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on

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Income Components of GDP:
Trends and Analysis

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INCOME COMPONENTS OF GDP:
TRENDS AND ANALYSIS

INTRODUCTION

1. As part of the on-going efforts to review and improve Singapore's economic statistics, the Department of Statistics has completed the development of annual income-based estimates of GDP[1] or GDP(I). The methodology underlying the compilation of GDP(I), as well as the historical data series from 1980 to 1997 will be disseminated in a report on the income approach to GDP, which will be released later this year. Annual estimates of GDP(I) will be released with the Annual Economic Survey. With the dissemination of income-based estimates of GDP, Singapore will be one of the few countries in the Asia-Pacific region to publish annual GDP estimates using all three approaches. Production-based and expenditure-based estimates of GDP have been available since the 1960s.

2. This paper examines the trends in the income components of GDP. Following a brief explanation of the income approach to GDP, the paper analyses the trends of the income components of GDP from 1980 to 1997. The paper concludes with an analytical comparison of the structure of Singapore's GDP with those of selected Asian economies and industrial countries.

INCOME APPROACH TO GDP

3. There are three approaches by which the gross domestic product can be estimated: the income approach, the expenditure approach, and the production approach. The income approach estimates GDP as the sum of all incomes such as profits and remuneration generated in the domestic production of goods and services. The income approach complements the production (or output) and expenditure approaches.

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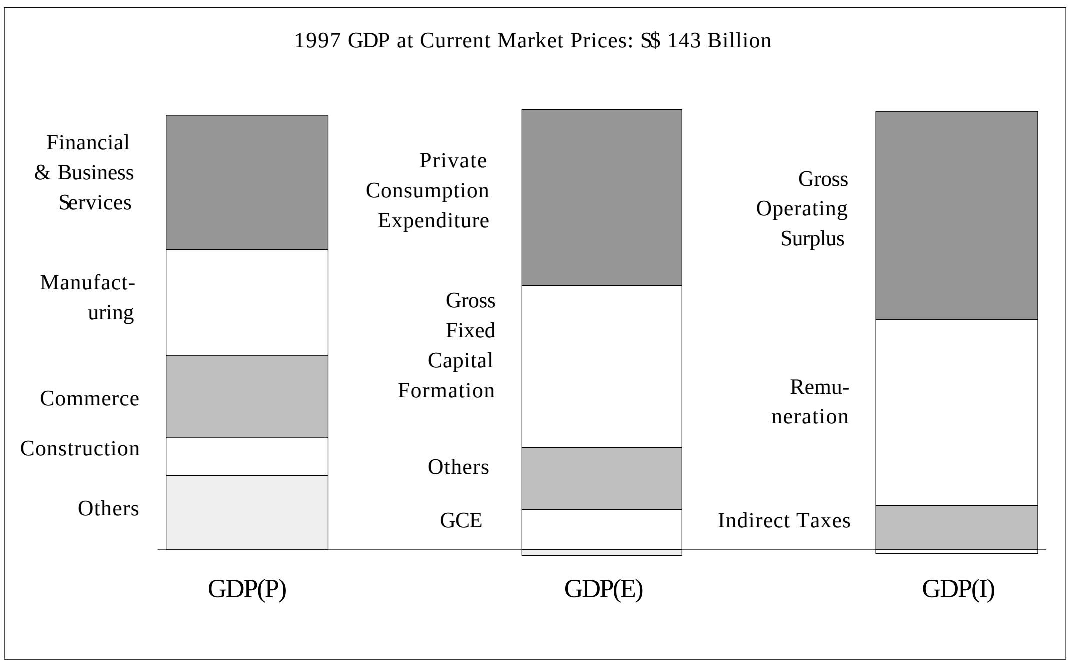
[1] Abbreviation for Gross Domestic Product. The income approach is denoted by GDP(I), production approach by GDP(P) and expenditure approach by GDP(E).

4. Chart 1 shows the components of GDP using the three approaches. The production approach shows that financial and business services contribute the largest share to GDP, followed closely by manufacturing. The expenditure approach shows that private consumption expenditure contributes the largest share to GDP followed by gross fixed capital formation while government consumption expenditure accounts for the smallest share. The income approach shows that gross operating surplus of enterprises is the largest component of GDP followed by remuneration.

Chart 1 Major Components of GDP in Singapore, 1997



5. These three approaches provide different but equivalent perspectives of GDP. Besides serving different analytical needs, they cross-validate the separate estimates of GDP. The income approach estimates GDP as the sum of the incomes receivable by each institutional sector from the domestic production of goods and services. The income components include compensation of employees (remuneration as return to labour of the households), gross operating surplus (profits as return to capital of corporations) and taxes (and subsidies, if any) on production and on imports[2] (indirect taxes paid to government).

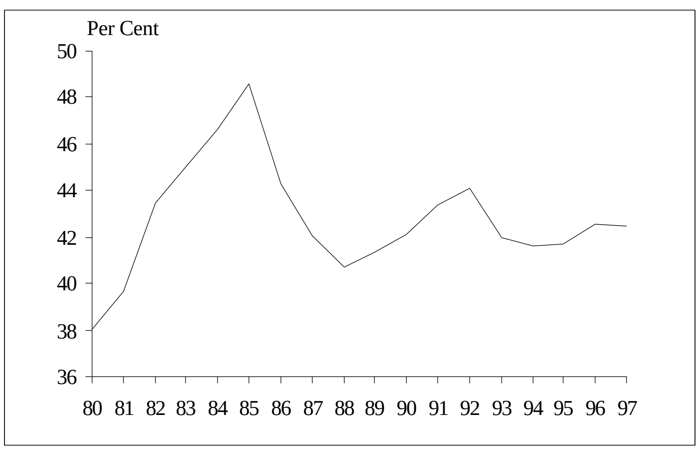
[2] Taxes on production and on imports was previously known as indirect taxes.

OVERALL TRENDS

Trend in Remuneration

6. Remuneration (wages and salaries) is the second largest income component of GDP, comprising nearly 43 per cent of GDP(I) at current market prices in 1997. Over the years, the share of remuneration in GDP(I) varied counter-cyclically, rising during economic slowdown and falling during economic expansion. Remuneration is a key component of production costs, and rising remuneration share means that remuneration is increasing faster than profits. A sustained increase in the share of remuneration tends to raise the cost of production, which will have an adverse impact on competitiveness.

Chart 2 Share of Remuneration in GDP(I) at Current Market Prices

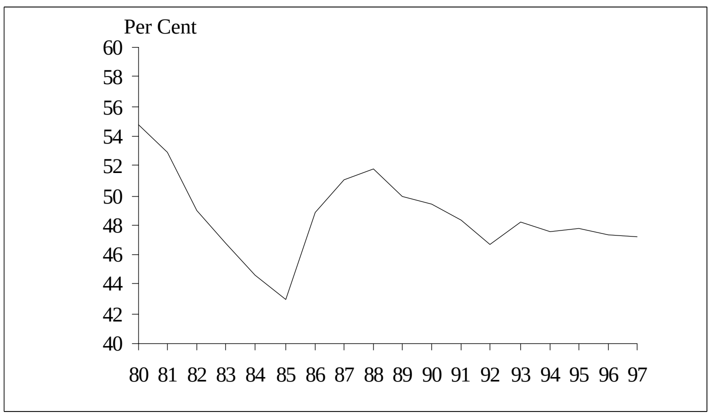


7. As Chart 2 indicates, a rising remuneration share preceded the recession (in 1985) and the slowdown (in 1992). This eroded the profitability of Singapore companies. However, in recent years between 1993 and 1997, Singapore companies have been successful in moderating increases in wages and salaries. Remuneration share has therefore been maintained at a relatively stable level of around 42 per cent.

Trend in Profits

8. Profits is the largest income component of GDP, accounting for 47 per cent in 1997. Unlike remuneration share, profit share varied pro-cyclically, rising during economic expansions and falling during economic slowdown. Wages and salaries tend to be less responsive than profits to changes in economic conditions. Declining profits provide early signals of an imminent economic slowdown. This was the case in 1985 and 1992. However, the impact of the financial turmoil on profits was not apparent in 1997, as profit share has so far remained relatively stable (Chart 3). This is consistent with the assessment that our domestic economic fundamentals are sound.

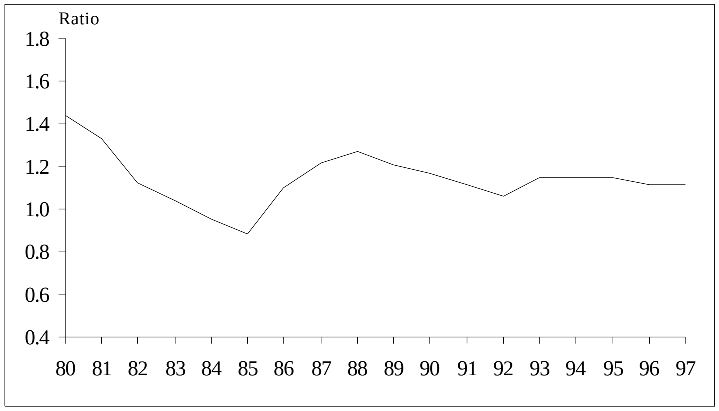
Chart 3 Share of Profits in GDP(I) at Current Market Prices



Profit-to-Remuneration Ratio

9. The profit to remuneration ratio can be used as an indicator of the future trend of the economy. Chart 4, which plots this ratio, shows that the ratio tends to move very closely with the level of economic activity. The ratio was able to indicate the turning points of the economy. A declining ratio tends to suggest lower economic activity. In fact, prior to the recession in 1985, the ratio has been declining since 1982, and reached its lowest level of 0.9 in eighteen years in 1985. Similarly, the ratio declined slightly in 1992. Since 1992, the ratio has shown gradual improvement before reaching a plateau in 1996 and 1997.

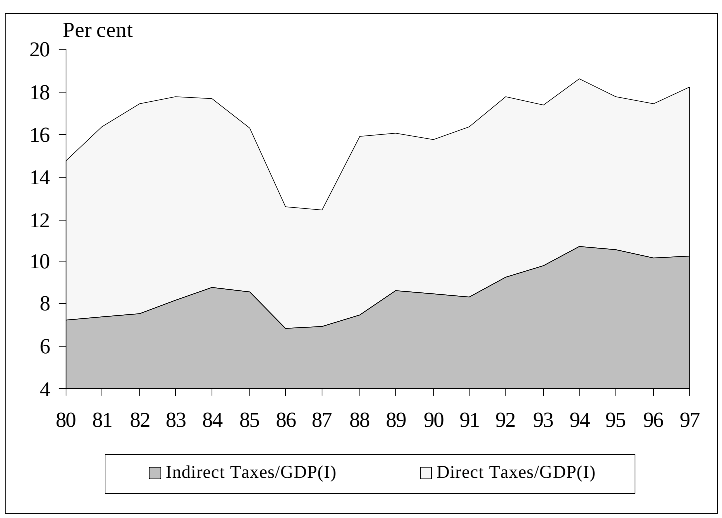
Chart 4 Profit-to-Remuneration Ratio, 1980-1997



Trend in Indirect Taxes

10. The share of indirect taxes (on production and on imports) has increased from 7.2 per cent in 1980 to around 10 per cent of GDP in 1997 (see Chart 5). The changes in the share of taxes reflected fiscal measures to achieve desired social and economic objectives. Motor related taxes such as additional registration fees and certificate of entitlement (COE), foreign workers' levy and goods and services tax (GST) were the main reason for the gradual rise in tax share from 1987 to 1994.

Chart 5 Share of Indirect Taxes, and Gross
Tax Burden as a ratio of GDP(I) at Current Market Prices



Tax Burden in Singapore

11. The increase in the share of indirect taxes in GDP does not suggest an increase in the tax burden, which is based on both indirect taxes and direct taxes on income and profits. This measure reveals that the overall tax structure in Singapore has been relatively stable over the years. Gross tax burden is estimated to range between 16 per cent and 19 per cent of GDP in the 1990s.

COMPARISON WITH SELECTED COUNTRIES

12. The increases in wages and salaries enjoyed by Singaporeans have not resulted in a deterioration in profit share. Table 1 compares the shares of remuneration, profits and indirect taxes of the Singapore economy with selected economies. The exclusion of ASEAN countries like Malaysia and Philippines from the comparison is due to the fact that data on their income components of GDP are not available.

Table 1 Shares of Remuneration, Profits and Indirect Taxes by Selected Economies[3]

Per Cent

Economy	Remuneration	Profits	Indirect Taxes (less subsidies, if any)	Statistical Discrepancy
Singapore[4]	42.7	47.5	10.3	-0.5
Taiwan[3]	53.2	37.5	9.3	-
S Korea[3]	47.6	39.0	13.4	-
Hong Kong[1]	45.9	48.1	5.6	0.4
Thailand[2]	28.7	59.3	12.0	-
United States[4]	58.2	34.5	7.3	-
Japan[3]	55.3	36.5	7.4	0.8
Canada[3]	52.4	34.2	13.4	-
France[3]	52.1	35.0	12.9	-

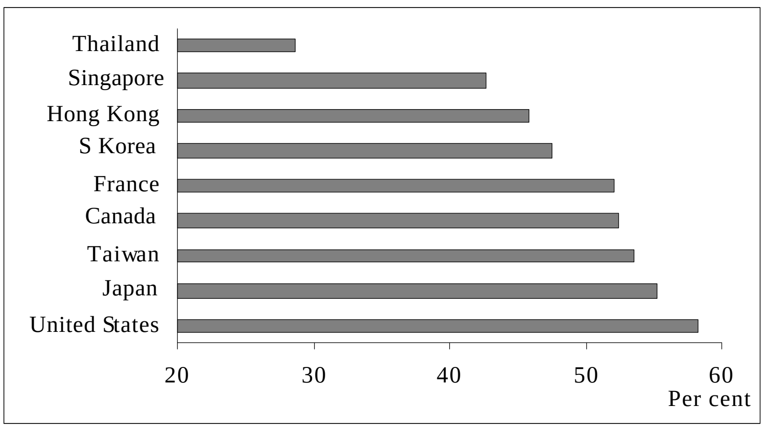
[1] Refers to data for 1994; [2] Refers to data for 1995; [3] Refers to data for 1996; [4] Refers to data for 1997

[3] Sources: OECD Quarterly National Accounts, National Income in Taiwan Area, National Accounts of Korea, National Accounts of Thailand and Hong Kong - Estimates of GDP.

Share of Remuneration

13. Remuneration share in GDP in Singapore is substantially lower than that for the industrialised countries. In 1997, our remuneration share was 43 per cent of GDP, which compared favourably with the United States (58 per cent), Japan (55 per cent), Canada (52 per cent) and France (52 per cent). Among the Asian newly industrialising economies[4] (NIEs), Singapore has the most competitive wage structure with the lowest remuneration share, while Taiwan has the highest remuneration share (Chart 6).

Chart 6 Share of Remuneration in GDP for Selected Economies

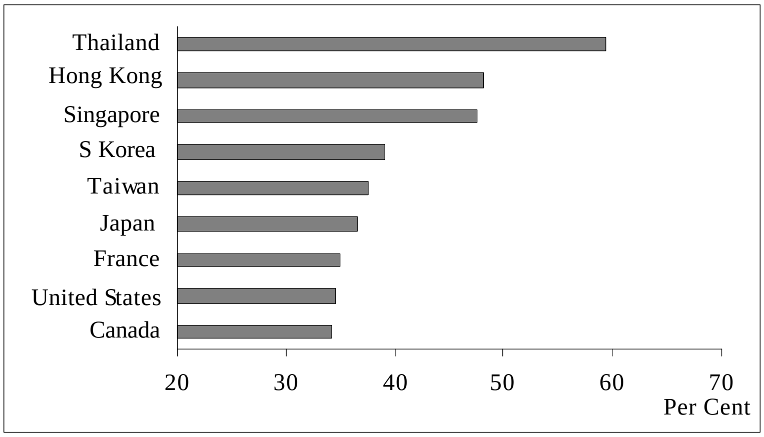


Share of Profits

14. Singapore's profit share at about 48 per cent is comparable to Hong Kong, and, except for Thailand, is higher than all other countries compared (Chart 7). The high share of profits for Thailand is due to the very large proportion of self-employed farmers, since income of the self-employed are treated in the national accounts as their operating surplus. The relatively high profit share for Singapore is consistent with the observation that Singapore is a high-saving and high-investment economy.

[4] Includes South Korea, Taiwan, Hong Kong and Singapore.

Chart 7 Share of Profits in GDP for Selected Economies



Profit-to-Remuneration Ratio

15. Singapore's low remuneration share and high profit share has resulted in the highest profit-to-remuneration ratio among the industrialised countries and the Asian NIEs. This suggests that Singapore has been able to remain competitive, and provides adequate returns to corporations operating in Singapore (Table 2).

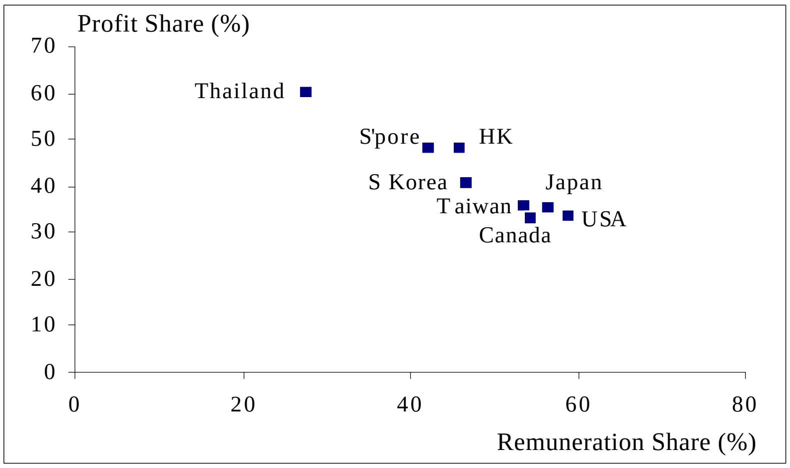
Table 2 Profit-to-Remuneration Ratio

Economy	Profit-to-Remuneration Ratio
Singapore[4]	1.11
Taiwan[3]	0.70
S Korea[3]	0.82
Hong Kong[1]	1.05
Thailand[2]	2.07
United States[4]	0.59
Japan[3]	0.66
Canada[3]	0.65
France[3]	0.67

[1] Refers to data for 1994; [2] Refers to data for 1995; [3] Refers to data for 1996; [4] Refers to data for 1997

16. In the course of economic development, a country's comparative advantage usually shifts from the production of lower value-added to capital- and technology-intensive products. This shift is generally reflected in the income structure of GDP (as well as the ratio of profits to remuneration) as a country evolves from a developing country to a NIE, and finally to an industrialised country (Chart 8).

Chart 8 Share of Profits and Remuneration in GDP - Scatter Diagram



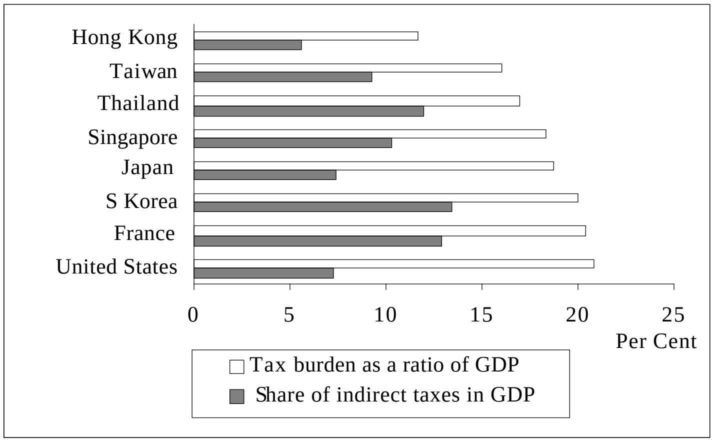
17. An examination of Chart 8 reveals that as countries become more developed and shift to higher value-added production, remuneration share tends to increase and consequently, profits share tends to decline. Thus, it is not surprising that Thailand has the highest ratio of 2.1 among all the selected countries, higher than the NIEs of around 1.0, and much higher than the industrial economies of around 0.6 (Table 2). However, while Singapore's remuneration and profits share are consistent with its status as an NIE, it has been able to remain competitive among the Asian NIEs.

Share of Indirect Taxes

18. Chart 9 shows that among the four Asian NIEs, Singapore's share of indirect taxes at 10 per cent was the second highest, after Korea (13 per cent). Singapore's share exceeds that of Hong Kong (5.6 per cent), Taiwan (9.3 per cent) and

industrialised countries such as the United States (7.3 per cent) and Japan (7.4 per cent).

Chart 9 Share of Indirect Taxes and Gross Tax Burden[5]



19. As explained above, Singapore's high share of indirect taxes arose from fiscal measures intended to achieve social and economic objectives such as the reduction of congestion on our roads and the over-dependence on foreign workers. This is compensated by a relatively low direct taxes on income. Thus, Singapore's overall tax structure has remained more competitive than the industrialised countries. Gross tax burden as a ratio of GDP for Singapore at 18 per cent in 1997 was the 3rd lowest among the NIEs, after Hong Kong's 12 per cent and Taiwan's 16 per cent. When compared with the industrial economies, tax burden in Singapore was lower than the United States (21 per cent) and Japan (19 per cent). For these countries, direct taxes on income as a share of GDP was significantly higher than Singapore's.

[5] Sources: OECD Quarterly National Accounts, Financial Statistics of Japan, IMF's Government Finance Statistics Yearbook, Quarterly Bulletin Bank of Thailand, Taiwan Statistical Data Book, Hong Kong Monthly Digest of Statistics, US Statistical Abstract & Survey of Current Business.

CONCLUSION

20. Singapore's profit-to-remuneration ratio has been sustained at a higher level than the industrialised economies and the other Asian NIEs. The increases in wages and salaries enjoyed by Singaporeans have therefore not resulted in a loss of profitability. The relatively high share of indirect tax in GDP is more than compensated by Singapore's lower share of direct taxes in GDP, resulting in a tax burden which is lower than the industrialised countries, and comparable to the other Asian NIEs. Singapore has been successful in maintaining its relative competitiveness among the Asian NIEs.

21. The profit-to-remuneration ratio tends to indicate turning points of the economy. The ratio has remained stable during the last two years, and has so far not been adversely affected by the recent currency turmoil. Wage restraint will help to control wage costs and avoid substantial decline in this ratio. This will ensure that businesses operating in Singapore continue to be profitable.

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