/96, May 2000.

5. During the last consultation discussions, several areas were identified as priorities for future reforms of debt markets in Singapore. These included: (i) regulatory treatment of repos that constrained the development of the repo market—seen as one of the key building blocks of a vibrant debt market; (ii) underdeveloped markets for hedging products; (iii) inadequate liquidity in the swap market, where activity tends to be dominated by the needs of nonresident issuers of S\$ bonds to swap the bond proceeds into foreign exchange for use outside Singapore; (iv) accounting regulations that discourage secondary trading of SGS; and (v) reforms to banks' liquidity management frameworks to relieve them of the requirement to hold 18 percent of liabilities in liquid assets, of which 10 percent is to be held as Singapore Government Securities (SGS).³

6. A key prong of the strategy to develop the bond market in Singapore was to encourage domestic issuers to fund themselves in the domestic bond market. Statutory boards (public sector organizations) have been at the forefront of domestic issuance activity. The second prong was to encourage the entrance of foreign issuers to the market.

7. Many important initiatives have recently been taken to ensure that these objectives are met.

- With the aim of building large and liquid benchmark issues, the authorities announced in May 2000, that the size of the benchmark issue would be raised from S\$1.5 billion to at least S\$2–2.5 billion.
- In November 2000, the Monetary Authority of Singapore (MAS) carried out its first repurchase of SGS aimed at re-channeling liquidity from off-the-run issues into larger and more liquid benchmark bonds.
- When the SGS issuance schedule for 2001 was announced late last year, the MAS announced the planned issuance of a 15-year bond in September 2001, with the aim of extending the benchmark yield curve beyond the current 10-year maturity.
- Further steps were taken in December 2000 to boost the bond market by liberalizing the access to Singapore dollar credit to nonresidents.⁴ Specifically, banks are now allowed to lend to nonresidents in any amount, if the proceeds of such borrowing are

³ The authorities are currently conducting a comprehensive review of the minimum liquid asset requirement focusing on liquidity risk management in the banking system. The review is not aimed at debt market development per se, although reforms of the liquidity management system will likely impact debt markets.

⁴ A more detailed discussion of the policy of not encouraging the internationalization of the Singapore dollar is covered in Chapter IV of this volume.

to be used for investment in Singapore dollar assets. If the underlying position is sold, the funds are to be repaid in Singapore dollars. Funds not utilized in Singapore must still be swapped into foreign currency.

- From March 2001, banks are no longer required to set aside reserves for S\$ swap transactions that are of less than one-year maturity. Also, cross-currency swap transactions undertaken by banks for the purpose of swapping out debt issued by nonresidents do not require capital to be set aside against the position.
- Previously, an offshore bank was allowed to receive S\$ funds from any non-bank resident of Singapore pursuant to a currency swap only where the funds were not less than \$250,000 and were raised through S\$ bond issue managed by the bank. In March 2001, offshore licensed banks in Singapore were allowed to accept S\$ funds of any amount from non-bank residents through swap transactions, whether or not the swap transaction is pursuant to a bond issue, thus enlarging the number of bank participants in the S\$ swap market.
- As for boosting the repo market, key steps were taken in May 2000 aimed at generating secondary market trading activity. These included the announcement that all SGS obtained as a result of a repo transaction will be counted toward satisfying the minimum liquid asset (MLA) ratio, regardless of the tenure and the counterparty. This compares to the previous policy whereby only overnight borrowings of SGS were allowed to be counted towards the MLA ratio.
- To provide players with hedging mechanisms to manage their risk, SGX will be launching a SGS Bond Futures contract on June 29, 2001.
- A number of tax incentives were also provided to boost the bond market. There is no capital gains tax in Singapore, but interest on bonds was subject to withholding taxes at a rate of 15 percent. In 1998, tax exemptions began to be granted on interest earned by nonresidents from Qualifying Debt Securities (QDS).⁵ In the 1999 budget, this tax exemption was extended to nonresidents who have permanent establishments in Singapore.⁶ Primary dealers in the Singapore bond market are exempted from paying tax on any profits derived from trading in the bond market until February 2003 and financial institutions in Singapore that arrange, underwrite and distribute QDS are exempt from tax on their fee income. Finally to develop the local swap market, the 2000 budget announced that profits derived from swaps trading would be taxed at the concessionary rate of 10 percent.

⁵ QDS are defined by the MAS as debt securities that are substantially arranged by financial institutions in Singapore.

⁶ Income derived from the Singapore establishment itself would not be exempted from tax.

- The approved bond intermediary (ABI) scheme was introduced in February 1999. Under this scheme, the MAS will evaluate a financial institution's debt origination and trading capabilities in Singapore on an overall basis. Deals arranged by financial institutions granted ABI status would be regarded as "substantially arranged" in Singapore, and would qualify for tax incentives for interest and fee income from holding, arranging, underwriting and distributing QDS.

8. Results to date have surpassed most expectations and, although the concept is difficult to define precisely, critical mass appears to have been achieved in the bond market. From 1999 to 2000, the amount of corporate issuance increased by 57 percent from S\$9.2 billion to S\$14.4 billion for S\$ denominated debts, and by 250 percent from S\$10.3 billion to S\$36.1 billion for non-S\$ denominated debts. Moreover, the composition of issuer and maturity has been diverse for both S\$ and non-S\$ denominated debts (Table III.1 and Figure III.1). In addition, the SGS was recently included in the JP Morgan Government Bond Index Broad (Box III.1), suggesting the possibility of greater demand in the period ahead.

Table III.1. Corporate Debt Market, 2000 (in S\$ billion)		
	Denominated In S\$	Denominated in Other Currencies
Total issuance	14.4	36.1
Issuer Type		
Financial Institutions	0.4	1.8
Non-FI Corporates	11.4	33.2
Non-residents	2.6	1.1
Maturity of Issue		
Less than 1 year	2.3	30.6
1-9 years	9.6	4.3
10 years and longer	2.5	1.2
Outstanding Stock	34.0	15.5
Source: Data provided by the Singapore authorities.		

C. The Banking System

Liberalization and Consolidation

9. The major objectives of the banking system reform are two-fold: first, to continue to gradually open domestic banks to greater competition from foreign banks, and second, for Singapore banks to retain significant domestic market share in this more open environment as well as to become significant participants in the regional market. The latter objective is seen as critical to the ultimate survival of Singapore banks, because the domestic base is not large enough to support the growth of banks. The authorities have clearly stated that they see the process of mergers and consolidation of the local banks as inevitable, but that they do not intend to force the process. Rather they see it happening through competitive pressures in the market. Banks will have to make their own decision whether to consolidate, although the pressure on banks to consolidate and rationalise will grow. Alternatively, banks can choose to become niche players in specific segments.

**Box III.1. Inclusion of Singapore Government Securities
in the J.P. Morgan Government Bond Index¹**

J.P. Morgan Government Bond Indices are tools for measuring performance and quantifying risk across international fixed income markets. The index for developed country government debt markets is the Government Bond Index Global (GBI) that comprises government bonds from G-7 countries, Spain, Netherlands, Belgium, Denmark, Sweden, and Australia. The GBI Broad includes, in addition, government bonds of Finland, Ireland, New Zealand, Portugal, South Africa, Switzerland, and Austria.

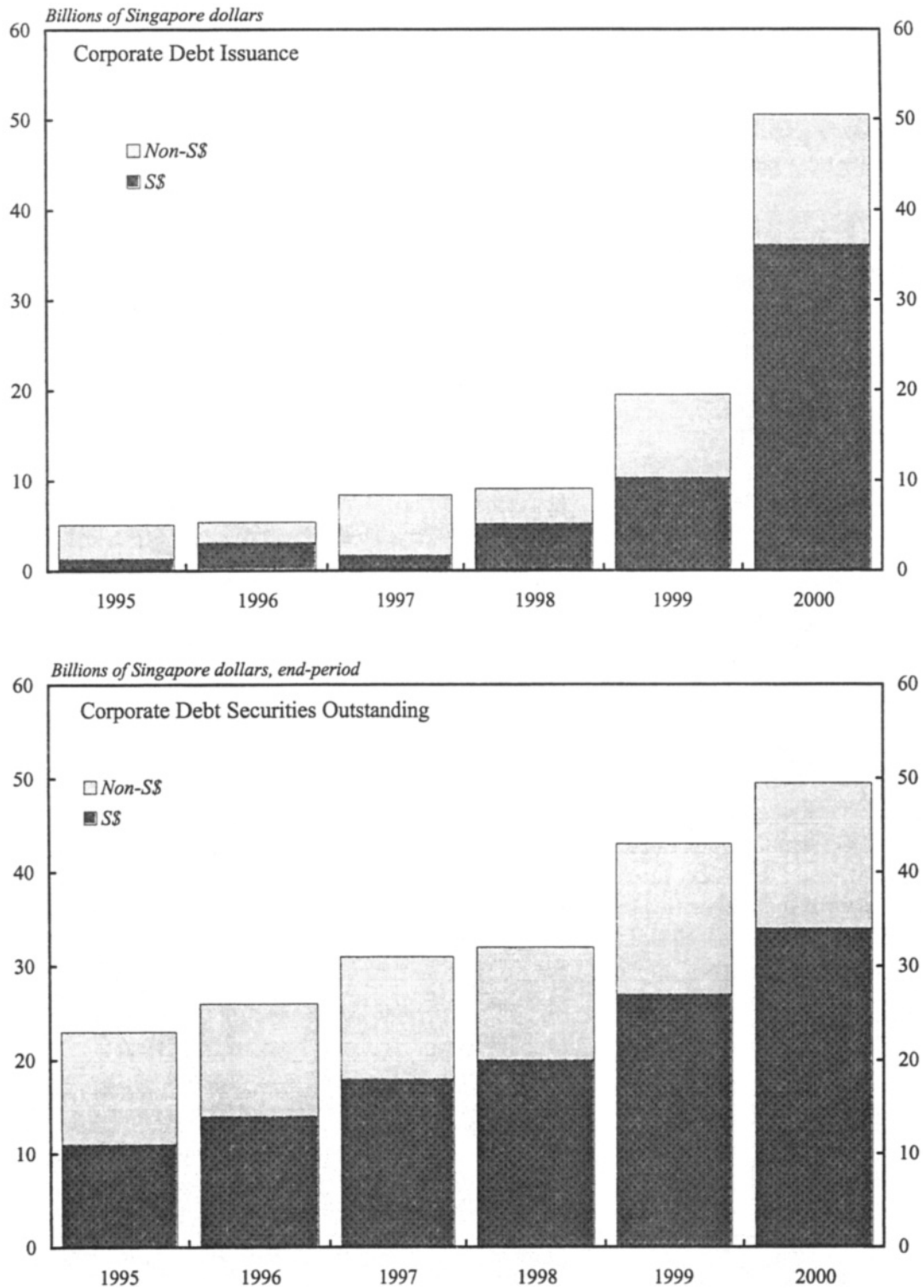
As the Singapore Government Securities (SGS) market expanded over the past few years, Singapore was added to J.P. Morgan's government bond index product line in November 2000, and included in the GBI Broad in April 2001 with estimated weight of 1/3 percent.

The SGS offer low yields—lower than the US Treasury bonds—but become an attractive instrument for portfolio diversification owing to the following covariance properties which help to expand the efficient portfolio frontier for bonds. The returns on the SGS have low cross correlations with returns from most other government bonds included in prototype investment portfolios. The very low volatility of returns in the SGS yields risk-adjusted returns that are higher than those from the UK and Japanese government bonds.

The MAS is also being proactive in promoting the SGS to international investors. The recent “nondeal” roadshow in London, Tokyo, New York and Boston, in which the authorities outlined their plans to issue a 15-year bond and bond futures, was well received. Also, the recently launched SGS web page provides a one-stop location which carries comprehensive information on the SGS market, including the issuance calendar, market statistics, relevant legislation, FAQs, and information on SGS primary dealers.

¹ This box draws on the following publications from J.P. Morgan, “*J.P. Morgan Government Bond Indices*,” September 30, 1997; “*Introducing the Singapore Government Bond Index*,” November 27, 2000; and “*Announcing the inclusion of Singapore in GBI Broad*” March 22, 2001.

Figure III.1. Singapore: Corporate Bond Market, 1995-2000



Source: Data provided by Singapore authorities.

10. In May 1999, MAS announced a five-year program to liberalize the domestic banking market. The first phase of the banking liberalization program included new banking privileges and licenses for foreign banks granted over the period 1999–2001 and was aimed at increasing foreign bank participation and competition in the retail and the wholesale banking sectors. MAS is currently reviewing the experience with banking sector liberalization thus far and will decide on the next package of measures within 2001. Early indications are that the authorities may consider a more liberal definition of QFB privileges when the next phase is implemented.

11. The new privileges and licenses under the 1999 banking liberalization program comprise Qualifying Full Bank (QFB) privileges for up to six foreign banks, of which four QFB licenses were awarded in October 1999 and two more are expected to be issued in 2001. Banks with QFB privileges are allowed (i) up to ten locations (branches and ATMs) of which up to five can be branches. However, the actual setting up of branches or ATMs are to be phased over more than one year following the issue of the QFB privileges; (ii) existing branches can be freely relocated; and (iii) QFBs can share ATMs amongst each other, but not with the domestic banks.

12. As for the wholesale banking sector, the number of restricted bank licenses were increased from 13 in 1999 to 20 in 2000; and offshore licensed banks were allowed higher S\$ lending limits of S\$500 million (increased from S\$300 million) and greater leeway to engage in S\$ swaps. In particular, eight offshore banks were given Qualifying Offshore Bank (QOB) privileges which allowed them to increase lending in S\$ to S\$1 billion from S\$300 million. QOBs will also be allowed to accept Singapore dollar funds from nonbank customers through swap transactions.

13. Also in 1999, MAS lifted the 40 percent foreign shareholding limit for Singapore-incorporated banks and introduced an intermediate level of 12 percent of shareholdings as a new threshold requiring MAS' approval. MAS' approval is still required before a single shareholder can increase his/her shareholdings in a local bank above the already existing 5 percent, and 20 percent thresholds. This new threshold of 12 percent gives greater flexibility for the authorities to allow strategic partners and large institutional investors to cross the 5 percent shareholding level while retaining a way to check the growth of these shareholding before they approach the limit of 20 percent.

Regulatory Reforms

14. In addition to introducing greater competition, the reforms are aimed at making the regulatory and supervisory regime more progressive and clearly benchmarked to international best practice. The first of these changes is the revision to the capital adequacy framework. From September 2000, the minimum Tier 1 capital adequacy ratio (CAR) was lowered from 10 percent to 8 percent, while the total CAR was maintained at 12 percent. Furthermore, the definition of Tier 1 capital has been expanded to include innovative capital instruments with strong equity-like features up to 15 percent of Tier 1 capital. These changes will allow banks greater flexibility in their capital management. In line with the move away

from a “one-size-fits-all” approach to one that is risk-focused and institution specific, MAS may, on the basis of its supervision of banks, require individual banks to maintain higher capital than the regulatory minimum when necessary.

15. Also, the authorities have announced that there will be a lower minimum paid-up capital requirement of S\$100 million for banking subsidiaries of Singapore-incorporated banks, which have themselves met the S\$1½ billion requirement. This would allow the setting up of Internet-only banks and other entities with new business models.

16. The second major change in the regulatory structure is the requirement that banks separate their financial and nonfinancial activities and to unwind cross-shareholdings. These changes are aimed at limiting the risks of contagion to banks from nonbanking activities, enhance market discipline, increase transparency and ensure that bank management focuses on the core business of banking and finance. Specifically, banks are required to group financial activities either under the bank itself or under a financial holding company structure. Nonfinancial activities must be segregated from the banking group and divested. The management of the financial entities and non-financial affiliates should be separate, and there should be no name-sharing. Although banks would not be allowed to actively undertake nonfinancial activities, they would be allowed to purchase noncontrolling stakes (10 percent or less) in the share capital of any company.

17. Since these changes will require local banks to undertake significant corporate restructuring, they will have a three-year grace period from the time the amendment to the Banking Act takes effect to comply with the new regulations.

18. As for key results to date, new QFBs have made use of the new privileges to relocate existing branches, and some have expanded their branch and ATM networks. However, foreign institutions’ share of domestic deposits and assets remain unchanged. Domestic banks have stepped up their efforts to extend their reach outside the region. Most recently, DBS has acquired a Hong Kong bank (Dao Heng Bank) and has issued capital for this purpose with great success. Also, moves are underway between the other domestic banks to consolidate through mergers and acquisitions.

D. The Fund Management Industry

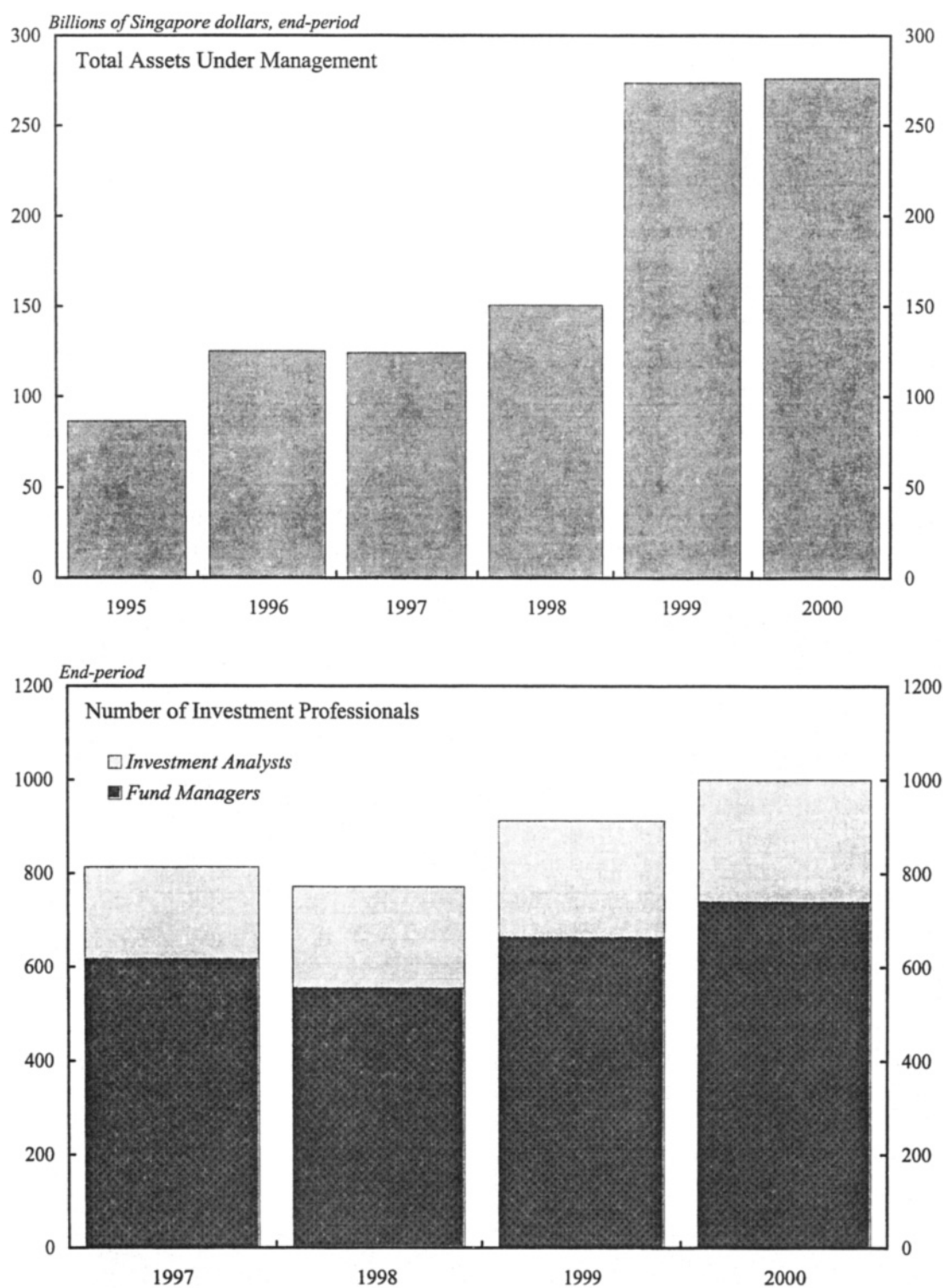
19. A vibrant fund management industry is essential to broadening the investor base for Singapore capital market, and was appropriately identified as one of the key areas for development by a strategic review of Singapore’s financial sector undertaken in 1998. Several measures have since been undertaken to develop the industry.

- In 1998, the MAS and the GIC announced plans to farm out part of their funds—S\$10 billion and S\$25 billion respectively—to external fund managers. About 40 percent of those funds have been placed so far with domestic and foreign fund managers, and the remainder will continue to be disbursed to qualified fund managers.

- The CPF Investment Scheme was expanded to free up a larger amount of CPF funds for investment in specified instruments. CPF members will be allowed to invest all their balances in Special Account (SA) and Ordinary Account (OA) in approved retirement-related financial instruments, thereby raising the CPF funds available for investment from the current S\$24 billion to S\$65 billion. Allowed investment instrument include—though with some finer differences for SA and OA savings—fixed deposits in approved banks; government bond or statutory board bonds; government-guaranteed bonds; non-investment linked insurance products (endowment policies and deferred annuities); selected unit trusts, and; selected investment-linked insurance products. The limit on CPF members' investments in individual stocks has been lowered from 50 to 35 percent of investible OA savings.
- The MAS proposed to introduce a new modular licensing framework, to be implemented under the proposed Securities and Futures Act. MAS hopes to have the Act enacted by the second half of 2001. Under the new framework, market participants such as underwriters and fund managers, will only need to obtain a single license to provide a range of financial activities in the securities and futures market. By allowing market participants to obtain a single license, this modular licensing framework is expected to provide a more flexible and integrated regulatory framework, and to stimulate the development of more innovative products and the participation of more market players.
- Being key institutional players on the demand side of the capital markets, fund managers are expected to add to the diverse range of groups with an interest in SGX's business. Reflecting this capacity of fund managers, the MAS will generally allow fund managers who invest customer funds to hold the SGX shares beyond the 5 percent limit up to 10 percent with prior approval.
- The MAS is also focusing on educating the public to develop the fund management industry further. The Financial Sector Development Fund (FSDF) was set up to facilitate the development and enhancement of talent and other infrastructure for Singapore's financial sector. The FSDF supports three types of manpower development schemes: Executive Development Scheme, Global Enrichment Initiative, and Training Infrastructure Enhancement Scheme.

20. Under the supportive policy environment, the fund management industry has grown at a remarkable pace. In 1999, total assets under management grew by 82 percent to S\$273 billion at end-1999 from S\$151 billion at end-1998, and increased ten-fold from about S\$20 billion in 1990. The number of large fund managers who manage over S\$5 billion has also grown from three in the early 1990s to eleven in 1999. Despite difficult market conditions in 2000, the industry remained resilient and total assets under management in Singapore continued to increase to S\$276 billion at end-2000 of which some S\$166 billion were discretionary assets and S\$110 billion were nondiscretionary assets (Figure III.2 and Table III.2).

Figure III.2. Singapore: Fund Management Industry, 1995-2000



Source: Data provided by Singapore authorities.

Table III.2. Unit Trusts and Assets Under Management (AUM)

	As at end-1999		As at end-2000			
	Number	AUM (S\$ mil.)	Number		AUM (S\$ mil.)	
Unit Trust included under CPFIS	64	3,252	105	(64.1)	4,705	(44.7)
Unit Trusts not included under CPFIS	123	3,549	160	(30.1)	3,138	(-11.6)
Total	187	6,801	265	(41.7)	7,843	(15.3)

Source: Data provided by the Singapore authorities.

E. Other Segments of the Financial Sector

Equity Market

21. To support the continued growth of Singapore as an international financial center, the Singapore Exchange (SGX) aims at providing world-class capital markets infrastructure that mediate a free flow of capital across markets. This infrastructure will provide a variety of instruments, and serve both issuers and investors across time zones. More specific targets are: to bolster the Singapore-based business; to develop the business across borders through strategic alliances; and to extend the business portfolio to diversify the earnings mix.

- The Stock Exchange of Singapore (SES) and Singapore International Monetary Exchange (SIMEX) were demutualized and merged into SGX in December 1999, to create a more vibrant exchange and to exploit synergies between securities and derivatives markets.
- Alliances and cooperation with other exchanges have been expanded. In May 2000, SGX announced a joint venture with the American Stock Exchange to offer a series of exchange traded funds to investors across Asia. In June 2000, the SGX entered an agreement with the Australian Stock Exchange to create a cross-trading link for selected Singaporean and Australian listed equities, allowing investors mutual access to both markets. This link is expected to be active by end-2001. On the derivatives front, the GLOBEX Alliance, of which SGX is a member, extended its reach by having Spain's Futures and Options Exchange as the sixth international partner in September 2000. SGX has also created an alliance with the National Stock Exchange of India Limited (NSE) and the India Index Services and Products Limited (IISL) for cooperation in areas relating to derivatives trading, market-information sharing, staff training and technical assistance.

- Existing securities and futures legislation in Singapore is being rationalised, consolidated and updated through MAS' proposed Securities and Futures Act (SFA). The impetus for the SFA is the introduction of some major policy reforms which would require a substantial rewriting the laws. These reforms include the revamp of the existing licensing framework, a redefinition of the scope of regulated activities, the importation of corporate fund-raising provisions and unit trust provisions from the Companies Act, and improvements in market enforcement. Further, with the merger of the SES and SIMEX into the SGX, there is a parallel need to consolidate and rationalize securities and futures legislation. Provisions in the Companies Act that relate to capital-raising by companies, as well as those governing unit trusts, will be migrated to the SFA to form a consolidated legislation.
- The brokerage commission rates for SGX members were liberalized gradually, starting in January 2000, and culminating in the full liberalization in October 2000. Since then the commission rates have fallen significantly to average 40–50 bp for retail traders and 20 bp for institutional traders.
- The trading and settlement system is being upgraded. In line with international best practice, the SGX shortened the settlement period to T+3 from T+5 in March 2000. The SGX has also embarked on a program to implement straight-through processing for stock trades by end-2002. In April 2001, the SGX launched SGXAccess, an open connectivity platform for the SGX securities market, aimed at enhancing access to its marketplace, and giving its members the flexibility to employ their order management system of choice.

Insurance

22. The insurance industry was liberalized on the understanding that a more competitive insurance market is necessary to raise industry standards to the international best practice and place Singapore as a leading regional center for insurance services. In early 2000, the authorities announced an open-door policy on direct insurers and insurance brokers, and lifted aggregate foreign ownership limit on local direct insurers. The existing open policy admission to the reinsurance and captive insurance remains unchanged.

23. To improve the quality and efficiency of distribution, three broad strategies are being pursued. To lower cost and improve service, insurers are encouraged to adopt alternative distribution channels, including direct marketing, and the internet and tele marketing. To raise the professionalism of the agency system, the authorities are reviewing measures to encourage the growth of intermediaries that are qualified to provide a broader range of financial products. Finally, international best practice standards are recommended in the area of product and expense disclosure.

24. MAS is reviewing strategies to improve the risk responsiveness of the regulatory and supervisory regimes. Under consideration are risk-based capital models to determine the minimum capital that each life and general insurance company must maintain, as well as a risk-based supervisory approach in the inspection of insurance companies that will focus on areas of significant risk to each company.

F. Corporate Governance Reforms

25. In December 1999, the Ministry of Finance, together with the MAS and the Attorney-General's Chambers, set up three private sector-led committees to review the corporate regulatory framework, disclosure standards and corporate governance in Singapore. Three committees are: the corporate governance committee, the disclosure and accounting standards committee, and the company legislation and regulatory framework committee.

26. The corporate governance committee produced the code of corporate governance, which was accepted by the government in April 2001. The code will prescribe a set of corporate governance guidelines for listed companies in Singapore. The disclosure and accounting standards committee is soliciting public comments on its second consultation paper. The company legislation and regulatory framework committee has been given the mandate to recommend revisions to the Companies Act, which can be accomplished only after the other two committees complete their activity and finalize the recommendations. In a related development, regulation on insider trading has been strengthened. The introduction of civil penalty regime for insider trading in March 2000 to complement the existing criminal regime has given MAS the power to undertake civil actions against insider trading. It also provides for contemporaneous investors to file a civil claim against a person who has engaged in insider trading. MAS has further proposed to tighten its insider trading laws, including a shift from current person-connected approach to an information-connected approach. MAS has also proposed to extend the civil penalty and civil claim regime to other forms of market misconduct such as market manipulation, the dissemination of false or misleading information and the employment of fraud or deceit in dealing.

G. Concluding Remarks

27. Steady liberalization of the financial sector in recent years has brought about a sea-change in Singapore's financial sector, and the landscape has now come close to the vision set out in early 1998. The institutional environment is already at par with the international best practice in most areas, and continues to be reviewed and upgraded. Activity has also picked up sharply in a number of segments including the bond market and asset management industry.

28. Challenges ahead are continued growth in the capital market and improved efficiency and international competitiveness in the banking sector, while completing the transformation of the supervisory framework to a more progressive risk-based regime. The forthcoming FSAP (planned for late 2001/early 2002) will contribute to assessing the progress so far and planning for future development of the financial sector.

IV. EVOLUTION OF THE POLICY ON NONINTERNATIONALIZATION OF THE SINGAPORE DOLLAR¹

A. Introduction

1. Singapore has long maintained several restrictions against the international use of its currency, generally referred to as the policy of “not encouraging the internationalization of the Singapore dollar.” The policy has been liberalized in stages since the late 1990s, and the most recent and significant liberalization was announced in December 2000. Even before the recent liberalization, the policy posed few impediments to international trade and capital flows, for the policy was intended not to inhibit free flow of bona fide capital but to limit speculative activities in Singapore’s financial markets. However, the effect of this policy on protecting the Singapore dollar from speculative attacks is difficult to assess, as it cannot be disentangled from the impact of the solid policy track record and credibility. This note traces the evolution of this policy since the 1980s and assesses its effect on Singapore’s integration with the international financial market.

B. The Early Years: Notice 621

Access to the Singapore dollar is restricted for both residents and nonresidents.

2. The noninternationalization policy took root in the early 1980s. After lifting all exchange controls in the late 1970s, in line with efforts to develop offshore financial markets in Singapore, the Monetary Authority of Singapore (MAS) took the position that it would not encourage the internationalization of the Singapore dollar beyond the need to support bona-fide economic transactions. This position of the authorities was well stated in a parliamentary statement by the Minister of Finance in 1980.

The Singapore dollar has traditionally been used to finance some of our entrepôt and regional trade. There are no restrictions on the use, or international use, if you like, of our currency for this purpose. At the same time, there has also been no official encouragement for the wider use of our currency. It is not my intention to accelerate such use. If by “internationalization,” the Honourable Member means also the use of the Singapore dollar as a reserve currency, I have to say that like many more developed countries, such as Germany and Japan, this will not be welcomed.

3. The policy was codified into MAS Notice 621 in November 1983, which reads:

Banks should observe the Authority’s policy discouraging the internationalization of the Singapore dollar. Specifically, banks should consult with the

¹ Prepared by Jaewoo Lee (x37331) who is available to answer questions.

Authority before considering Singapore dollar credit facilities exceeding S\$5 million to nonresidents, or to residents where the Singapore dollars are to be used outside Singapore.²

The Notice allowed banks to freely extend credit facilities to nonresidents up to S\$5 million, and required prior consultation for credit facilities exceeding S\$5 million, without expressly prohibiting such transactions. The same consultation limit also applied to credit facilities to residents wishing to use the S\$ proceeds overseas.

4. A major amendment was made to MAS Notice 621 in 1992. The consultation requirement was lifted for the extension of S\$ credit facilities of any amount, where the S\$ funds are used for the following activities that are closely tied to economic activities in Singapore.

- Direct exports from and imports into Singapore
- Forward sales of Singapore dollars to hedge receipts from exports to Singapore
- Bond issuance for economic activities in Singapore in favor of Singapore parties
- Guarantee of payments arising from construction or other economic activities in Singapore including guarantee for tax payments.

5. Banks were required to continue to consult with MAS on the extension of credit facilities exceeding S\$5 million to nonresidents for purposes other than those listed above, or to residents for use outside Singapore. The intention was to limit the availability of S\$ credits for speculative activities by nonresidents or for activities outside Singapore, which MAS stated in the Notice as:

We have no wish to facilitate external speculative activities in our financial or property markets by allowing credit facilities in Singapore dollars, for whatever amounts, to be extended to nonresidents. Banks must also not finance in Singapore dollars, activities which have no bearing on Singapore, e.g. third country trade or activities outside Singapore.

² For the purpose of this regulation, residents and nonresidents include bank and nonbank customers. Nonresidents include Singapore-incorporated companies, which are majority-owned or otherwise controlled by nonresidents. Residents include Singapore citizens and permanent residents in Singapore.

C. The New Era: Notice 757

All restrictions on residents lifted; several restrictions on nonresidents also lifted.

6. The regime under Notice 621 continued to serve the Singapore economy through the most of the 1980s and 1990s, until the recent wave of liberalization was launched in August 1998, together with the extensive program of financial sector liberalization. Concluding a review of the noninternationalization policy as part of the review of measures to develop the financial sector, MAS stated:

We concluded that the basic policy remains sound. However, some judicious relaxation of specific restrictions would foster the development of capital markets with minimal incremental risks.

In accordance, MAS issued Notice 757, which substituted for Notice 621. The liberalizations associated with subsequent versions of Notice 757 were intended to relax restrictions against various financial transactions, which have become more important for Singapore's effort to develop its capital markets.

7. Notice 757 of August 1998 relaxed the consultation requirement that was maintained in Notice 621. The consultation requirement was lifted for a broader set of S\$ credit facilities to nonresidents, for which prior consultation with MAS was required under Notice 621. Moreover, Notice 757 fully liberalized the extension of S\$ credit facilities to residents. The consultation requirement was also lifted for arranging equity listing and bond issues by nonresidents intended for economic activities in Singapore, and for transacting in several derivative products. Specifically, banks could now engage in the following activities without prior consultation with MAS.

- Banks could extend S\$ credit facilities to residents for any purposes, domestic or overseas.
- Banks could extend S\$ credit facilities to or arrange S\$ equity listings or bond issues for nonbank nonresidents if the S\$ proceeds are used for designated economic activities in Singapore. Hedging of currency or interest rates from these economic activities could also be arranged without consultation with MAS.
- Banks could extend S\$ credit facilities to nonbank nonresidents for financial investments—shares, bonds, deposits, and commercial properties in Singapore—up to S\$5 million.
- Banks could extend S\$ credit facilities up to S\$20 million to nonresidents, via repurchase agreements of Singapore Government Securities (SGS).
- Banks could engage in a limited list of derivative transactions, including hedging that was allowed above, and transacting S\$ interest rate futures with nonresidents.

8. However, banks were required to continue to consult MAS for activities not permitted above, including extension of S\$ credit facilities for financial investments, where the amount would exceed S\$5 million. In particular:

- Banks must consult MAS before extending S\$ credit facilities of any amount to nonresidents for use in overseas projects.
- Banks must consult MAS before transacting with nonresidents financial derivatives that are not pre-authorized, including S\$ currency options, S\$ forward rate agreements, and interest rate swaps and options.
- The S\$ proceeds from credit facilities extended to nonresidents, including S\$ proceeds from bond issues for all overseas projects must be converted or swapped into foreign currency for use outside Singapore.

9. Finally, the extension of S\$ credit facilities for certain purposes was explicitly prohibited. This, however, does not imply a tightening of the restrictions against such transactions, which are likely to have been declined by MAS previously in response to the consultation required under Notice 621. Instead, Notice 757 can be viewed to have made explicit the policy stance on such transactions for the first time in the MAS Notice. Specifically, banks were prohibited from extending S\$ credit facilities to nonresidents for speculating in the S\$ currency and interest rate markets; financing third-country trades; financing acquisition of shares of companies not listed on the Stock Exchange or Central Limit Order Book; and financing any activities outside Singapore, except when approved by MAS.

10. Notice 757 was further liberalized in November 1999, to contribute to the development of Singapore's capital markets (see Annex for details on the 1999 version of Notice 757). Banks were now allowed to engage in an expanded range of activities without prior consultation with MAS, including transactions in S\$ interest rate products with other banks or finance companies; extension of S\$ credit facilities of any amount to nonresidents via repos of SGS or other S\$ bonds; arranging S\$ equity listings for nonresidents companies as long as the S\$ proceeds are converted into foreign currency before being used outside Singapore; and extension of S\$ credit facilities to nonbank nonresidents up to S\$5 million for any purposes. However, the S\$ proceeds from credit facilities extended to nonresidents for overseas projects were required to be converted or swapped into foreign currency for use outside Singapore. The commitment to the noninternationalization policy was reiterated through the MAS press release in November 1999 when "... the Authority reaffirmed the basic thrust of our noninternationalization policy."

D. Virtual Internationalization: Notice 757 in December 2000

Only measures to limit access to S\$ for speculative activity remain.

11. The third and most extensive liberalization measures were announced in December 2000, which have eliminated most hurdles against nonresident access to S\$ credit facilities for economic and financial transactions in Singapore. The following have been major amendments to the requirement for prior consultation with MAS.

- Banks can lend S\$ to nonresidents for investment purposes—financial assets and real estate—in Singapore.
- Banks can extend S\$ credit facilities exceeding S\$5 million to nonresidents to fund offshore activities, as long as the S\$ proceeds are swapped into foreign currency. In this instance, banks are not allowed to convert the S\$ proceeds into foreign currency via the spot or forward market.
- Banks can transact in S\$ currency options with other banks and financial institutions in Singapore.
- Banks can transact with nonresidents in a broad range of derivative products, including cross currency swaps and currency options for hedging purposes, S\$ interest rate derivatives, and equity derivatives.

12. The current Notice 757 imposes virtually no binding restrictions on capital market activities, a verdict also reached by market participants. The cross country comparison also confirms the lightness of restrictions under Notice 757 (Table IV.1). The legacy of the noninternationalization policy now boils down to the prohibition of extending S\$ credit facilities for speculative activities in the S\$ currency market and restrictions against outflow of S\$ accounts above S\$5 million—the swap/conversion requirement. These measures are intended, in the words of MAS, “to limit borrowing of S\$ by nonresidents for currency speculation, and to discourage the development of an offshore S\$ market.” The latter objective, however, does not purport to suppress the offshore S\$ market. While MAS would discourage a further development of the offshore S\$ market, market participants and the authorities are unanimous in the view that there currently exists a fairly liquid offshore S\$ market, which is deep enough to enable market participants to use S\$ as a proxy for regional currencies.

E. Has the Policy Caused Major Distortions?

13. Despite several restrictions that were imposed to limit the offshore use of the Singapore dollar, evidence suggests that this has not impeded the growth of trade or capital mobility. Singapore has maintained open trade regime and has served as the regional base for entrepôt trade: exports and imports each exceeded 150 percent of GDP in the 1980s and 1990s, with entrepôt trade accounting for about a third of them.

14. Capital and financial accounts were also highly open since the removal of exchange restrictions in the late 1970s. The volume of international capital flows has been high, with gross flows averaging nearly 40–50 percent of GDP in the 1980s and 1990s, respectively (Figure IV.1). The flows of foreign direct investment (FDI) have been high from the early period, reflecting Singapore's commitment to bring in multinational corporations for its economic development, and averaged about 10 percent of GDP in both decades. Portfolio flows were relatively moderate for both inflows and outflows, but outflows picked up in the 1990s, reflecting the large saving of Singaporeans that are invested overseas. The high volume of gross flows in other investment reflected the lively interaction between domestic banks and Asian Currency Units and other nonresidents.

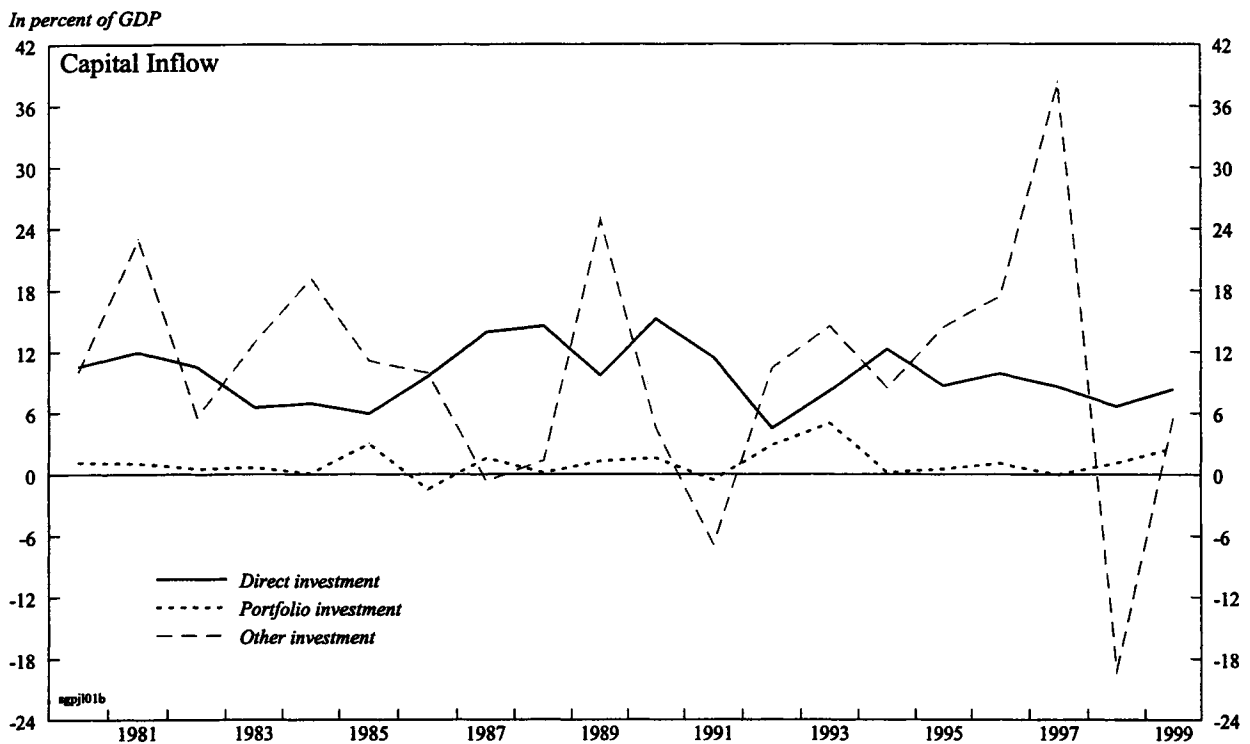
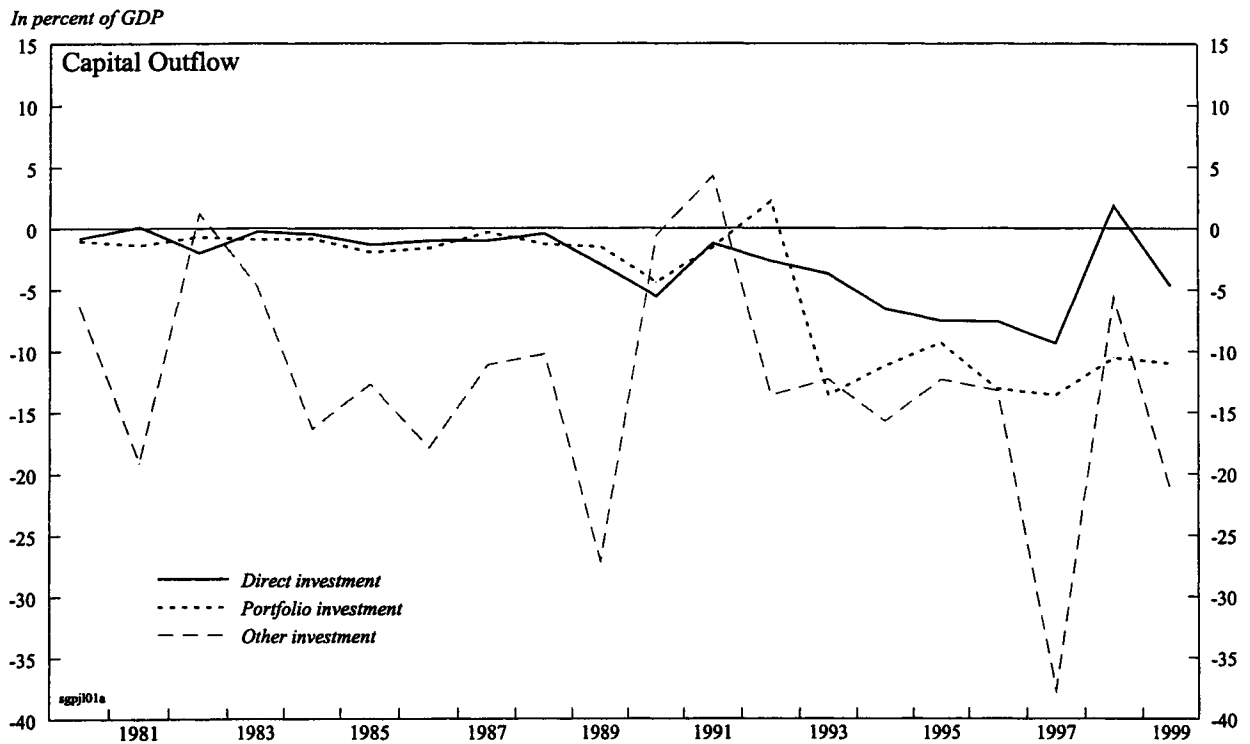
15. Various interest parity conditions held up during the 1990s before the Asian crisis, according to a recent study by MAS (2000), which provides price-based evidence of capital account openness. Not only did the covered interest parity condition hold, as is the case with most countries with well developed money and foreign exchange markets, but the uncovered interest parity condition also held during this period unlike most other countries. The parity conditions indicate that Singapore's money market has been fully integrated with international markets.

16. Singapore's integration with international financial markets has been made possible partly by the narrow scope of the restrictions that were in place to discourage the internationalization of the Singapore dollar. From the beginning, the restrictions have been imposed on selected asset-side transactions of the bank balance sheet, with no restrictions on the liability side. The major focus of the restrictions was to limit the offshore use and availability of the currency for speculative activities. Thus with few restrictions on depositing or withdrawing bona fide funds in the banking system, interest rate differentials could be arbitrated away quickly, as evident in the various parity conditions.

17. These restrictions alone, therefore, are unlikely to have been the single most important factor in protecting the Singapore dollar against the speculative attack. Indeed, a number of factors have contributed to discouraging speculation against the currency. Singapore has maintained very high levels of external reserves, averaging 80 percent of GDP in the 1990s. Policy management has been prudent on both fiscal and monetary side, and thus has enjoyed very high credibility. As a result, no substantial macroeconomic imbalances built up: studies of the equilibrium exchange rates show that there has been no substantial or sustained deviation between the actual and the equilibrium exchange rate measured in various ways. Montiel (1997) and Lee (1999) find, for different sample periods with the latter including the crisis period, that the real exchange rate of Singapore has been broadly in line with the equilibrium exchange rate based on macroeconomic fundamentals.

18. It thus appears fair to conclude that the absence of speculative attacks against the Singapore dollar was not so much due to these restrictions as due to sound economic fundamentals. Through the past two decades, the authorities have been committed to the policy of free trade and capital mobility, aside from consultation requirements for speculative transactions. With the domestic economy fully integrated with the international economy, the

Figure IV.1. Singapore: Capital Flows, 1980-1999



Source: IMF, International Financial Statistics.

maintenance of both internal and external macroeconomic balance was critical to avoid sharp corrections. This discipline was well heeded by a prudent policy management. Against this background, there was little incentive to wage a speculative attack against the currency, or to circumvent the restrictions for speculative purposes.

19. Supportive evidence for this assessment can also be found in the comparison of the experience by Korea and Singapore during the Asian crisis (Ishii et al (2001)). At the dawn of the crisis, Korea maintained more extensive restrictions against the offshore use of the currency than Singapore. Nevertheless, Korea fell prey to speculative attack and its currency depreciated sharply initially, until market confidence and stability were restored following policy reforms and an agreement to extend external credit lines. In contrast, the speculative pressure against the Singapore dollar was much less significant, largely owing to Singapore's strong economic fundamentals and the credibility of policy management.

20. Finally, it should also be noted that the authorities have remained vigilant to ensuring that the restriction did not become overly binding against the development of the economy. The most recent example has been the effort to further develop the domestic capital market. For example, Gobat (2000) noted the importance of allowing more short-sales of securities and access to domestic currency credit lines in deepening market liquidity. As the risk increased that restrictions would hamper the development of the domestic capital market, the authorities relaxed them in a preemptive manner, before the restrictions obstructed market activities and strengthened the incentives for circumvention. As the result, the remaining set of restrictions is regarded as nonbinding by the market, especially cast against the background of strong fundamentals.

F. Conclusion

21. The noninternationalization policy needs to be appraised from the perspective of overall macroeconomic policy framework of Singapore, which has been remarkable in maintaining the internal and external balance. As noted earlier, it is difficult to disentangle the effects of the measures to curb the international use of the Singapore dollar on insulating Singapore from speculative attacks from the overall macroeconomic policy track record. The noninternationalization policy clearly has had a strong signalling effect in deterring potential speculative activity against the S\$. However, without the strong and credible policy record, the noninternationalization policy is not likely to have been defensible for over two decades under the highly open regime for capital and financial accounts.

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Banks were allowed to engage in the following activities without prior consultation with MAS.

- Banks could extend S\$ credit facilities or transact S\$ interest rate products with other banks, merchant banks, finance companies or insurance companies in Singapore.
- Banks could extend S\$ credit facilities of any amount to nonresidents, via repurchase agreements of Singapore Government Securities (SGS) or S\$ denominated bonds listed on the Stock Exchange of Singapore (SES).
- Banks could extend S\$ credit facilities to nonbank nonresidents up to the maximum of S\$ 5 million.
- Banks could arrange S\$ bond issue for nonresidents if the proceeds are used for designated economic activities in Singapore.
- Banks could arrange S\$ equity listings for nonresidents, but have to ensure that the proceeds must be converted into foreign currency before drawdown if they are not to be used for designated economic activities in Singapore.
- Banks could transact S\$ derivatives with residents freely, and engage in an expanded range of derivative transactions with nonresidents, including option-related products with nonbank counterparties.

Banks were required to consult MAS for activities not permitted in the Notice, including the following activities in particular:

- Banks must consult MAS before extending S\$ credit facilities above S\$ 5 million to nonresidents except for a few purposes expressly permitted in the Notice.
- Banks must consult MAS before transacting S\$ current options or option-related products with nonbank financial institutions, and before extending S\$ credit facilities exceeding S\$5 million to banks and other financial institutions outside Singapore.
- Banks are not allowed to transact S\$ currency options or option-related products with other banks.

The S\$ proceeds from credit facilities extended to nonresidents for all overseas projects must be converted or swapped into foreign currency for use outside Singapore.

Table IV.1. Major Regulations on the Offshore Use of Currencies in Selected Asian Countries¹
(as of December 31, 2000)

Nature of the Transaction	Indonesia	Korea	Malaysia	Philippines	Singapore	Thailand
Imports of domestic currency	Approval	Notification	Approval	Approval	Free	Free
Exports of domestic currency	Approval	Approval	Approval	Approval	Free	Quantity limit
Use of domestic currency in settlement of trade transactions	Prohibited	Mostly Prohibited	Prohibited	Mostly Prohibited	Free	Free
Nonresident holding of or transfers between/ from domestic currency accounts	Largely Prohibited	Restricted	Approval	Restricted	Free	Restricted
Resident domestic currency deposits abroad	Restricted	Free	Prohibited	Free	Free	Mostly Prohibited
Domestic currency lending from residents to nonresidents	Largely Prohibited	Restricted	Largely Prohibited	Restricted	Restricted	Largely Prohibited
Banks' derivative transactions in domestic currency w/ nonresidents	Quantity limit	Restricted	Approval	Restricted	Restricted	Restricted
Domestic currency lending to residents from nonresidents	Restricted	Approval	Prohibited	Approval	Quantity limit	Largely Free
Nonresidents' issue/ sale of domestic currency assets locally	Largely Prohibited	Approval	Approval	Approval	Restricted	Approval
Nonresidents' purchase of domestic currency assets locally	Quantity Limit	Largely Free	Approval	Restricted	Restricted	Restricted
Residents' issue/sale of domestic currency assets abroad	Approval	Report / Approval	Approval	Approval	Free	Approval / Prohibition

¹ Based on Table 1 in Ishii et al (2001). The categories refer to the key element of restrictions, and do not reflect full details which can be found in the original table. The category "Restricted" often involves requirements of prior approval or consultation on selected transactions, and thus are more lightly regulated than the category "Approval" which require prior approval on a broad spectrum of transactions.

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Table 1. Singapore: Expenditure on Gross Domestic Product at 1990 Market Prices, 1996-2001

	1996	1997	1998	1999	2000	2000				2001
						Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1
(In millions of Singapore dollars)										
Gross domestic product	110,699	120,140	120,207	127,250	139,840	32,990	34,600	35,713	36,537	34,477
Domestic demand	101,243	110,892	102,193	107,565	119,045	29,646	29,636	29,441	30,322	29,848
Consumption	57,145	60,691	60,198	63,340	69,854	18,455	16,522	16,909	17,968	18,698
Private	46,122	48,884	47,452	49,962	54,641	13,035	13,887	13,940	13,779	13,979
Public	11,023	11,806	12,747	13,378	15,213	5,419	2,634	2,970	4,189	4,719
Gross capital formation	44,098	50,201	41,995	44,226	49,191	11,191	13,114	12,532	12,354	11,149
Gross fixed investment	45,514	49,871	46,659	44,858	47,501	11,129	11,736	12,923	11,713	11,851
Private	37,843	40,489	36,491	34,273	37,220	8,413	9,414	10,380	9,013	8,836
Public	7,670	9,382	10,168	10,585	10,281	2,716	2,322	2,543	2,700	3,014
Increase in stocks	-1,416	330	-4,664	-633	1,690	62	1,378	-391	641	-701
Net exports of goods and nonfactor services	11,168	11,664	20,328	22,243	23,449	4,016	5,601	6,941	6,891	5,279
Statistical discrepancy	-1,712	-2,416	-2,314	-2,559	-2,654	-672	-637	-669	-676	-650
(Percentage change over corresponding period of previous year)										
Gross domestic product	7.6	8.5	0.1	5.9	9.9	9.8	8.4	10.3	11.0	4.5
Domestic demand	12.8	9.5	-7.8	5.3	10.7	12.4	11.9	5.9	12.7	0.7
Consumption	9.7	6.2	-0.8	5.2	10.3	9.0	9.3	9.0	13.9	1.3
Private	7.6	6.0	-2.9	5.3	9.4	9.9	9.8	9.6	8.2	7.2
Public	19.3	7.1	8.0	5.0	13.7	6.8	6.4	6.2	38.0	-12.9
Gross capital formation	17.1	13.8	-16.3	5.3	11.2	18.4	15.5	2.0	10.9	-0.4
Gross fixed investment	23.1	9.6	-6.4	-3.9	5.9	4.6	5.0	8.3	5.5	6.5
Private	27.3	7.0	-9.9	-6.1	8.6	11.2	7.0	10.5	5.9	5.0
Public	5.7	22.3	8.4	4.1	-2.9	-11.6	-2.3	-0.1	4.2	11.0

Sources: CEIC database; and data provided by the Singapore authorities.

Table 2. Singapore: Expenditure on Gross Domestic Product
at Current Market Prices, 1996–2000

	1996	1997	1998	1999	2000
(In millions of Singapore dollars)					
Gross domestic product	128,201	140,228	138,529	142,111	159,042
Domestic demand	112,480	124,300	112,902	117,517	129,962
Consumption	64,949	69,636	68,105	71,418	80,186
Private	52,741	56,456	54,198	57,429	63,565
Public	12,208	13,180	13,907	13,989	16,621
Gross capital formation	47,531	54,664	44,797	46,099	49,776
Gross fixed investment	49,303	54,260	51,110	47,050	46,848
Private	40,835	43,600	39,635	35,773	37,219
Public	8,468	10,661	11,475	11,277	9,629
Increase in stocks	-1,771	404	-6,313	-951	2,928
Net exports of goods and nonfactor services	17,553	18,754	27,289	27,480	29,364
Statistical discrepancy	-1,833	-2,826	-2,727	-2,886	-284
(In percent of GDP)					
Domestic demand	87.7	88.6	81.5	82.7	81.7
Consumption	50.7	49.7	49.2	50.3	50.4
Private	41.1	40.3	39.1	40.4	40.0
Public	9.5	9.4	10.0	9.8	10.5
Gross capital formation	37.1	39.0	32.3	32.4	31.3
Gross fixed investment	38.5	38.7	36.9	33.1	29.5
Private	31.9	31.1	28.6	25.2	23.4
Public	6.6	7.6	8.3	7.9	6.1
Increase in stocks	-1.4	0.3	-4.6	-0.7	1.8
Net exports of goods and nonfactor services	13.7	13.4	19.7	19.3	18.5
Statistical discrepancy	-1.4	-2.0	-2.0	-2.0	-0.2

Sources: CEIC database; and data provided by the Singapore authorities.

Table 3. Singapore: Gross Domestic Product by Industry at 1990 Market Prices, 1996–2001

	1996	1997	1998	1999	2000	2000				2001
						Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1
(In millions of Singapore dollars)										
Gross domestic product	110,699	120,140	120,207	127,250	139,840	32,990	34,600	35,713	36,537	34,477
Goods producing industries	38,444	41,342	41,581	44,535	49,054	10,961	12,166	12,709	13,219	11,172
Manufacturing	27,182	28,399	28,239	32,089	36,974	7,998	9,205	9,591	10,180	8,179
Construction	9,183	10,662	10,976	10,012	9,555	2,367	2,324	2,474	2,390	2,367
Utilities	1,869	2,070	2,171	2,241	2,334	550	591	596	598	575
Other goods industries	210	210	196	194	191	47	45	48	51	50
Services producing industries	75,093	82,309	82,065	85,159	92,714	22,520	22,967	23,480	23,747	23,740
Wholesale and retail trade	18,523	19,713	18,902	20,234	23,313	5,582	5,704	5,815	6,212	5,967
Hotels and restaurants	3,574	3,804	3,670	3,659	3,959	985	973	985	1,016	999
Transport and communications	14,476	15,751	16,703	17,949	19,557	4,713	4,892	5,029	4,923	4,932
Financial services	13,069	15,502	14,218	14,286	14,877	3,606	3,751	3,801	3,719	3,712
Business services	13,522	14,651	15,333	15,031	16,017	3,869	4,000	4,063	4,085	4,077
Other service industries	11,929	12,887	13,239	14,000	14,991	3,766	3,647	3,786	3,791	4,052
Owner occupied dwellings	3,680	3,893	4,181	4,494	4,772	1,168	1,183	1,201	1,221	1,238
Taxes and duties on imports	672	694	706	834	1,035	220	250	270	295	289
Imputed bank service charge	-7,190	-8,097	-8,217	-7,773	-7,736	-1,880	-1,966	-1,947	-1,944	-1,962
(Percentage change over corresponding period of previous year)										
Gross domestic product	7.6	8.5	0.1	5.9	9.9	9.8	8.4	10.3	11.0	4.5
Goods producing industries	7.4	7.5	0.6	7.1	10.1	6.5	8.9	11.0	13.7	1.9
Manufacturing	2.9	4.5	-0.6	13.6	15.2	13.2	13.2	15.2	18.8	2.3
Construction	23.1	16.1	2.9	-8.8	-4.6	-10.9	-3.9	-1.1	-1.9	0.0
Utilities	7.3	10.8	4.9	3.2	4.2	4.6	4.2	3.5	4.3	4.6
Other goods industries	3.5	0.1	-6.9	-1.1	-1.5	3.3	-7.2	-2.9	1.0	6.6
Services producing industries	8.1	9.6	-0.3	3.8	8.9	10.4	7.2	9.2	8.7	5.4
Wholesale and retail trade	6.1	6.4	-4.1	7.1	15.2	17.3	15.3	15.4	13.1	6.9
Hotels and restaurants	6.0	6.5	-3.5	-0.3	8.2	10.7	6.8	9.9	5.6	1.5
Transport and communications	8.2	8.8	6.0	7.5	9.0	9.9	9.7	9.5	6.8	4.6
Financial services	7.3	18.6	-8.3	0.5	4.1	11.6	-4.0	3.1	7.5	3.0
Business services	9.4	8.3	4.7	-2.0	6.6	5.2	6.5	7.4	7.1	5.4
Other service industries	10.9	8.0	2.7	5.7	7.1	6.0	6.1	8.3	7.9	7.6
Owner occupied dwellings	5.9	5.8	7.4	7.5	6.2	6.3	6.6	5.8	6.1	6.0

Sources: CEIC database; and data provided by the Singapore authorities.

Table 4. Singapore: National Saving, Capital Formation, and the Current Account, 1996–2000

	1996	1997	1998	1999	2000
(In millions of Singapore dollars)					
Gross national saving	65,611	81,282	78,828	82,965	87,353
Government 1/	15,785	15,454	13,976	14,712	14,630
Private sector and other	49,826	65,828	64,852	68,253	72,723
CPF savings 2/	6,531	7,091	5,619	3,120	1,901
Gross capital formation	47,531	54,664	44,797	46,099	49,776
Gross fixed investment	49,303	54,260	51,110	47,050	46,848
Public	8,468	10,661	11,475	11,277	9,629
Private	40,835	43,600	39,635	35,773	37,219
Increase in stocks	-1,771	404	-6,313	-951	2,928
Current account balance	18,080	26,618	34,031	36,866	37,576
Net exports of goods and services	17,553	18,754	27,190	27,428	29,364
Net factor income from abroad	2,031	9,600	9,979	11,233	10,555
Net transfers from abroad	-1,505	-1,736	-1,982	-1,973	-2,342
<i>Memorandum item :</i>					
GDP	128,201	140,228	138,529	142,111	159,042
(In percent of GDP)					
Gross national saving	51.2	58.0	56.9	58.4	54.9
Government 1/	12.3	11.0	10.1	10.4	9.2
Private sector and other	38.9	46.9	46.8	48.0	45.7
CPF savings 2/	5.1	5.1	4.1	2.2	1.2
Gross capital formation	37.1	39.0	32.3	32.4	31.3
Gross fixed investment	38.5	38.7	36.9	33.1	29.5
Public	6.6	7.6	8.3	7.9	6.1
Private	31.9	31.1	28.6	25.2	23.4
Increase in stocks	-1.4	0.3	-4.6	-0.7	1.8
Current account balance	14.1	19.0	24.6	25.9	23.6
Net exports of goods and nonfactor services	13.7	13.4	19.6	19.3	18.5
Net factor income from abroad	1.6	6.8	7.2	7.9	6.6
Net transfers from abroad	-1.2	-1.2	-1.4	-1.4	-1.5

Source: Data provided by the Singapore authorities.

1/ The government's current surplus (calendar year figures estimated from fiscal year data as percent of GDP).

2/ Change in amounts due to members.

Table 5. Singapore: Gross Fixed Investment at 1990 Market Prices, 1996–2000

	1996	1997	1998	1999	2000
(In millions of Singapore dollars)					
Gross fixed investment	45,514	49,871	46,659	44,858	47,501
Gross fixed investment (private)	37,843	40,489	36,491	34,273	37,220
Construction and works	14,849	16,352	15,452	12,801	13,261
Residential buildings	7,558	8,816	8,480	7,322	6,579
Nonresidential buildings	6,865	6,955	6,273	4,866	6,049
Other construction and works	427	581	700	613	633
Transport equipment	8,276	7,902	6,442	5,720	3,456
Machinery and equipment	14,718	16,236	14,597	15,752	20,504
Gross fixed investment (public)	7,670	9,382	10,168	10,585	10,281
Construction and works	6,972	8,732	9,326	9,608	9,062
Residential buildings	3,296	4,020	4,332	3,890	3,121
Nonresidential buildings	1,799	2,345	2,420	2,968	2,804
Other construction and works	1,876	2,366	2,575	2,749	3,137
Transport equipment	65	49	103	48	75
Machinery and equipment	634	602	739	929	1,144
(Percentage change over previous year)					
Gross fixed investment	23.1	9.6	-6.4	-3.9	5.9
Gross fixed investment (private)	27.3	7.0	-9.9	-6.1	8.6
Construction and works	25.0	10.1	-5.5	-17.2	3.6
Residential buildings	30.4	16.6	-3.8	-13.6	-10.2
Nonresidential buildings	17.4	1.3	-9.8	-22.4	24.3
Other construction and works	79.4	36.0	20.4	-12.4	3.2
Transport equipment	47.0	-4.5	-18.5	-11.2	-39.6
Machinery and equipment	20.5	10.3	-10.1	7.9	30.2
Gross fixed investment (public)	5.7	22.3	8.4	4.1	-2.9
Construction and works	18.7	25.2	6.8	3.0	-5.7
Residential buildings	27.9	22.0	7.8	-10.2	-19.8
Nonresidential buildings	11.8	30.3	3.2	22.7	-5.5
Other construction and works	11.2	26.1	8.8	6.8	14.1
Transport equipment	-74.1	-24.9	112.6	-53.3	56.5
Machinery and equipment	-44.1	-5.0	22.6	25.8	23.1

Source: Data provided by the Singapore authorities.

Table 6. Singapore: Changes in Productivity and Earnings, 1996-2001

(Percentage change over corresponding period of previous year)

	1996	1997	1998	1999	2000	2000				2001
						Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1
Productivity, total economy	1.3	2.3	-2.3	6.3	5.6	6.7	4.6	5.5	5.5	-1.0
Manufacturing	2.9	5.5	1.7	17.5	11.5	11.4	11.0	11.1	12.5	-3.6
Construction	-2.0	-3.3	-2.6	-3.6	-3.3	-7.2	-2.1	-1.3	-2.4	-0.7
Wholesale and retail trade	3.2	3.9	-3.3	8.8	11.0	15.0	11.4	9.9	7.8	1.6
Hotels and restaurants	2.9	1.9	-5.2	4.0	5.9	8.3	4.4	8.0	2.9	-1.3
Transport and communications	3.4	4.6	3.8	6.2	4.0	6.2	4.9	4.3	0.7	-1.1
Financial services	1.2	9.3	-10.0	-0.6	-3.5	4.0	-11.6	-5.1	-1.3	-5.1
Business services	0.2	-0.4	-2.7	-5.0	-3.4	-4.6	-2.9	-2.7	-3.2	-6.5
Other Services Industries	4.6	0.2	-1.6	0.0	1.8	0.7	0.8	3.0	2.8	2.3
Average monthly earnings, total economy	5.8	5.7	2.8	2.7	8.9	8.1	7.2	8.7	11.1	5.7
Manufacturing	7.6	7.2	2.7	3.2	8.3	9.4	6.8	8.3	8.5	6.0
Construction	1.5	1.0	4.0	3.9	4.8	5.1	2.4	4.1	7.3	-1.0
Services	5.6	5.5	2.9	2.3	9.2	7.8	7.7	9.0	11.9	...
Wholesale and retail trade	5.9	5.3	2.5	0.9	6.2	6.8	4.2	5.2	8.2	1.8
Transport and communications	7.3	6.4	3.6	1.2	9.5	12.4	5.8	12.0	7.8	3.8
Financial services	6.2	7.7	1.9	2.9	8.9	10.8	14.8	8.1	3.4	5.8
Real estate and business services	4.5	5.2	2.1	1.8	7.4	8.1	5.4	6.0	9.3	4.9
Community, social and personal services	4.3	4.2	3.4	5.1	12.9	3.2	9.0	12.5	22.0	11.7

Sources: CEIC database; and data provided by the Singapore authorities.

Table 7. Singapore: Unit Labor Costs, 1996–2001
(Annual percent change)

	1996	1997	1998	1999	2000	2000				2001	
						Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 1
Total economy											
Average earnings 1/	5.8	5.7	2.8	2.7	8.9	8.1	7.2	8.7	11.1	5.7	5.7
Average labor costs 2/	3.9	3.0	0.5	-2.0	4.6	5.0	4.1	5.1	4.4	5.1	5.1
Labor productivity	1.3	2.3	-2.3	6.1	5.6	6.7	4.6	5.5	5.5	-1.0	-1.0
Unit labor costs	2.6	0.7	2.7	-8.1	-1.0	-1.7	-0.5	-0.4	-1.1	6.1	6.1
Manufacturing sector											
Average earnings 1/	7.6	7.2	2.7	3.2	8.3	9.4	6.8	8.3	8.5	6.0	6.0
Average labor costs 2/	5.2	6.2	0.6	0.2	4.4	5.0	4.5	5.3	3.0	4.4	4.4
Labor productivity	2.9	5.5	1.7	17.5	11.5	11.4	11.0	11.1	12.5	-3.6	-3.6
Unit labor costs	2.3	0.7	-1.1	-17.3	-7.1	-6.4	-6.5	-5.8	-9.5	8.0	8.0
Unit business costs	0.5	-0.1	-0.6	-10.4	-1.1	-2.3	-1.4	0.7	-1.1	6.8	6.8

Sources: CEIC database; and data provided by the Singapore authorities.

1/ Refers to CPF contributors; from 1992 onwards, excludes the self-employed.

2/ Derived as a residual.

Table 8. Singapore: Employment by Industry, Midyear, 1996–2000

	1996	1997	1998	1999	2000
(In thousands of persons)					
Total labor force	1,802	1,876	1,932	1,976	2,192
Total employment	1,748	1,831	1,870	1,886	2,095
Manufacturing	406	414	404	396	435
Construction	115	126	131	131	274
Services	1,214	1,270	1,317	1,342	1,373
Wholesale and retail trade	292	295	281	279	287
Hotels and restaurants	114	104	119	121	114
Transport, storage, and communications	195	210	206	204	197
Financial intermediation	95	106	109	105	96
Real estate, renting, and business activities	151	167	184	197	226
Communities, social, and personal services	366	389	418	436	453
Others	13	20	17	18	13
Population	3,612	3,737	3,866	3,894	4,018
(Percentage change)					
Total labor force	3.0	4.1	3.0	2.3	10.9
Total employment	2.7	4.7	2.1	0.9	11.1
Manufacturing	-1.6	1.9	-2.4	-2.2	9.9
Construction	1.0	9.7	4.1	-0.5	109.6
Services	4.3	4.7	3.7	1.8	2.3
Population	4.2	3.5	3.4	0.7	3.2
(In percent)					
Unemployment rate (percent of the labor force)					
Not seasonally adjusted	3.0	2.4	3.2	4.6	4.4
Seasonally adjusted	2.2	1.8	2.4	3.6	3.5
Labor force (percent of the population)	49.9	50.2	50.0	50.7	54.6

Source: Data provided by the Singapore authorities.

Table 9. Singapore: Consumer Price Index, 1996-2001
(Percentage change over corresponding period of previous year)

	Weights (1997/98)	1996	1997	1998	1999	2000	2000				2001	
							Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 1
All items	100	1.4	2.0	-0.3	0.0	1.3	1.1	0.8	1.5	2.0		1.7
Food	28	2.1	2.0	0.2	0.9	0.5	1.8	0.3	0.0	0.1		0.4
Clothing	4	0.5	0.7	-1.3	-1.9	-0.8	-2.7	-2.4	-0.2	2.2		1.0
Housing	23	0.5	2.3	1.9	-1.0	2.2	0.1	1.1	2.9	4.0		3.8
Transport and communication	18	0.4	3.9	-4.9	-0.6	2.1	3.4	1.9	2.0	1.2		-0.3
Education and stationary	7	3.0	1.5	3.1	1.5	1.3	0.0	0.8	2.0	2.2		2.3
Health	3	2.3	3.7	4.3	0.6	1.5	0.4	0.2	1.2	2.7		3.6
Miscellaneous	17	1.8	0.2	-1.1	0.8	1.5	0.9	0.9	1.5	2.8		2.8

Sources: CEIC database; and data provided by the Singapore authorities.

Table 10. Singapore: Domestic Supply and Property Price Index, 1996–2001
(Percentage change over corresponding period of previous year)

	Weights	2000					2001			
		1996	1997	1998	1999	2000	Qtr 1	Qtr 2	Qtr 3	Qtr 4
DSPI: all items	1000	-3.0	-4.0	-3.2	2.1	10.1	11.7	10.4	10.6	7.8
Food	41	1.9	1.1	2.1	0.2	-2.0	1.0	-2.5	-3.0	-3.3
Beverages and tobacco	10	1.7	0.1	3.5	-0.8	0.6	-0.9	-0.4	1.8	1.8
Crude materials	13	2.0	-1.2	-9.2	-8.5	3.3	0.6	5.0	4.0	3.5
Mineral fuels	212	12.0	1.2	-21.5	31.1	55.8	103.6	62.7	48.6	31.1
Animal and vegetable oils	7	-8.4	-0.2	14.7	-9.0	-15.3	-20.2	-15.2	-10.1	-14.9
Chemicals and chemical products	75	-5.6	-1.3	-1.8	3.0	6.0	7.4	7.7	6.5	2.8
Manufactured goods	146	-1.6	-1.9	-0.9	-4.4	2.2	0.6	2.3	2.9	2.9
Machinery and transport equipment	390	-6.8	-7.2	0.7	-2.4	0.9	-2.2	0.9	2.7	2.4
Miscellaneous manufactures	106	-3.8	-1.9	-0.7	-1.0	0.3	-0.1	-0.4	0.9	0.7
Property prices										
Private residential		11.4	-8.8	-26.3	2.5	13.0	31.2	19.1	7.1	-1.0
Industrial space		21.4	0.6	-24.0	-20.2	13.7	-0.1	15.4	22.9	17.5
Office space		5.4	-8.7	-20.3	-20.7	25.0	13.6	27.0	31.7	27.6
Shop space		4.2	-8.0	-16.4	-18.8	9.1	-1.6	6.6	16.7	15.3

Sources: CEIC database; and data provided by the Singapore authorities.

Table 11. Singapore: Foreign Direct Investment
Inflows by Industry, 1994-99 1/

	1994	1995	1996	1997	1998
(In millions of Singapore dollars)					
Total inflows	11,838	9,662	12,218	15,646	13,508
Agriculture and fishing	-2	0	12	7	-8
Quarrying	4	-4	-10	-6	13
Manufacturing	4,725	3,483	2,441	5,877	2,513
Construction	133	358	42	164	384
Commerce	2,348	236	1,112	1,774	4,255
Transport and communications	563	120	459	641	885
Financial and business services	4,167	5,441	8,072	7,215	5,473
Other services	-99	29	91	-26	-7
(Percentage change over previous year)					
Total inflows	93.9	-18.4	26.5	28.1	-13.7

Source: Singapore Department of Statistics.

1/ FDI inflows are equal to the change in the inward FDI stock.

Table 12. Singapore: Government Budget, 1997/98–2001/02 1/

(In millions of Singapore dollars)

	1997/98	1998/99	1999/00	2000/01		2001/02
				Budget	Estimates	Budget
Total revenue	52,218	41,360	42,601	45,453	48,490	49,181
Current revenue	32,956	32,717	37,135	38,061	41,070	42,054
Tax revenue	23,011	21,551	22,623	23,248	25,959	28,332
Investment income 2/	3,775	4,806	6,490	9,365	9,294	8,639
Other nontax revenue	6,170	6,360	8,022	5,448	5,817	5,083
Capital receipts	19,262	8,643	5,466	7,392	7,420	7,127
Total expenditure and net lending	38,092	39,112	34,316	42,042	33,817	34,660
Current expenditure 3/	15,621	15,950	16,355	17,156	20,932	21,027
Operating expenditure	14,080	14,651	14,868	16,095	18,514	18,656
Debt servicing	992	990	838	629	532	555
Agency fees on land sales	80	10	8	55	43	55
Expenses on investment	182	247	259	377	798	762
Transfer payments	287	52	382	0	1,045	1,000
Development expenditure and net lending	22,471	23,162	17,961	24,886	12,885	13,633
Development expenditure	8,963	12,282	10,211	12,901	9,429	9,399
Net lending	13,508	10,880	7,750	11,985	3,456	4,235
Fund transfers	600	0	300	0	800	850
Overall surplus/deficit (-)	13,526	2,248	7,985	3,411	13,874	13,671

Source: Data provided by the Singapore authorities.

1/ Fiscal year runs from April 1 through March 31.

2/ Investment Income has been renamed as Investment and Interest Income from FY2000. This includes 'interest on loan' which was previously part of 'Other nontax revenue'.

3/ Includes agency fees on land sales and expenses on investment.

Table 13. Singapore: Government Revenue, 1997/98–2001/02 1/

(In millions of Singapore dollars)

	1997/98	1998/99	1999/00	2000/01		2001/02
				Budget	Estimates	Budget
Total revenue	52,218	41,361	42,601	45,453	48,490	49,181
Current revenue	32,956	32,718	37,135	38,061	41,070	42,054
Tax revenue	23,011	21,552	22,623	23,248	25,959	28,332
Taxes on net income and profits 2/	9,494	9,532	10,072	10,450	12,400	13,950
Statutory boards' contributions	702	1,800	1,676	811	1,192	814
Taxes on assets	2,336	1,529	1,314	1,783	1,609	2,120
Real estate	2,276	1,490	1,246	1,733	1,549	2,060
Death and gift taxes	59	39	68	50	60	60
Taxes on goods and services	8,064	7,018	7,274	7,710	8,281	8,612
Goods and services tax	1,927	1,657	1,995	1,900	2,200	2,400
Selective excises on goods	906	847	699	753	730	726
Petroleum products	607	538	467	520	500	496
Tobacco	131	141	80	88	93	93
Liquor	168	168	152	145	138	138
Selective taxes on services	1,386	1,387	1,513	1,611	1,668	1,792
Entertainment duty	5	4	5	5	9	10
Betting and gambling taxes	1,296	1,272	1,373	1,447	1,495	1,610
Tax on public utility and telephone bills	86	111	135	159	164	172
Motor vehicle taxes	1,743	1,205	1,719	1,943	2,551	2,563
Other taxes on goods and services	2,103	1,922	1,349	1,503	1,132	1,131
Import duties	726	720	875	894	1,107	1,136
Petroleum products	0	0	0	0	0	0
Tobacco	263	272	315	325	401	426
Liquor	180	174	191	202	194	198
Motor vehicles	281	270	364	363	506	507
Other	4	4	5	5	5	6
Stamp duties	1,688	953	1,413	1,600	1,370	1,700
Nontax revenue	9,945	11,166	14,511	14,814	15,111	13,722
Fees and charges	4,000	3,152	4,564	5,396	5,718	5,000
Investment income 3/	3,775	4,806	6,490	9,365	9,294	8,639
Other 4/	2,170	3,208	3,458	53	99	83
Capital revenue 5/	19,262	8,643	5,466	7,392	7,420	7,127

Source: Data provided by the Singapore authorities.

1/ Fiscal year runs from April 1 through March 31.

2/ The breakdown into corporate and individual income tax is estimated to be 70 percent and 30 percent, respectively.

3/ Investment Income have been renamed as Investment and Interest Income from FY2000.

4/ Interest earning from developmental loans have been classified as part of Investment and Interest Income with effect from FY2000.

5/ Sale of government property.

Table 14. Singapore: Government Expenditure, 1997/98–2001/02 1/

(In millions of Singapore dollars)

	1997/98	1998/99	1999/00	2000/01		2001/02
				Budget	Estimates	Budget
Total expenditure and net lending	38,092	39,112	34,316	42,042	33,817	34,660
Current expenditure	15,621	15,950	16,355	17,156	20,932	21,027
Manpower (including defense personnel)	3,063	2,896	2,872	3,318	3,492	3,856
Pensions	0	0	0	0	0	0
Defense outlays (military expenditure)	6,007	6,409	6,579	6,480	6,508	7,030
Other purchases of goods and services	1,580	1,806	1,891	2,338	2,266	2,423
Debt servicing	992	990	838	629	532	555
Subsidies and transfers 2/	3,430	3,540	3,526	3,959	6,248	5,347
Agency fees on land sales	80	10	8	55	43	55
Expenses on investment	182	247	259	377	798	762
Transfer payments	287	52	382	0	1,045	1,000
		3,540				
Development expenditure	8,963	12,282	10,211	12,901	9,429	9,399
Acquisition of fixed capital assets and purchases of land and intangible assets	5,326	6,981	6,369	7,681	5,902	5,845
Capital transfers 3/	3,637	5,301	3,842	5,220	3,527	3,554
Net lending	13,508	10,880	7,750	11,985	3,456	4,235
Loans to statutory boards	16,669	14,383	11,938	16,880	9,408	8,644
Repayments by statutory boards	-3,161	-3,503	-4,188	-4,895	-5,952	-4,409
<i>Memorandum item :</i>						
Fund transfers 4/	600	0	300	0	800	850

Source: Data provided by the Singapore authorities.

1/ The fiscal year runs from April 1 through March 31.

2/ Excludes internal transfers to the Sinking and Development Funds. Includes grants (mainly to educational institutions, statutory boards, and government-owned companies), subventions to local and international organizations, and social transfers.

3/ Mainly housing subsidies paid to the HDB for the difference between the market and required prices for public housing. Includes capital outlays on the MRT and capital grants to universities, etc.

4/ Comprises transfers to the Edusave Endowment Fund, Medical Endowment Fund, Lifelong Learning Endowment Fund and Eldercare Fund.

Table 15. Singapore: Government Expenditure and Net Lending, Functional Classification, 1997/98–2001/02 1/

(In millions of Singapore dollars)

	1997/98	1998/99	1999/00	2000/01		2001/02 Budget
				Budget	Estimates	
Education	4,450	4,853	4,857	5,996	5,801	6,280
Current expenditure	3,348	3,167	3,257	3,944	4,289	4890
Capital expenditure	1,102	1,686	1,601	2,052	1,512	1390
Health	1,170	1,243	1,089	1,254	1,224	1,589
Current expenditure	896	992	936	1,024	1,086	1460
Capital expenditure	274	251	153	230	138	129
Other social and community services	2,772	4,615	4,605	4,303	3,941	4,293
Current expenditure	1,236	1,274	1,217	1,147	1,329	1482
Capital expenditure	1,930	3,341	3,388	3,156	2,612	2811
Economic services 2/	4,659	5,381	3,747	5,777	6,198	4,220
Current expenditure	708	893	865	1,094	2,916	1023
Capital expenditure	3,565	4,488	2,882	4,683	3,282	3197
Internal security and defense	8,410	9,308	9,303	9,842	9,635	10,257
Current expenditure	7,235	7,661	7,901	7,989	8,045	8869
Capital expenditure	1,325	1,647	1,403	1,853	1,590	1388
General administration 3/	1,582	1,534	1,478	1,823	1,143	1,415
Current expenditure	658	664	692	896	849	931
Capital expenditure	767	870	786	926	294	484
Unallocable, including interest payments 4/	1,541	1,299	1,487	1,061	2,418	2,371
Total current expenditure	15,621	15,951	16,354	17,155	20,932	21,027
Total capital expenditure	8,963	12,283	10,212	12,901	9,428	9,399
Net lending	13,508	10,880	7,750	11,985	3,456	4,235
Loans to statutory boards 5/	16,669	14,383	11,938	16,880	9,408	8,644
Repayments by statutory boards	-3,161	-3,503	-4,188	-4,895	-5,952	-4,409
Total government expenditure and net lending	38,092	39,113	34,316	42,041	33,816	34,660

Sources: Data provided by the Singapore authorities.

1/ Fiscal year runs from April 1 through March 31.

2/ Excludes loans to statutory boards and public enterprises.

3/ Excludes internal transfers to the Sinking Fund and the Development Fund.

4/ Also includes retirement pensions to former government employees, agency fees on land sales, and expenses on investment.

5/ Includes lending to the HDB for the purchase of land.

Table 16. Singapore: Government Domestic Debt by Holders, 1996–2000 1/

(Amount outstanding at end of period; in millions of Singapore dollars)

	1996	1997	1998	1999	2000
Government medium-term debt	88,841	95,452	106,643	113,617	120,990
Government bonds	67,854	73,306	80,667	86,548	91,011
<i>Of which</i> : Central provident fund	51,620	57,120	59,620	62,620	60,620
Advance deposits 2/	20,987	22,146	25,976	27,069	29,979
Treasury bills and deposits	5,990	6,920	8,540	12,160	13,380
Commercial banks 3/	5,939	6,738	8,079	11,265	11,024
Other	51	182	461	895	2,356
Total domestic debt	94,831	102,372	115,183	125,777	134,370
(In percent of GDP)	74.0	73.0	83.1	88.5	84.5

Source: Data provided by the Singapore authorities.

1/ Net outstanding at nominal value.

2/ Deposits placed by the CPF in the government's account with the MAS for future subscriptions to government securities.

3/ Includes holdings of Development Bank of Singapore.

Table 17. Singapore: Monetary Survey Summary, 1996–2001

	1996	1997	1998	1999	2000	2000				2001
						Mar.	Jun.	Sep.	Dec.	Mar.
(In billions of Singapore dollars at end-period)										
Net foreign assets	90.3	92.8	115.5	131.0	126.3	132.3	132.3	126.2	126.3	128.6
Monetary authorities	107.4	119.3	124.3	127.1	137.8	126.8	133.0	134.5	137.8	138.9
Deposit money banks 1/	-17.1	-26.5	-8.8	3.8	-11.5	5.5	-0.8	-8.3	-11.5	-10.3
Domestic credit	86.4	103.3	122.1	121.8	126.7	123.9	125.0	121.3	126.7	132.0
Claims on private sector	127.3	143.4	154.9	150.2	159.1	149.4	153.3	154.7	159.1	162.9
Claims on government (net)	-40.9	-40.2	-32.7	-28.4	-32.5	-25.5	-28.3	-33.4	-32.5	-30.8
Other items (net)	-64.7	-72.6	-76.9	-78.3	-82.1	-83.5	-85.6	-81.0	-82.1	-84.2
M3	148.5	160.8	173.6	186.2	182.9	184.5	183.3	178.4	182.9	186.1
Broad money (M2)	112.0	123.4	160.8	174.5	170.9	172.7	171.7	166.6	170.9	176.4
Narrow money (M1)	27.0	27.5	27.2	31.1	33.3	32.1	33.1	31.7	33.3	34.7
Quasi-money	84.9	95.9	133.5	143.4	137.6	140.6	138.7	134.8	137.6	141.8
(Twelve-month change, in percent)										
Net foreign assets	4.8	2.9	24.4	13.4	-3.5	10.1	8.3	-6.4	-3.5	-2.8
Domestic credit	17.0	19.5	18.3	-0.3	4.0	0.7	0.5	4.3	4.0	6.6
Claims on private sector	15.8	12.7	8.0	-3.0	5.9	-1.1	0.9	4.2	5.9	9.0
Claims on government (net)	13.3	-1.8	-18.6	-13.2	14.3	-9.0	3.0	3.6	14.3	20.8
Narrow money (M1)	6.7	1.7	-1.0	14.2	6.9	10.6	11.6	10.3	6.9	8.0
Broad money (M2)	9.8	10.3	30.2	8.5	-2.0	5.6	2.3	-2.2	-2.0	2.2
(Twelve-month change, in percent of broad money at beginning of period)										
Net foreign assets	4.0	2.3	18.4	9.6	-2.7	7.4	6.0	-5.1	-2.7	-2.2
Domestic credit	12.3	15.1	15.3	-0.2	2.8	0.6	0.3	2.9	2.8	4.7
Other assets (net)	-6.6	-7.1	-3.4	-0.9	-2.2	-2.4	-4.1	0.0	-2.2	-0.4
<i>Memorandum items:</i>										
Income velocity of M2 2/	1.1	1.1	0.9	0.8	0.9	0.9	0.9	1.0	1.0	0.9
Money multiplier 3/	6.2	6.4	9.7	8.2	9.3	9.8	9.7	9.6	9.3	9.3
12-month change in M3 (percent)	8.6	8.3	8.0	7.3	-1.8	4.9	2.1	-1.9	-1.8	0.8
12-month change in reserve money (percent)	6.7	5.6	-13.3	28.6	-13.7	2.2	5.8	2.5	-13.7	7.3

Sources: IMF, Economic Information System; and data provided by the Singapore authorities.

1/ Commercial banks and discount houses.

2/ Ratio of annual GDP to average M2.

3/ Ratio of M2 to reserve money.

Table 18. Singapore: Monetary Survey, 1996–2001
(In millions of Singapore dollars)

	1996	1997	1998	1999	2000		2001
					Mar.	Jun.	Dec.
Net foreign assets	90,258	92,835	115,512	130,950	126,315	132,262	126,240
Monetary authorities	107,403	119,342	124,335	127,138	137,816	133,049	134,517
Foreign assets	107,751	119,617	124,584	128,457	139,260	134,431	135,953
Foreign liabilities	348	275	249	1,319	1,444	1,382	1,436
Deposit money banks	-17,145	-26,507	-8,823	3,812	-11,501	-787	-8,276
Foreign assets	60,302	78,687	74,975	93,053	90,525	100,409	94,935
Foreign liabilities	77,447	105,194	83,799	89,240	102,026	101,196	103,211
Net domestic assets	21,841	30,736	45,273	43,524	44,583	39,458	40,322
Domestic credit	86,517	103,378	122,145	121,826	126,666	125,047	121,284
Claims on private sector	127,280	143,417	154,854	150,212	159,121	153,303	154,653
Claims on government (net)	-40,764	-40,039	-32,709	-28,386	-32,454	-28,255	-33,369
Monetary authorities	-51,406	-57,393	-57,420	-57,702	-64,708	-59,110	-64,393
Claims on government	148	127	64	1,292	5,250	2,972	4,085
Government deposits	51,554	57,520	57,484	58,994	69,958	62,082	68,478
Deposit money banks	10,642	17,354	24,711	29,316	32,253	30,855	31,024
Claims on government	17,538	18,883	26,477	30,949	33,719	32,547	32,458
Government deposits	6,896	1,529	1,766	1,632	1,465	1,692	1,434
Other items (net)	-64,675	-72,642	-76,872	-78,301	-82,084	-85,589	-80,961
Monetary authorities	-37,664	-42,627	-50,356	-48,057	-54,655	-56,269	-52,716
Deposit money banks	-27,011	-30,015	-26,517	-30,244	-27,428	-29,320	-28,246
M3 1/	148,495	160,766	173,581	186,184	182,913	183,263	178,374
Broad money (M2)	111,951	123,443	160,784	174,474	170,898	171,721	166,563
Narrow money (M1)	27,040	27,511	27,239	31,109	33,262	33,070	31,725
Currency outside banks	10,293	10,704	10,146	11,315	11,289	10,881	10,931
Demand deposits	16,747	16,807	17,093	19,794	21,973	22,189	20,794
Quasi-money	84,911	95,933	133,545	143,365	137,636	138,650	134,838
Time, savings, and other deposits	84,066	95,299	132,968	142,816	137,321	138,221	134,492
NCDs in Singapore dollars	845	634	577	549	315	429	347
					544	315	346

Sources: IMF, Economic Information System; and data provided by the Singapore authorities.

1/ Adjusted for the acquisition of Post Office Savings Bank (POSB) by the DBS in November 1998.

Table 19. Singapore: Assets and Liabilities of the Monetary Authority of Singapore, 1996-2001

	1996	1997	1998	1999	2000		2001	
					Mar.	Jun.	Sep.	Dec.
(In millions of Singapore dollars)								
Assets								
Foreign assets (gross)	107,759	119,625	124,594	128,470	139,271	134,444	135,965	139,271
Claims on private sector (gross)	107,751	119,617	124,584	128,457	139,260	134,431	135,953	139,260
	8	8	10	13	11	13	12	11
								10
Liabilities								
Reserve money	107,759	119,625	124,594	128,470	139,271	134,444	135,965	139,271
Currency outside banks 1/	18,189	19,200	16,641	21,395	18,471	17,694	17,373	18,471
Currency and deposits of banks	10,293	10,704	10,146	11,315	11,298	10,968	10,931	11,298
Foreign liabilities	7,896	8,496	6,495	10,080	7,173	6,726	6,442	7,173
	348	275	249	1,319	1,444	1,311	1,436	1,444
Government deposits	51,554	57,520	57,484	58,994	69,958	56,116	68,478	69,958
Other liabilities (net)	37,668	42,629	50,220	46,762	49,398	53,051	48,678	49,398
								7,628
								1,428
								70,789
								49,135
(Change as percent of initial stock of reserve money)								
Net foreign assets	61.3	65.6	26.0	16.8	49.9	-1.4	8.3	19.0
Government deposits	41.6	32.8	-0.2	9.1	51.2	-13.5	36.2	8.5
Other items (net)	12.9	27.3	39.5	-20.8	12.3	29.4	-26.1	4.1
Reserve money	6.7	5.6	-13.3	28.6	-13.7	-17.3	-1.7	6.3
								5.9
								4.5
								-1.4
								2.8

Sources: IMF, Economic Information System; and data provided by the Singapore authorities.

1/ Excludes commemorative, numismatic, and bullion coins issued by the Board of Commissioners of Currency of Singapore.

Table 20. Singapore: Assets and Liabilities of Commercial Banks, 1996-2001

(In millions of Singapore dollars)

	1996	1997	1998	1999	2000			2001		
								Mar.	Dec.	Mar.
Assets										
Reserves	252,723	289,572	309,975	326,295	344,006	342,182	344,589	342,266	344,006	363,662
Cash	7,907	8,504	6,429	10,081	7,180	6,870	6,805	6,493	7,180	7,583
Balances with the Monetary Authority	811	802	998	2,557	1,489	970	928	967	1,489	1,038
Foreign assets 1/	7,095	7,702	5,431	7,524	5,691	5,901	5,877	5,526	5,691	6,545
Claims on government	60,302	78,687	74,975	93,053	90,525	106,863	100,409	94,935	90,525	97,762
Claims on private sector 2/	17,538	18,883	26,477	30,949	33,719	30,671	32,547	32,458	33,719	36,355
Balances with local banks	127,272	143,409	154,844	150,199	159,110	149,382	153,290	154,641	159,110	162,846
Singapore dollars negotiated CDs held	33,555	30,221	38,216	29,459	42,536	37,525	40,705	41,666	42,536	42,880
Other assets 3/	199	213	175	163	150	163	126	123	150	123
	5,951	9,655	8,858	12,393	10,787	10,707	10,708	11,952	10,786	16,115
Liabilities										
Deposits of nonbanks	252,723	289,572	309,975	326,295	344,006	342,182	344,589	342,266	344,006	363,662
Demand deposits	100,813	112,106	150,638	163,159	159,609	161,695	160,839	155,632	159,609	165,058
Time and savings deposits 4/	16,747	16,807	17,093	19,794	21,973	21,104	22,189	20,794	21,973	23,295
Foreign liabilities 5/	84,066	95,299	133,545	143,365	137,636	140,591	138,650	134,838	137,636	141,763
Government deposits	77,447	105,194	83,799	89,240	102,026	101,405	101,196	103,211	102,026	108,077
Capital and reserves	6,896	1,529	1,766	1,632	1,465	2,335	1,692	1,434	1,465	1,965
Balances due to local banks	20,977	23,710	23,324	25,319	24,492	25,806	26,125	26,184	24,492	26,431
Singapore dollars negotiated CDs issued	34,329	31,134	29,770	23,124	34,334	29,299	33,063	35,043	34,334	37,725
Other liabilities 6/	1,043	846	752	712	465	707	555	470	465	123
	11,218	15,054	19,927	23,110	21,615	20,936	21,120	20,293	21,615	24,283
Memorandum item : Annual percentage change in total assets/liabilities	12.5	14.6	7.0	5.3	5.4	5.0	5.9	4.3	5.4	11.5

Sources: IMF, Economic Information System; and data provided by the Singapore authorities.

1/ Includes amounts due from Asian Currency Units.

2/ Includes bills refinanced by MAS. Excludes bills rediscounted between commercial banks.

3/ Includes: Money at call with MAS; checks purchase payable in Singapore; Singapore interbranch balances; fixed assets in Singapore; and other domestic assets.

4/ Excludes Singapore dollars NCDs. Data from 98 includes S\$NCDs

5/ Includes amounts due to ACUs and capital and reserves of foreign banks.

6/ Includes: amounts borrowed from creditors in Singapore; bills payable in Singapore; import and export bills rediscounted with MAS; Singapore interbranch balances; and other domestic liabilities.

Table 21. Singapore: Interest Rate Structure, 1996-2001

(In percent per annum; end of period)

	1996	1997	1998	1999	2000	2001		
						Mar.	Jun.	Dec.
Commercial banks								
Prime lending rate	6.26	6.96	5.90	5.80	5.80	5.85	5.85	5.80
Fixed deposits (12 months)	3.99	4.41	2.51	2.46	2.42	2.46	2.46	2.38
Finance companies								
Loans for motor vehicles (3 years)	5.71	7.95	6.99	5.41	5.19	5.32	5.18	5.19
Housing loans (15 years)	6.81	7.17	7.31	6.15	6.15	6.17	6.22	6.15
Fixed deposits (12 months)	3.98	4.40	2.75	2.80	2.74	2.79	2.86	2.74
Interbank rates								
1-month	3.13	6.50	1.50	3.00	2.75	2.19	2.44	2.75
3-month	3.13	6.75	1.75	2.63	2.81	2.38	2.50	2.81
Commercial bills (3-month)	2.75	3.75	1.50	1.38	2.73	2.25	2.63	2.73
Government securities								
Treasury bills (3-month)	1.40	1.20	1.15	0.40	2.48	1.95	2.20	2.48
Bonds (5-year)	2.98	3.89	3.80	3.70	3.44	3.73	3.84	3.44

Sources: CEIC database; and data provided by the Singapore authorities.

Table 22. Singapore: Banks' Loans and Advances to Nonbank Customers by Industry, 1996-2001

	1996	1997	1998	1999	2000	2000			2001	
						Mar.	Jun.	Sep.	Dec.	Mar.
(In millions of Singapore dollars; at end of period)										
Total	126,988	143,244	151,641	147,186	154,042	146,528	150,250	150,758	154,042	156,955
Agriculture, mining, and quarrying	133	188	224	191	179	213	191	172	179	188
Manufacturing	12,248	12,472	12,249	11,575	11,629	11,523	12,260	11,751	11,621	12,068
Building and construction 1/	41,804	49,170	57,369	58,598	64,207	58,281	60,461	62,445	64,207	65,247
General commerce	23,932	26,350	21,549	19,949	18,968	19,414	19,086	18,855	18,968	18,476
Transport, storage, and communication	2,619	3,576	4,460	3,743	4,124	3,727	3,882	3,849	4,124	4,351
Financial institutions	19,448	20,997	22,724	21,063	20,865	21,599	22,233	20,965	20,865	21,195
Professional and private individuals	20,256	22,775	21,766	21,594	24,727	22,371	22,855	23,806	24,722	26,311
Others	6,548	7,717	11,301	10,472	9,349	9,400	9,280	8,915	9,357	9,120
(Twelve-month change, in percent)										
Total	16.5	12.8	5.9	-2.9	4.7	-1.2	0.9	3.4	4.7	7.1
Agriculture, mining, and quarrying	-16.6	41.3	19.2	-14.4	-6.6	8.4	-12.3	-17.3	-6.6	-11.4
Manufacturing	11.3	1.8	-1.8	-5.5	0.5	-5.3	4.4	7.3	0.4	4.7
Building and construction 1/	22.2	17.6	16.7	2.1	9.6	1.4	5.9	7.4	9.6	12.0
General commerce	10.6	10.1	-18.2	-7.4	-4.9	-6.9	-5.1	-5.1	-4.9	-4.8
Transport, storage, and communication	20.2	36.5	24.7	-16.1	10.2	-16.4	-12.0	-1.4	10.2	16.7
Financial institutions	15.2	8.0	8.2	-7.3	-0.9	0.9	-0.4	2.4	-0.9	-1.9
Professional and private individuals	19.9	12.4	-4.4	-0.8	14.5	4.9	6.2	10.9	14.5	17.6
Others	8.9	17.8	46.4	-7.3	-10.7	-10.0	-19.4	-16.9	-10.6	-3.0

Sources: CEIC database; and data provided by the Singapore authorities.

1/ Includes building and building cooperative societies, building developers, real estate agents, and housing loans.

Table 23. Singapore: Assets and Liabilities of Nonbank Financial Institutions, 1996-2001

(In millions of Singapore dollars, at end of period)

	1996	1997	1998	1999	2000	2000		2001 Mar.		
						Mar.	Jun.		Sep.	Dec.
Finance companies										
Total assets	21,189	22,211	21,942	20,742	19,801	21,301	20,050	20,071	19,801	16,366
Cash and balances with MAS	827	885	414	391	382	376	363	376	382	306
Deposits	2,166	1,904	2,722	2,730	1,665	3,063	2,321	1,731	1,665	1,974
Investments	1,139	1,202	1,705	1,692	1,680	1,622	1,707	1,634	1,680	1,332
Loans and advances	16,763	17,900	16,779	15,636	15,791	15,939	15,381	16,053	15,791	12,488
Other	294	320	321	294	283	302	278	277	283	266
Total liabilities	21,189	22,211	21,942	20,742	19,801	21,301	20,050	20,071	19,801	16,366
Capital and reserves	3,015	3,269	3,371	3,408	3,165	3,458	3,398	3,485	3,165	2,713
Deposits	15,072	15,612	15,345	14,322	13,646	14,822	13,838	13,510	13,646	11,592
Borrowings from individuals and instit	1,382	1,398	1,180	899	999	838	875	1,047	999	430
Other	1,721	1,932	2,046	2,113	1,992	2,184	1,939	2,030	1,992	1,631
Merchant banks 1/										
Total assets	7,497	8,712	8,593	7,900	7,539	7,663	7,321	7,677	7,539	7,972
Due from banks	5,339	6,554	6,754	6,455	5,958	6,104	5,785	6,095	5,958	6,310
Loans and advances	1,247	1,090	834	676	792	698	775	763	792	804
Investments in securities and equities	494	513	430	450	485	536	435	494	485	553
Other	416	556	575	320	304	326	326	326	304	306
Total liabilities	7,497	8,712	8,593	7,900	7,539	7,663	7,321	7,677	7,539	7,972
Capital and reserves	4,105	4,890	5,255	4,874	4,803	4,702	4,778	4,958	4,803	5,034
Due to banks	1,720	2,047	1,856	2,054	1,680	2,013	1,566	1,746	1,680	1,812
Borrowings from non-bank customers	1,194	1,082	786	516	563	498	548	549	563	615
Other	477	694	697	456	494	450	429	425	493	512

Sources: CEIC database; and data provided by the Singapore authorities.

1/ Excludes Asian Dollar Market operations.

Table 24. Singapore: Financial Operations of the Central Provident Fund, 1996-2000

(In millions of Singapore dollars)

	1996	1997	1998	1999	2000	2000			
						Mar.	Jun.	Sep.	Dec.
Excess of contributions over withdrawals	4,093	4,418	2,390	39	-462	431	-1,019	-75	202
Contributions	14,623	15,874	16,000	12,827	14,094	4,246	3,025	3,281	3,541
Withdrawals (net of refunds)	10,530	11,456	13,611	12,788	14,555	3,816	4,044	3,356	3,339
Public housing	3,000	3,460	4,796	5,428	5,443	1,433	1,478	1,362	1,170
Residential properties	2,059	2,327	3,039	4,100	3,212	784	789	854	786
Reached 55 years of age 1/	1,205	1,070	1,286	1,159	1,219	276	394	249	300
Leaving Singapore and Malaysia 2/	310	351	395	347	304	73	86	78	67
Death	109	116	151	151	145	38	37	35	35
Medisave scheme	316	338	349	348	421	102	99	119	101
Others 3/	3,531	3,794	3,595	1,256	3,812	1,111	1,162	658	881
Interest earnings from investments	2,603	2,868	3,480	3,310	2,538	630	630	638	640
Interest credited to members' balances	2,453	2,693	3,249	3,105	2,379	596	596	593	594
Increase in members' balances	6,532	7,090	5,619	3,120	1,901	1,022	-427	515	791
Members' balances, end-period	72,567	79,657	85,277	88,397	90,298	89,419	88,993	89,507	90,298
Advance deposits with MAS 4/	8,076	6,338	5,968	5,577	2,578	1,458	-660	2,320	-540
Holdings of government securities, end-period 5/	51,620	57,120	59,620	62,620	62,620	62,620	62,620	62,620	62,620

Sources: CEIC database; and data provided by the Singapore authorities.

1/ Includes first and subsequent withdrawals.

2/ Includes Malaysians leaving Singapore permanently.

3/ Excludes Government and Capping refunds, Self-Employed and Small Families Improvement Scheme refunds.

4/ Deposits placed with MAS during the year excluding interest on bonds retained as deposits by MAS.

5/ Excludes advance deposits with MAS.

Table 25. Singapore: Operations of Asian Currency Units, 1996-2001
(In millions of U.S. dollars, at end of period)

	1996	1997	1998	1999	2000	2000			2001	
						Mar.	Jun.	Sep.	Dec.	Mar.
Total assets										
Loans to nonbanks	506,870	557,194	503,610	480,399	486,453	474,613	469,381	471,268	486,453	484,696
Interbank funds	180,506	173,286	131,713	110,594	89,446	100,870	94,762	93,292	89,446	84,913
In Singapore	278,743	330,686	330,193	318,777	338,488	322,173	319,791	317,408	338,488	337,207
Inter-ACU	22,357	29,846	25,931	26,782	31,222	28,853	29,228	29,352	31,222	32,815
Outside Singapore	40,237	48,883	40,697	34,698	31,513	34,873	35,377	35,399	31,513	32,315
Other assets	216,149	251,956	263,566	257,297	275,754	258,447	255,186	252,658	275,754	272,078
	47,622	53,222	41,704	51,029	58,519	51,570	54,828	60,568	58,519	62,576
Total liabilities										
Deposits of nonbanks	506,870	557,194	503,610	480,399	486,453	474,613	469,381	471,268	486,453	484,696
Interbank funds	95,374	113,683	113,077	121,320	124,652	123,017	122,962	124,322	124,652	123,381
In Singapore	389,470	414,526	365,479	326,543	321,650	319,535	312,349	310,676	321,650	322,155
Inter-ACU	25,257	32,272	20,742	28,200	27,976	34,411	35,811	39,207	27,976	29,657
Outside Singapore	40,243	48,905	40,694	34,702	31,517	34,874	35,376	35,399	31,517	32,315
Other liabilities	323,969	333,349	304,043	263,641	262,157	250,251	241,163	236,070	262,157	259,576
	22,027	28,984	25,054	32,537	40,151	32,062	34,070	36,270	40,151	39,161
<i>Memorandum item : Annual percentage change</i> in total assets/liabilities	6.0	9.9	-9.6	-4.6	1.3	-1.1	0.0	-0.6	1.3	2.1

Source: Data provided by the Singapore authorities.

Table 26. Singapore: Stock Market Indicators, 1996-2001

(End-period data)

	1996	1997	1998	1999	2000	2000			2001	
						Mar.	Jun.	Sep.	Dec.	Mar.
Strait Times Index										
(Annual percentage change)	1,992	1,508	1,393	2,480	1,927	2,133	2,038	1,997	1,927	1,674
	3.9	-24.3	-7.6	78.0	-22.3	40.5	-6.0	-1.2	-22.3	-21.5
Number of listed companies	317	356	371	408	480	418	445	475	480	487
Mainboard	266	294	307	327	388	334	352	385	388	390
SESDAQ	51	62	64	81	92	84	93	90	92	97
Turnover 1/										
(In percent of market capitalization)	88,855	114,311	98,696	196,914	171,028	53,683	41,177	37,261	38,906	34,995
	18.0	23.1	27.9	33.1	31.8	9.3	7.2	6.7	7.2	7.0
Market capitalization										
Mainboard	493,094	494,179	354,112	595,398	538,331	574,496	569,576	558,157	538,331	497,479
SESDAQ	255,862	329,268	263,168	438,746	389,516	416,167	414,451	405,041	389,516	344,055
CLOB	4,289	3,166	2,452	8,424	3,986	7,388	6,916	4,839	3,986	3,504
	232,943	161,745	88,492	148,228	144,828	150,941	148,209	148,276	144,828	149,920

Sources: CEIC database; and data provided by the Singapore authorities.

1/ Includes SESDAQ.

Table 27. Singapore: Balance of Payments Summary in Singapore Dollars, 1996-2001

(In millions of Singapore dollars)

	1996	1997	1998	1999	2000	2000				2001
						Qtr 1	Qtr 2	Qtr 3	Qtr 4	
Current Account Balance	18,080	26,618	34,031	36,866	37,576	8,975	8,771	10,421	9,408	9,332
Goods Balance	3,136	1,660	24,788	19,023	19,653	4,784	3,730	5,360	5,779	5,620
Exports of Goods	177,680	186,708	185,085	195,910	239,512	52,092	57,195	64,211	66,014	57,637
Imports of Goods	174,543	185,048	160,297	176,888	219,859	47,309	53,465	58,851	60,234	52,017
Services Balance	14,417	17,093	2,555	8,569	9,710	2,040	2,693	3,092	1,886	2,059
Exports of Services	42,241	45,276	32,049	40,654	46,616	10,341	11,779	12,507	11,989	11,244
Imports of Services	27,824	28,183	29,494	32,084	36,906	8,301	9,087	9,415	10,103	9,185
Income Balance	2,031	9,600	8,579	11,358	10,555	2,664	2,886	2,542	2,464	2,210
Income Receipts	17,673	20,629	21,705	25,382	26,295	6,248	6,833	6,615	6,598	5,803
Income Payments	15,641	11,029	13,126	14,024	15,740	3,585	3,947	4,073	4,135	3,593
Current Transfers (Net)	-1,505	-1,736	-1,837	-1,973	-2,342	-512	-537	-572	-721	-557
Capital Flows (including errors and omissions)	-7,673	-14,762	-29,050	-29,544	-25,741	-11,146	-2,912	-6,028	-5,655	-8,353
Capital and Financial Account Balance	-6,999	-16,555	-36,884	-31,308	-19,932	-9,140	279	49	-11,120	-7,675
Capital Account (Net)	-196	-257	-378	-324	-281	-71	-79	-71	-59	-66
Financial Account (Net)	-6,803	-16,298	-36,506	-30,984	-19,651	-9,069	358	120	-11,061	-7,609
Net Errors and Omissions	-674	1,793	7,834	1,764	-5,809	-2,006	-3,191	-6,076	5,465	-678
Overall Balance	10,406	11,856	4,982	7,322	11,835	-2,171	5,860	4,394	3,753	979
Official reserves (end-period stock)	107,751	119,617	124,584	128,457	139,260	128,159	134,431	135,953	139,260	140,327
(In months of imports of goods and services)	6.4	6.7	7.9	7.4	6.5	9.2	8.6	8.0	7.9	9.2

Sources: CEIC database; and data provided by the Singapore authorities.

Table 28. Singapore: Balance of Payments Summary in U.S. Dollars, 1996-2001
(In millions of U.S. dollars)

	1996	1997	1998	1999	2000	2000				2001
						Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1
Current Account Balance	12,821	17,927	20,334	21,750	21,795	5,291	5,094	6,014	5,391	5,332
Goods Balance	2,224	1,118	14,811	11,223	11,399	2,820	2,166	3,093	3,312	3,211
Exports of Goods	126,005	125,746	110,591	115,584	138,925	30,709	33,217	37,056	37,827	32,933
Imports of Goods	123,781	124,628	95,780	104,361	127,525	27,889	31,051	33,962	34,515	29,722
Services Balance	10,224	11,512	1,527	5,056	5,632	1,203	1,564	1,784	1,081	1,177
Exports of Services	29,956	30,493	19,149	23,985	27,039	6,096	6,841	7,218	6,870	6,425
Imports of Services	19,732	18,981	17,623	18,929	21,407	4,894	5,277	5,434	5,789	5,248
Income Balance	1,441	6,465	5,126	6,701	6,122	1,570	1,676	1,467	1,412	1,263
Income Receipts	12,533	13,893	12,969	14,975	15,252	3,684	3,968	3,817	3,781	3,316
Income Payments	11,092	7,428	7,843	8,274	9,130	2,113	2,292	2,351	2,369	2,053
Current Transfers (Net)	-1,067	-1,169	-1,098	-1,164	-1,358	-302	-312	-330	-413	-318
Capital Flows (including errors and omissions)	-5,442	-9,942	-17,358	-17,430	-14,931	-6,571	-1,691	-3,478	-3,241	-4,773
Capital and Financial Account Balance	-4,964	-11,149	-22,038	-18,471	-11,561	-5,388	162	28	-6,372	-4,385
Capital Account (Net)	-139	-173	-226	-191	-163	-42	-46	-41	-34	-38
Financial Account (Net)	-4,825	-10,976	-21,813	-18,280	-11,398	-5,346	208	69	-6,338	-4,348
Net Errors and Omissions	-478	1,207	4,681	1,041	-3,369	-1,183	-1,853	-3,507	3,131	-387
Overall balance	7,380	7,985	2,977	4,320	6,865	-1,280	3,403	2,536	2,150	559
<i>Memorandum item:</i>										
Singapore dollar/U.S. dollar (period average)	1,410	1,485	1,674	1,695	1,724	1,696	1,722	1,733	1,745	1,750

Sources: CEIC database; and data provided by the Singapore authorities.

Table 29. Singapore: Domestic Exports by Commodity, 1996-2001

(In millions of Singapore dollars)

	1996	1997	1998	1999	2000	2000				2001
						Qtr 1	Qtr 2	Qtr 3	Qtr 4	
Total	103,589	107,535	105,918	116,325	135,939	30,114	32,391	36,499	36,934	32,032
Mineral fuels (oil)	16,551	15,911	13,473	15,143	22,867	4,902	5,287	5,768	6,911	5,920
Oil bunkers	2,878	3,178	2,912	3,388	5,559	1,090	1,254	1,583	1,632	1,480
Others	13,672	12,733	10,561	11,754	17,308	3,812	4,033	4,185	5,278	4,440
Non-oil	87,038	91,624	92,445	101,182	113,072	25,213	27,104	30,732	30,024	26,113
Food	1,259	1,275	1,221	1,238	1,346	318	313	358	357	315
Beverages and Tobacco	494	407	394	261	260	58	72	63	67	57
Crude materials	495	562	549	498	650	148	163	176	162	156
Animal and vegetable oils	299	316	333	346	283	74	69	66	73	67
Chemicals and chemical products	5,626	6,650	7,163	10,391	12,322	2,290	2,581	2,865	2,982	3,065
Manufactured goods	2,844	2,935	2,563	2,696	3,078	689	770	812	807	684
Machinery and transport equipment	70,288	72,845	72,469	76,367	84,248	18,608	19,790	23,015	22,835	19,152
Office machines	37,415	39,453	39,916	40,601	38,390	8,757	9,017	10,097	10,519	8,738
Electrical machinery	2,008	2,079	1,990	1,737	2,434	507	584	707	636	541
Electrical circuit apparatus	2,211	2,337	2,388	2,783	2,976	645	718	810	803	671
Radio and television and parts	2,869	3,130	2,762	2,376	2,559	527	620	712	700	...
Electronic components and parts	15,111	16,877	17,109	20,000	27,904	6,337	6,436	8,137	6,994	5,693
Others	10,675	8,970	8,304	8,871	9,986	1,835	2,415	2,552	3,184	3,509
Miscellaneous manufactures	5,176	6,017	7,005	8,523	10,066	2,315	2,547	2,670	2,534	2,426
Others	557	616	787	864	819	187	205	222	205	192

Sources: CEIC database; and data provided by the Singapore authorities.

Table 30. Singapore: Exports of Electronics, 1996-2000

(In millions of Singapore dollars)

	1996	1997	1998	1999	2000	2000			
						Qtr 1	Qtr 2	Qtr 3	Qtr 4
Total exports of electronics	94,257	99,334	99,811	106,687	132,741	28,529	30,790	36,581	36,841
United States	27,111	27,980	28,978	29,332	32,324	6,994	7,222	8,895	9,214
Malaysia	13,820	13,819	13,660	16,044	22,907	4,633	5,332	6,680	6,261
European Union (15)	17,021	19,344	20,942	19,836	22,068	4,956	4,733	5,716	6,662
Japan	7,922	7,077	6,562	7,202	8,903	1,939	2,114	2,270	2,580
Others	28,383	31,114	29,669	34,273	46,539	10,007	11,389	13,020	12,124
Domestic exports	61,872	63,994	63,647	67,558	74,393	16,864	17,433	20,557	19,539
United States	22,302	23,103	23,578	23,715	23,838	5,499	5,581	6,606	6,152
Malaysia	6,698	6,813	6,428	7,071	8,572	1,848	1,914	2,548	2,261
European Union (15)	13,004	14,606	15,879	15,152	14,671	3,390	3,175	3,872	4,234
Japan	5,718	4,414	3,935	4,404	5,408	1,152	1,231	1,435	1,590
Others	14,150	15,058	13,827	17,216	21,904	4,975	5,532	6,096	5,302
Re-exports	32,385	35,341	36,164	39,129	58,348	11,665	13,357	16,024	17,302
United States	4,809	4,877	5,400	5,617	8,486	1,495	1,641	2,289	3,062
Malaysia	7,122	7,006	7,232	8,973	14,335	2,785	3,418	4,132	4,000
European Union (15)	4,017	4,738	5,064	4,684	7,397	1,566	1,558	1,844	2,428
Japan	2,204	2,663	2,627	2,798	3,495	787	883	835	990
Others	14,233	16,057	15,841	17,057	24,635	5,032	5,857	6,924	6,822
Domestic exports	61,872	63,994	63,647	67,558	74,393	16,864	17,433	20,557	19,539
Electronic components	15,111	16,877	17,109	20,000	27,904	6,337	6,436	8,137	6,994
Disk drives	16,557	17,713	18,436	17,089	15,097	3,324	3,731	3,989	4,054
PCs	3,764	3,209	2,891	2,417	1,590	416	402	413	359
Others	26,440	26,195	25,211	28,052	29,802	6,787	6,864	8,018	8,132

Source: Data provided by the Singapore authorities.

Table 31. Singapore: Exports Under the Generalized System of Preferences (GSP)
by Country of Destination, 1996–2000

(In millions of Singapore dollars)

	1996	1997	1998	1999	2000	1999			
						Qtr 1	Qtr 2	Qtr 3	Qtr 4
Total	1,567	1,170	617	352	126	84	104	82	82
European Union	1,015	740	298	12	9	9	1	2	0
Japan	353	312	239	274	60	58	83	66	67
Canada	42	42	42	48	43	13	14	11	10
Other	157	76	38	18	14	4	6	3	5

Source: Singapore Trade Development Board.

Table 32. Singapore: Direction of Exports, 1996–2000 1/ 2/

	1996	1997	1998	1999	2000	2000			
						Qtr 1	Qtr 2	Qtr 3	Qtr 4
(In millions of Singapore dollars)									
Total	176,272	185,613	183,763	194,290	237,826	51,671	56,658	63,875	65,623
Southeast Asia	51,623	51,596	44,005	50,193	65,139	14,009	15,642	17,693	17,525
Malaysia	31,743	32,405	27,999	32,165	43,221	8,972	10,266	12,293	11,690
Thailand	10,006	8,533	7,037	8,538	10,123	2,284	2,532	2,665	2,641
Philippines	3,238	4,382	4,120	4,795	5,840	1,458	1,440	1,487	1,455
Brunei	2,412	2,067	1,028	818	838	179	217	220	222
Other	4,224	4,210	3,821	3,880	5,151	1,116	1,187	1,028	1,517
Northeast Asia	47,385	51,035	46,658	51,659	68,778	14,820	17,028	18,274	18,656
Japan	14,455	13,125	12,090	14,423	17,954	3,976	4,347	4,475	5,156
Hong Kong, SAR	15,687	17,848	15,418	14,914	18,706	4,168	4,647	4,862	5,029
Taiwan Province of China	6,870	8,368	7,928	9,477	14,196	2,806	3,696	4,196	3,498
China	4,784	6,038	6,794	6,643	9,287	1,803	2,239	2,557	2,687
Korea, Republic of	5,353	5,483	4,291	6,027	8,480	2,024	2,063	2,146	2,247
Other	236	174	137	175	156	44	36	37	39
South Asia	5,067	5,385	6,926	7,041	7,965	1,919	1,850	2,159	2,037
Middle East	2,851	3,029	3,589	3,141	3,851	938	897	1,015	1,000
Oceania	5,376	5,767	6,582	6,921	7,509	1,758	1,917	1,912	1,922
Western Europe	24,239	27,173	32,003	30,929	34,042	7,514	7,689	8,888	9,950
Germany	5,413	5,378	5,564	5,522	7,378	1,653	1,804	1,781	2,140
United Kingdom	4,984	6,190	6,236	7,247	6,129	1,337	1,244	1,775	1,773
France	3,467	3,648	3,741	3,709	3,685	922	884	924	955
Netherlands	4,073	4,558	6,331	6,536	7,052	1,631	1,380	1,806	2,234
Italy	716	771	861	734	848	189	199	219	241
Switzerland	564	373	1,886	365	903	71	231	285	315
Other	5,022	6,255	7,384	6,816	8,050	1,710	1,948	2,100	2,292
North America	33,084	34,761	37,503	38,114	42,133	9,154	9,437	11,561	11,981
United States	32,446	34,118	36,521	37,216	41,189	8,948	9,229	11,287	11,725
Other	638	643	982	898	944	207	208	274	256
Rest of the world	6,646	6,867	6,498	6,292	8,409	1,559	2,197	2,373	2,553
(In percent of total exports)									
Southeast Asia	29.3	27.8	23.9	25.8	27.4	27.1	27.6	27.7	26.7
Northeast Asia	26.9	27.5	25.4	26.6	28.9	28.7	30.1	28.6	28.4
South Asia	2.9	2.9	3.8	3.6	3.3	3.7	3.3	3.4	3.1
Middle East	1.6	1.6	2.0	1.6	1.6	1.8	1.6	1.6	1.5
Oceania	3.0	3.1	3.6	3.6	3.2	3.4	3.4	3.0	2.9
Western Europe	13.8	14.6	17.4	15.9	14.3	14.5	13.6	13.9	15.2
North America	18.8	18.7	20.4	19.6	17.7	17.7	16.7	18.1	18.3
Rest of the world	3.8	3.7	3.5	3.2	3.5	3.0	3.9	3.7	3.9

Sources: CEIC database; and data provided by the Singapore authorities.

1/ Grouping of countries conforms to official Singapore presentation.

2/ The term "country," as used in this table, does not in all cases refer to a territorial entity (that is, a state) as understood by international practice; term also covers some territorial entities that are not states, but for which data are maintained and provided internationally on a separate and independent basis.

Table 33. Singapore: Direction of Imports, 1996–2000 1/ 2/

	1996	1997	1998	1999	2000	2000			
						Qtr 1	Qtr 2	Qtr 3	Qtr 4
(In millions of Singapore dollars)									
Total	185,183	196,605	169,863	188,141	232,175	50,125	56,515	62,108	63,426
Southeast Asia	41,153	44,001	39,677	44,677	57,391	12258	13691	15519	15923
Malaysia	27,808	29,548	26,252	29,286	39,424	8,311	9,468	10,817	10,828
Thailand	10,117	10,080	8,119	8,890	10,010	2,177	2,358	2,617	2,857
Philippines	1,960	2,954	4,002	4,975	5,796	1,242	1,377	1,519	1,658
Other	1,268	1,419	1,304	1,527	2,161	528	489	565	580
Northeast Asia	59,592	63,069	52,931	60,992	76,924	16388	18960	20893	20683
Japan	33,617	34,564	28,435	31,329	40,008	8,905	9,896	10,733	10,475
Hong Kong, SAR	5,922	5,780	4,759	5,401	6,063	1,321	1,427	1,670	1,645
Taiwan Province of China	7,421	8,208	6,514	7,540	10,299	1,956	2,378	2,886	3,079
China	6,259	8,447	8,123	9,650	12,281	2,470	3,097	3,330	3,384
Korea, Republic of	6,362	6,056	5,088	7,064	8,315	1,732	2,167	2,271	2,145
Other	12	14	13	9	-42	3	-4	3	-45
South Asia	1,658	1,794	1,242	1,522	2,203	465	494	612	633
Middle East	14,690	15,407	11,212	13,331	19,451	4060	5177	4584	5630
Oceania	3,231	3,111	2,548	2,910	4,482	830	1,098	1,256	1,298
Western Europe	30,083	30,959	26,331	27,929	31,601	7211	7667	8265	8459
Germany	6,760	6,723	5,843	6,112	7,308	1,545	1,832	1,967	1,964
United Kingdom	5,067	5,513	4,636	4,623	4,724	1,223	1,094	1,227	1,180
France	5,250	5,431	4,889	4,397	3,774	857	935	966	1,016
Italy	3,188	2,903	1,840	2,026	2,869	650	642	860	716
Other	9,819	10,389	9,123	10,771	12,927	2,936	3,164	3,245	3,583
North America	31,217	34,245	32,210	32,914	35,804	8,077	8,314	9,812	9,602
United States	30,256	33,017	31,253	32,045	34,710	7,821	8,038	9,550	9,301
Other	961	1,228	957	869	1,095	256	276	262	301
Rest of the world	3,559	4,019	3,713	3,867	4,319	836	1,115	1,167	1,199
(In percent of total imports)									
Southeast Asia	22.2	22.4	23.4	23.7	24.7	24.5	24.2	25.0	25.1
Northeast Asia	32.2	32.1	31.2	32.4	33.1	32.7	33.5	33.6	32.6
South Asia	0.9	0.9	0.7	0.8	0.9	0.9	0.9	1.0	1.0
Middle East	7.9	7.8	6.6	7.1	8.4	8.1	9.2	7.4	8.9
Oceania	1.7	1.6	1.5	1.5	1.9	1.7	1.9	2.0	2.0
Western Europe	16.2	15.7	15.5	14.8	13.6	14.4	13.6	13.3	13.3
North America	16.9	17.4	19.0	17.5	15.4	16.1	14.7	15.8	15.1
Rest of the world	1.9	2.0	2.2	2.1	1.9	1.7	2.0	1.9	1.9

Sources: CEIC database; and data provided by the Singapore authorities.

1/ Grouping of countries conforms to official Singapore presentation.

2/ The term "country," as used in this table, does not in all cases refer to a territorial entity (that is, a state) as understood by international practices; the term also covers some territorial entities that are not states, but for which data are maintained and provided internationally on a separate and independent basis.

Table 34. Singapore: Structure of Imports, 1996-2000

(In millions of Singapore dollars)

	1996	1997	1998	1999	2000	2000			
						Qtr 1	Qtr 2	Qtr 3	Qtr 4
Total imports	185,183	196,605	169,863	188,141	232,175	50,125	56,515	62,108	63,426
Retained imports	126,023	133,354	109,145	124,203	147,363	32,125	36,364	39,066	39,808
Food products	3,776	3,851	3,342	3,811	4,000	950	970	1,039	1,041
Beverages and tobacco	633	601	374	551	514	86	108	155	165
Crude materials (inedible)	980	1,002	744	886	1,198	238	246	335	379
Mineral fuels	17,156	18,356	13,505	16,901	27,812	5,586	7,290	6,626	8,310
Animal and vegetable oils	325	354	396	390	301	78	80	73	70
Chemicals	7,510	7,641	6,531	7,258	8,654	1,875	2,153	2,352	2,274
Manufactured goods	12,808	13,986	10,891	10,769	11,777	2,669	2,980	3,064	3,064
Iron and steel	3,008	3,455	2,654	2,204	2,387	594	604	589	600
Metal manufactures	2,438	2,752	2,594	2,648	2,652	601	648	696	707
Machinery and transport equipment	68,373	71,576	61,499	68,756	77,140	16,667	18,365	21,484	20,624
Power generators	2,710	2,833	2,794	2,815	2,961	636	790	778	757
Telecommunication apparatus	4,573	4,805	3,354	4,198	5,342	1,130	1,450	1,402	1,360
Motor vehicles	2,467	2,336	1,532	1,982	3,540	785	911	953	891
Ships and aircraft	6,863	6,748	5,862	5,465	2,333	711	362	1,020	240
Miscellaneous manufactures	13,147	14,072	10,694	13,234	14,335	3,604	3,733	3,517	3,481
Others	1,315	1,915	1,169	1,647	1,632	372	439	421	400
Entrepot imports	59,160	63,251	60,718	63,938	84,812	18,000	20,151	23,042	23,618

Source: Data provided by the Singapore authorities.

Table 35. Singapore: External Trade—Volumes and Values, 1996–2001

	1996	1997	1998	1999	2000	2000				2001
						Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1
(In millions of Singapore dollars)										
Volume (at 1995 prices)										
Exports	184,521	205,923	205,353	216,463	252,809	56,004	60,445	67,561	68,798	60,503
Domestic exports	107,754	119,806	120,637	130,360	143,689	32,325	34,549	38,450	38,364	34,226
Oil	14,238	14,248	15,459	14,018	13,182	3,088	3,253	3,120	3,721	3,680
Non-oil	93,516	105,558	105,177	116,342	130,507	29,237	31,296	35,330	34,644	30,547
Re-exports	76,767	86,117	84,716	86,103	109,120	23,679	25,896	29,111	30,434	26,276
Imports	193,247	213,049	185,588	203,247	232,765	52,103	56,454	61,718	62,490	54,192
Value (at current prices)										
Exports	176,272	185,613	183,763	194,290	237,826	51,671	56,658	63,875	65,623	57,152
Domestic exports	103,589	107,535	105,918	116,325	135,939	30,114	32,391	36,499	36,934	32,032
Oil	16,551	15,911	13,473	15,143	22,867	4,902	5,287	5,768	6,911	5,920
Non-oil	87,038	91,624	92,445	101,182	113,072	25,213	27,104	30,732	30,024	26,113
Re-exports	72,683	78,077	77,846	77,965	101,888	21,557	24,267	27,375	28,689	25,119
Imports	185,183	196,605	169,863	188,141	232,175	50,125	56,515	62,108	63,426	54,682
(Index 1995 = 100)										
Export unit value 1/	95.5	90.1	89.5	89.8	94.1	92.3	93.7	94.5	95.4	94.5
Import unit value 1/	95.8	92.3	91.5	92.6	99.7	96.2	100.1	100.6	101.5	100.9
Implicit terms of trade	99.7	97.7	97.8	97.0	94.3	95.9	93.6	94.0	94.0	93.6
(Annual percentage change)										
Volume (at 1995 prices)										
Exports	10.2	11.6	-0.3	5.4	16.8	17.4	13.1	22.3	14.5	8.0
Domestic exports	9.3	11.2	0.7	8.1	10.2	10.7	6.9	16.8	6.8	5.9
Oil	3.6	0.1	8.5	-9.3	-6.0	-21.0	-14.8	4.9	12.1	19.1
Non-oil	10.3	12.9	-0.4	10.6	12.2	15.6	9.7	18.0	6.3	4.5
Re-exports	11.3	12.2	-1.6	1.6	26.7	27.9	22.8	30.3	26.0	11.0
Imports	9.6	10.2	-12.9	9.5	14.5	16.8	13.2	14.9	13.5	4.0
Value (at current prices)										
Exports	5.2	5.3	-1.0	5.7	22.4	22.8	18.7	28.4	19.9	10.6
Domestic exports	5.2	3.8	-1.5	9.8	16.9	19.4	13.4	22.9	12.4	6.4
Oil	20.6	-3.9	-15.3	12.4	51.0	53.5	42.6	59.6	49.3	20.8
Non-oil	2.7	5.3	0.9	9.5	11.8	14.5	9.1	17.8	6.3	3.6
Re-exports	5.3	7.4	-0.3	0.2	30.7	27.9	26.5	36.6	31.1	16.5
Imports	5.0	6.2	-13.6	10.8	23.4	24.6	22.9	25.1	21.4	9.1
Export unit value	-4.5	-5.6	-0.7	0.3	4.8	4.7	4.9	5.0	4.6	2.4
Import unit value	-4.2	-3.7	-0.8	1.1	7.8	6.7	8.6	8.9	6.9	4.9
Implicit terms of trade	-0.3	-2.0	0.1	-0.8	-2.7	-1.9	-3.4	-3.5	-2.1	-2.4

Sources: CEIC database; and data provided by the Singapore authorities.

1/ Calculated as residuals.

Table 36. Singapore: Disaggregated Trade Data, 1996–2001 1/ 2/

(In millions of Singapore dollars)

	1996	1997	1998	1999	2000	2000				2000
						Q1	Q2	Q3	Q4	Q1
Total exports										
Value	176,272	185,613	183,763	194,290	237,826	51,671	56,658	63,875	65,623	57,152
Price	95.6	90.2	89.2	89.8	95.0	93.4	94.0	96.3	96.1	92.5
Volume	110.0	122.8	123.0	129.2	149.5	132.0	143.9	158.3	163.1	147.5
Mineral fuels (Oil)										
Value	16,728	16,219	13,639	15,335	23,062	4,958	5,349	5,809	6,947	5,933
Price	116.7	112.0	87.5	110.0	173.4	159.4	162.6	185.1	186.3	160.9
Volume	103.5	104.5	112.5	100.6	96.0	89.8	95.0	90.6	107.6	106.4
Manufactured goods										
Value	10,072	10,402	8,355	8,454	9,136	2,075	2,418	2,351	2,292	1,999
Price	98.3	98.8	100.0	97.0	97.9	97.3	98.3	98.0	98.1	97.5
Volume	96.6	99.2	78.7	82.1	87.9	80.3	92.7	90.4	88.1	77.3
Machinery and equipment										
Value	116,262	122,474	122,120	128,810	158,832	33,825	37,290	43,226	44,492	37,803
Price	92.5	84.6	85.7	84.2	82.7	82.4	82.5	83.2	82.6	80.9
Volume	114.2	131.6	129.6	139.1	174.6	149.2	164.4	188.9	195.9	170.0
Other exports										
Value	33,210	36,518	39,650	41,690	46,796	10,814	11,601	12,489	11,893	11,416
Price 3/	95.4	88.0	86.2	87.2	92.6	90.9	91.3	94.4	94.0	89.7
Volume	105.4	125.6	139.2	144.7	152.9	144.0	153.9	160.2	153.2	154.0
Total Imports										
Value	185,183	196,605	169,863	188,141	232,175	50,125	56,515	62,108	63,426	54,682
Price	96.1	92.8	92.0	93.5	101.9	98.5	101.6	103.3	104.2	101.7
Volume	109.3	120.1	104.7	114.1	129.2	115.5	126.2	136.4	138.1	122.0
Mineral fuels (Oil)										
Value	17,313	18,635	13,647	17,075	27,987	5,636	7,346	6,663	8,343	6,688
Price	110.0	112.9	87.0	119.1	189.1	171.1	180.8	198.1	206.4	166.8
Volume	110.9	116.2	110.4	100.9	104.2	92.8	114.4	94.7	113.8	112.9
Nonfuel imports										
Value	167,870	177,970	156,216	171,066	204,188	44,489	49,170	55,445	55,084	47,995
Price 3/	94.7	90.9	92.5	91.0	93.5	91.5	93.9	94.2	94.4	95.4
Volume	109.3	120.8	104.2	115.9	134.7	120.0	129.1	145.2	144.0	124.1

Sources: CEIC database; and data provided by the Singapore authorities.

1/ Values in millions of Singapore dollars, volumes and prices in indices, 1995 = 100.

2/ Volumes in this table are calculated as residuals.

3/ Calculated by IMF staff using 1995 export and import weights.

Table 37. Singapore: Services and Income Accounts, 1996-2001

(In millions of Singapore dollars)

	1996	1997	1998	1999	2000	2000				2001
						Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1
Services Balance	14,417.0	17,093.4	2,554.8	8,569.1	9,710.4	2,040.2	2,692.5	3,091.7	1,886.0	2,059.2
Exports of Services	42,241.3	45,276.4	32,048.5	40,653.5	46,616.2	10,341.2	11,779.3	12,507.1	11,988.6	11,244.2
Transportation	7,322.3	7,658.9	7,457.0	7,758.0	9,198.7	2,030.4	2,211.4	2,443.8	2,513.1	2,173.7
Travel	10,551.7	9,444.9	8,228.3	8,806.6	9,950.1	2,412.1	2,406.9	2,554.4	2,576.7	2,302.7
Insurance	559.7	661.2	898.8	870.0	1,343.3	370.5	300.8	351.3	320.7	432.7
Government	137.9	137.9	162.4	137.9	137.6	34.4	34.4	34.4	34.4	34.4
Others	23,669.7	27,373.5	15,302.0	23,081.0	25,986.5	5,493.8	6,825.8	7,123.2	6,543.7	6,300.7
Imports of Services	27,824.3	28,183.0	29,493.7	32,084.4	36,905.8	8,301.0	9,086.8	9,415.4	10,102.6	9,185.0
Transportation	8,860.7	9,380.3	9,730.0	10,660.0	13,800.8	3,055.5	3,274.5	3,616.3	3,854.5	3,712.9
Travel	8,115.9	7,736.0	7,814.0	7,792.0	8,597.7	1,865.7	2,211.4	2,062.2	2,458.4	2,072.4
Insurance	1,414.5	1,484.4	1,226.6	1,360.5	1,664.5	362.3	405.5	445.8	450.9	381.8
Government	137.2	166.1	189.1	187.9	184.9	56.2	42.9	42.9	42.9	56.2
Others	9,296.0	9,416.2	10,534.0	12,084.0	12,657.9	2,961.3	3,152.5	3,248.2	3,295.9	2,961.7
Income Balance	2,031.3	9,599.8	8,579.0	11,358.0	10,554.7	2,663.5	2,885.9	2,541.8	2,463.5	2,210.1
Income Receipts	17,672.7	20,628.6	21,705.0	25,382.0	26,294.6	6,248.4	6,833.0	6,614.9	6,598.3	5,803.0
Of which: Investment income	17,578.2	20,498.6	21,574.2	25,244.9	26,146.7	6,211.4	6,796.6	6,577.6	6,561.1	6,562.1
Income Payments	15,641.4	11,028.8	13,126.0	14,024.0	15,739.9	3,584.9	3,947.1	4,073.1	4,134.8	3,592.9
Of which: Investment income	15,238.2	10,578.7	12,613.3	13,578.2	15,271.2	3,474.1	3,829.7	3,953.0	4,014.4	4,015.4

Sources: CEIC database; and data provided by the Singapore authorities.

Table 38. Singapore: Transfer Payments, 1996-2001
(In millions of Singapore dollars)

	1996	1997	1998	1999	2000	2000				2001
						Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1
Current Transfers (Net)	-1,505.2	-1,735.5	-1,837.0	-1,972.5	-2,342.1	-512.3	-536.9	-572.1	-720.8	-557.3
General Government	-324.2	-348.3	-242.0	-375.3	-504.3	-104.7	-121.0	-136.7	-141.9	-137.8
Inflow	9.2	12.2	16.6	15.5	15.8	4.0	4.0	3.9	3.9	4.1
Outflow	333.4	360.5	258.6	390.8	520.1	108.7	125.0	140.6	145.8	141.9
Other Sectors	-1,181.0	-1,387.2	-1,595.0	-1,597.2	-1,837.8	-407.6	-415.9	-435.4	-578.9	-419.5
Inflow	211.7	211.3	211.2	211.1	211.6	52.8	53.0	52.9	52.9	52.8
Outflow	1,392.7	1,598.5	1,806.2	1,808.3	2,049.4	460.4	468.9	488.3	631.8	472.3

Sources: CEIC database; and data provided by the Singapore authorities.

Table 39. Singapore: Financial and Capital Account, 1996-2001

(In millions of Singapore dollars)										
	1996	1997	1998	1999	2000	2000				2001
						Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1
Capital flows (including errors and omissions)	-7,673	-14,762	-29,050	-29,544	-25,741	-11,146	-2,912	-6,028	-5,655	-8,353
Capital and financial account balance	-6,999	-16,555	-36,884	-31,308	-19,932	-9,140	279	49	-11,120	-7,675
Capital account (Net)	-196	-257	-378	-324	-281	-71	-79	-71	-59	-66
Financial account (Net)	-6,803	-16,298	-36,506	-30,984	-19,651	-9,069	358	120	-11,061	-7,609
Direct investment	4,998	5,356	9,642	5,400	3,645	1,569	575	583	918	458
Inflow	14,625	19,254	10,570	12,198	11,017	3,433	2,439	2,446	2,699	2,323
Outflow	-9,627	-13,898	-928	-6,798	-7,371	-1,864	-1,863	-1,863	-1,781	-1,865
Portfolio investment	-16,480	-19,310	-11,728	-12,009	-23,889	-6,796	-6,196	-5,262	-5,635	-4,090
Assets	-17,802	-19,433	-12,848	-15,642	-20,300	-3,947	-5,413	-5,810	-5,130	-3,125
Liabilities	1,322	122	1,120	3,633	-3,590	-2,849	-783	548	-505	-965
Of which : Equity securities	1,339	125	1,111	3,637	-3,588	-2,849	-782	543	-500	-972
Other investment	4,678	-2,344	-34,420	-24,375	593	-3,842	5,979	4,799	-6,344	-3,977
Assets	-19,089	-61,905	-5,949	-35,720	-9,122	-17,902	8,341	4,547	-4,109	-11,286
Banks	-4,981	-18,385	3,711	-18,077	2,284	-13,811	6,454	5,474	4,166	-7,102
Other sectors	-14,108	-43,521	-9,660	-17,643	-11,406	-4,091	1,887	-927	-8,275	-4,185
Liabilities	23,767	59,561	-28,471	11,345	9,715	14,060	-2,362	251	-2,235	7,309
Banks	11,325	27,746	-21,401	5,441	12,799	12,165	-210	2,015	-1,171	6,052
Other sectors	12,442	31,815	-7,070	5,904	-3,085	1,895	-2,152	-1,764	-1,064	1,257
Net errors and omissions	-674	1,793	7,834	1,764	-5,809	-2,006	-3,191	-6,076	5,465	-678
Official reserves (net)	-10,407	-11,856	-4,981	-7,321	-11,835	2,171	-5,860	-4,394	-3,753	-979
Special drawing rights	-9	-38	-112	12	-30	-8	-3	-10	-9	-9
Reserves position in the IMF	2	-136	-50	-294	41	0	41	-1	0	-1
Foreign exchange assets	-10,399	-11,682	-4,819	-7,039	-11,846	2,179	-5,897	-4,383	-3,745	-969

Sources: CEIC database; and data provided by the Singapore authorities.

