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Milestones in the Singapore National Accounts

The national accounts provide an important statistical framework for the compilation of economic statistics. The Singapore national accounts have been developed and modified over the last 40 years to meet the need for timely, good quality and internationally comparable economic statistics.

The first set of national accounts estimates of Singapore was compiled by the Singapore Department of Statistics (DOS) in 1961 for the period 1956 to 1960; these early estimates were essentially expenditure aggregates relating to domestic consumption and gross capital formation. In 1967, the output approach to national income estimation was undertaken for the years 1960 to 1965.

A major exercise to reconcile these two sets of GDP estimates was carried out in 1974, which also saw the introduction of annual estimates of output-based GDP at constant (reference year 1968) price. Quarterly estimates of GDP were compiled and published in 1975. The first set of input-output tables (reference year 1973) was completed and released in 1978. Since then, five sets of input-output tables (reference years 1978, 1983, 1988, 1990 and 1995) have been compiled.

In 1988, the first rebasing exercise (to reference year 1985) was carried out. A year later, seasonally adjusted data series were introduced together with the quarterly estimates of constant price expenditure-based GDP estimates. The second rebasing exercise (to reference year 1990) was completed in 1996. With the compilation and dissemination of annual estimates of income-based GDP in 1998, Singapore now compiles GDP estimates using all three approaches (output, expenditure and income).

In 1999, a new reporting format, which facilitates the identification of more services industries, was introduced for the output-based GDP estimates. In the same year, a review was carried out on the methodology for estimating the value-added of financial services, which helped to enhance the reliability of our estimates. The introduction of quarterly estimates of output-based GDP at current prices in the following year contributed to our full compliance of the IMF s Special Data Dissemination Standards.

Even as improvements were made to the core accounts, DOS collaborated with the Singapore Tourism Board to jointly develop a tourism satellite account (TSA), in recognition of the importance and value of tourism to the Singapore economy. The TSA has its basis from the concept of satellite account introduced in the 1993 System of National Accounts.

The successful completion of the recent rebasing exercise (to reference year 1995) represents the latest significant development in Singapore s national accounts. The adoption of basic price (instead of market price) to compile output-based GDP estimates will enhance the comparability of our estimates of output and value-added by industry, as well as important derived statistics such as labour productivity (value-added per worker) by industry.

Rebasing of the Singapore National Accounts to Reference Year 1995

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Introduction

The Singapore Department of Statistics (DOS) has recently completed the rebasing of the Singapore System of National Accounts (SSNA) to reference year 1995. The estimates of production and expenditure on the Gross Domestic Product (GDP) at constant prices will consequently be expressed in terms of prices prevailing in 1995, instead of prices prevailing in 1990.

The rebasing exercise not only revalues GDP on the basis of prices prevailing at the new base year, but also serves to reconcile the different estimates of GDP and provides the occasion for methodological and conceptual reviews and improvements. The rebased GDP series has been adopted as the basis for reporting GDP growth rates with effect from the Annual Economic Survey of Singapore 2002.

This article outlines and explains the various methodological changes and improvements, in particular, the adoption of basic price in the valuation of output. Their consequent impact on real GDP estimates is also presented.

Change in Valuation of Output

Three different prices for the valuation of output are defined in the United Nations (UN) 1993 System of National Accounts (SNA93) as follows :

(a) Basic price is "the amount receivable by the producer from the purchaser for a unit of a good or service produced as output minus any tax payable, and plus any subsidy receivable, on that unit as a consequence of its production or sale. It excludes any transport charges invoiced separately by the producer." (SNA93, para 6.205a)

(b) Producer's price is "the amount receivable by the producer from the purchaser for a unit of a good or service produced as output minus any value-added tax (VAT) or similar deductible tax, invoiced to the purchaser. It excludes any transport charges invoiced separately by the producer." (SNA93 para 6.205b)

(c) Purchaser's price is "the amount paid by the purchaser, excluding any deductible VAT or similar deductible tax, in order to take delivery of a unit of a good or service at the time and place required by the purchaser. The purchaser's price of a good includes any transport charges paid separately by the purchaser to take delivery at the required time and place." (SNA93 para 6.215)

The relationship between them can be given as follows :

	Purchaser's Price
Minus	Trade and Transport Margins
Equals	**Producer's Price**
Minus	Taxes on Products (Sales Tax, Manufacturers' Excise Tax, and/or Non-Deductible VAT)
Plus	Subsidies on Products
Equals	**Basic Price**

The difference between basic price and producer's price is the inclusion of excise, sales and other similar taxes on products in the latter. Intermediate consumption is always valued at purchaser's price. Since gross value-added (GVA) is output less intermediate consumption, the different prices will yield two different measures of GVA depending on whether basic price or producer's prices is used to value output.

In a world without taxes and subsidies, these different prices would not arise. Further, in the absence of a VAT such as GST or other deductible taxes, producer's price is equivalent to market price, which is the amount of money willing buyers pay to acquire something from willing sellers. However, this is no longer the case once VAT is introduced since "in the presence of VAT, the producer's price excludes invoiced VAT, and it would be inappropriate to describe this measure as market prices" (SNA93 para 6.227).

Singapore, like many other countries, has been compiling and publishing GVA by industry at producer's price. The change in tax regime following the introduction of GST in 1994 has made this no longer appropriate, making it necessary to shift to basic price. Basic price is, in fact, the "preferred method of valuation, especially when a system of VAT or similar deductible tax is in operation" (SNA93 para 6.218).

The re-compilation of GVA at basic price will remove the impact or effect of taxes (subsidies) on products. As these tend to fall mainly on a few industries, the relative share of GVA (or GDP) by industry will be more correctly reflected. In addition, as most OECD countries (eg Australia, UK, Netherlands) compile GVA at basic price, the adoption of basic price as the basis of valuation will enhance the international comparability of Singapore's estimates of GVA and labour productivity (value-added per worker) by industry (Table 1).

TABLE 1 VALUATION OF VALUE-ADDED

Country	VAT	Valuation of Value-Added	
		Basic Price	Producer's Price
Australia	✓	✓	
Canada	✓	✓	
Norway	✓	✓	
The Netherlands	✓	✓	
United Kingdom	✓	✓	
Japan	✓		✓
South Korea	✓		✓
Hong Kong	x		✓
Malaysia	x*		✓
United States	x*		✓

* Sales Tax

Taxes on products are payable on goods and services when they are produced, delivered, sold, transferred or otherwise disposed of by their producers. They include taxes and duties on imports, goods and services tax and other taxes on products, eg excise duties, COE/ARF, betting and sweepstake duties, hotel cess etc.

Table 2 shows the breakdown of these taxes in reference year 1995 and in 2001. The most significant of these taxes is COEs/ARFs, which amounted to $3.5 billion in 2001, imposed on the sale of cars and attributed to the wholesale and retail sector.

TABLE 2 TAXES ON PRODUCTS, 1995 AND 2001

$ Million

	1995	2001
Taxes on Products	**8,394.5**	**9,947.0**
Of which :		
Taxes & Duties on Imports	751.9	1,105.3
Goods & Services Tax	1,647.4	2,013.0
Other Taxes on Products	5,995.2	6,828.7
Excise Duties (include Tax on Petroleum, Tobacco, Liquor, etc)	837.6	734.7
COE/ARF	3,090.4	3,548.7
Betting, Sweepstakes & Lottery Duties	981.6	1,573.5
Stamp Duties	990.7	757.3
Others	94.9	214.5

Impact on Major Economic Aggregates

The adoption of basic price in the compilation of GVA has resulted in significant changes in the industrial distribution (Table 3) with significant decline in the share of wholesale and retail trade. The relative shares of manufacturing, transport and communications, and business services have shown corresponding increases.

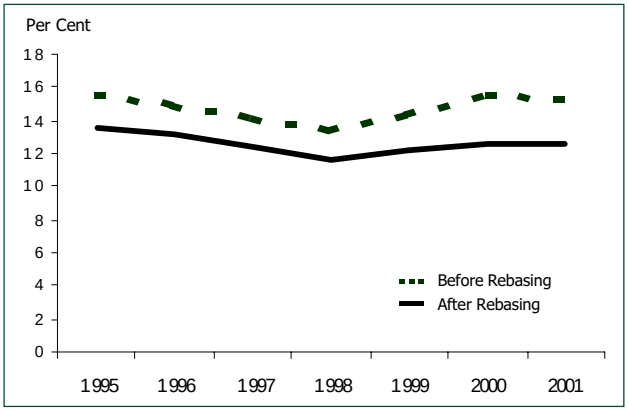
TABLE 3 SHARE OF NOMINAL GROSS VALUE-ADDED BY INDUSTRY

Per Cent

	1995		2001	
	Before Rebasing	**After Rebasing**	Before Rebasing	**After Rebasing**
Total	100.0	**100.0**	100.0	**100.0**
Goods Producing Industries	32.4	**33.9**	30.1	**31.1**
Manufacturing	23.9	**25.0**	22.3	**23.1**
Construction	6.8	**7.1**	5.8	**6.1**
Utilities	1.5	**1.5**	1.8	**1.8**
Other Goods Industries	0.2	**0.2**	0.1	**0.1**
Services Producing Industries	64.2	**62.6**	66.4	**65.2**
Wholesale & Retail Trade	15.4	**13.5**	15.2	**12.6**
Hotels & Restaurants	2.9	**2.7**	2.6	**2.4**
Transport & Communications	11.6	**12.1**	10.6	**11.2**
Financial Services	11.3	**11.1**	12.4	**12.9**
Business Services	12.8	**13.4**	13.7	**14.7**
Other Services Industries	10.2	**9.8**	11.9	**11.4**
Owner-Occupied Dwellings	3.4	**3.5**	3.5	**3.6**

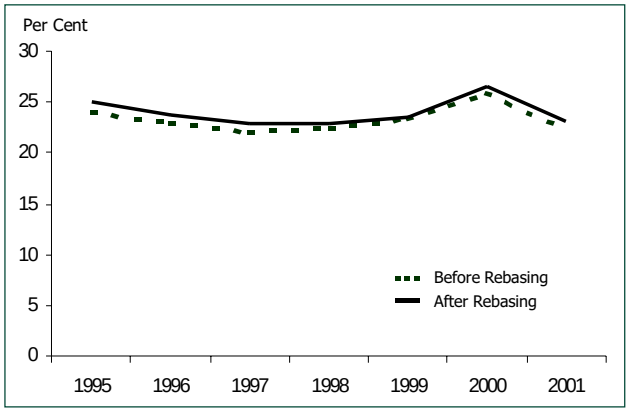
The share of wholesale and retail trade in GVA declined from 15.4 per cent to 13.5 per cent in reference year 1995, and from 15.2 per cent to 12.6 per cent in 2001 (Chart 1). The change is due to the fact that GVA of wholesale and retail trade would have included COE/ARF and other taxes on products at producer's price, but not at basic price.

CHART 1 CHANGES IN SHARE OF WHOLESALE AND RETAIL TRADE IN NOMINAL GVA



The increase in the relative share of manufacturing from 23.9 per cent (before rebasing) to 25 per cent (after rebasing) in 1995 (Chart 2) was due not just to change in the basis of valuation. Part of the increase could be attributed to the under-coverage of smaller manufacturing establishments identified through commodity balancing as part of the reconciliation exercise with the 1995 input-output tables.

CHART 2 CHANGES IN SHARE OF MANUFACTURING IN NOMINAL GVA



The changes in the annual growth rates have been relatively moderate, with real GDP growth in the rebased series lower for the most recent years 1998 to 2001 (Table 4). This is consistent with the observations of many statistical offices that real GDP growth estimates are more likely to be revised downward when the base year is updated to a more recent period. This is because goods that grow more rapidly tend to be over-weighted as their prices are usually falling at a faster rate.

TABLE 4 ANNUAL REAL GDP GROWTH

Per Cent

	Before Rebasing	After Rebasing
1995	8.0	8.0
1996	7.7	8.3
1997	8.5	8.5
1998	–0.1	–0.8
1999	6.9	6.4
2000	10.3	9.9
2001	–2.0	–2.1

Other Methodological Revisions and Improvements

The close and careful examination of data sources and methodology undertaken during the rebasing exercise also provides the occasion for several improvements and non-routine revisions, including updating and revisions to national accounting concepts. These improvements, revisions and updating serve to ensure that our national accounts estimates better reflect the underlying economic reality.

(a) Methodological Revisions

Value-added of Financial Services

To ensure that the methodology used to assess the growth and performance of financial services continues to provide accurate, relevant and timely estimates, DOS undertook with the Monetary Authority of Singapore (MAS) in 1997, a comprehensive review of the methodology used to estimate the value-added of financial services.

The review resulted in the adoption of more output-based measures such as fees and commissions received in place of traditional input-based measures such as employment. Changes in actuarial reserves were included in the assessment of the output of insurance services, consistent with industry practices as well as with the SNA93. These changes and revisions were introduced and explained in an information paper 'Value-added of Financial Services: Revision in Methodology and Estimates' released in July 1999.

(b) Review of Conceptual Treatment

Royalties

SNA93 recommends the re-classification of royalties paid and received from factor income to payments/ receipts for services. The re-classification would result in the inclusion of royalties as intermediate consumption (for business establishments who pay royalties) or output (for business establishments who receive royalties). This recommendation was adopted by DOS with effect from the 1999 Annual Economic Survey of Singapore. In general, nominal GDP was lowered as Singapore-based establishments paid more royalties than they received it.

Computer Software

SNA93 has recommended that computer software which are used in the production of goods and services for more than one year are to be treated as investment instead of intermediate consumption. The adoption of this would have the impact of increasing estimates of gross fixed capital formation and hence raise the level of GDP. With the view to adopting this recommendation, DOS has since 1999 introduced modifications to the various annual surveys to collect information on the expenditure on software.

DOS is presently reviewing and assessing the quality of the data collected as well as the practices and experiences of countries that have implemented this recommendation. DOS will also work with the Infocomm Development Authority of Singapore (IDA) to identify appropriate monthly or quarterly indicators for deriving timely and reliable quarterly estimates of software expenditure.

(c) Changes in Industrial Classification

Singapore Standard Industrial Classification (SSIC)

In 1999, DOS adopted a new reporting format for output-based GDP estimates when implementing the SSIC 1996 in the national accounts. This new format provides explicit recognition of the increasing importance of services through the separate identification of goods and services producing industries.

More detailed estimates of GDP by industry are also provided through the decomposition of GDP into nine major economic sectors instead of the previous five. The details of this new reporting format are provided in an information paper 'Implementation of SSIC 1996 in the National Accounts (New Reporting Format for Output-based GDP)' released in September 1999.

In the latest rebasing exercise, the industrial classification used for output-based GDP is further updated to SSIC 2000. The general structure of SSIC 2000 is essentially similar to SSIC 1996 and no change in reporting format is necessary.

The adoption of SSIC 2000 ensures that new and emerging economic activities such as the development of e-commerce applications, software and multimedia works and the research experimental development on life sciences are captured. The shift in economic activities across economic sectors will also be reflected under the new classification, eg establishments which engage in publishing activities (without doing their own printing) are transferred from the manufacturing sector to the business sector.

(d) Improvements in Coverage and Data Sources

Survey of International Trade in Services (TIS)

The balance of payments (BOP) accounts are closely related to the national accounts not only in theory but also in practice. In the case of the Singapore System of National Accounts, the relationship is reinforced by the fact that estimates for the BOP are subsequently incorporated in the relevant external components of the national accounts. Along with this rebasing exercise, the BOP estimates and these components have been updated to incorporate the results of the Survey of Trade in Services (TIS) from reference year 1995 onward.

(e) Updating/Changes in Terminology

Gross National Income

Unlike GDP which measures the production of goods and services within an economy, Gross National Product (GNP) measures the income receivable by the resident institutional units of an economy. To emphasize that GNP is an income-based concept, SNA93 recommended that it be renamed Gross National Income (GNI). DOS has adopted this recommendation, and will use the term GNI instead of GNP.

Resident Institutional Unit

An institutional unit is an economic entity that is capable, in its own right, of owning assets, incurring liabilities and engaging in economic activities and in transactions with other entities.

An institutional unit is resident in a country when it has a centre of economic interest in the economic territory of that country.

Financial Intermediation Services Indirectly Measured (FISIM)

SNA93 also recommends that imputed bank service charge (IBSC) be re-termed as FISIM. It further recommends the allocation of FISIM among the different users in the various industries. This differs from its predecessor, the 1968 System of National Accounts (SNA68), where it is treated as the intermediate consumption of a nominal industry.

DOS has re-termed IBSC as FISIM. In addition, DOS will work closely with the Monetary Authority of Singapore (MAS) to develop the necessary data sources and methodology to allocate FISIM across the different industries as recommended. The allocation of FISIM will raise the level of GDP, and is likely to result in an increase in the financial sector's share of GDP. Since the relative size of FISIM varies across economies, the allocation of FISIM will enhance further the international comparability of our GDP estimates.

Conclusion

The successful completion of the rebasing of the national accounts, including the reconciliation of the various national accounts estimates and the continuing methodological and conceptual improvements introduced in the last few years, ensure that our national accounts continue to provide reliable, accurate and timely economic statistics. They also ensure that our methodology and practices conform to international standards and practice.

Quarterly Growth Rates

by
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Introduction

Short-term macro-economic indicators, in particular real (or constant price) GDP estimates are crucial to the monitoring and tracking of current economic developments. Quarterly changes or growth rates[1] very often provide the initial basis of any assessment of trends, growth momentum and anticipation of turning points.

The comparison or presentation of quarterly changes are inherently more difficult than that for annual changes for the following two reasons. First, the four quarters within one and the same year have different numbers of working days, and are affected by regular and seasonal effects on production and expenditure. Second, the same quarters in different years may also differ, eg in the number of working days.

Three Methods

Three methods are used by national statistical agencies to calculate and present quarterly growth rates. These are as follows :

(a) measuring the change compared with the corresponding quarter in the previous year;

(b) measuring the change since the previous quarter; and

(c) extrapolating the growth since the previous quarter to an annual growth rate.

1 While the focus of this paper is on quarterly growth rates, the discussion and arguments apply equally to other sub-annual growth rates, in particular monthly growth rates.

A Year-on-Year Growth Rate

This method calculates quarterly growth rates as the percentage change in real GDP from the corresponding quarter in the previous year. It yields the y-o-y (year-on-year) or nsa (non-seasonally adjusted) growth rate and is used in most European and Asian countries, including Singapore.

The merits of this method are its ease of comparison with annual growth rates and its implicit seasonal adjustment. For example, the seasonally higher 4th quarter (which includes the Christmas and year-end festive period) is compared with the 4th quarter of the previous year. Thus, y-o-y growth rates display an underlying trend but remains sensitive to irregular effects and deviations from expected seasonal behaviour.

Y-o-y growth rates do have some disadvantages. First, no correction is made for differences in the number of working days arising from leap year or moving holidays such as Hari Raya. More working days could, for example, result in a higher growth rate even when the underlying trend is declining.

Second, the sensitivity to irregular effects could result in an inappropriate interpretation in a subsequent year. For example, if economic activity declines sharply in a particular quarter because of an unexpected shock, a 'normal' quarter in the subsequent year will show an exceptionally strong growth. This is often referred to as a base effect.

To illustrate the base effect, consider Chart 1 which shows the growth rates in the real value-added of hotels and restaurants from 1990 to 1992. Because of the Gulf War, tourist arrivals declined sharply resulting in a decline of 5.3 per cent in the real value-added of hotels and restaurants in 1Q91. Hotels and restaurants grew strongly by 16.4 per cent in 1Q92 when the underlying trend returned to normal.

Third, y-o-y growth rates are slower in identifying turning points. Chart 2, for example, shows that real GDP contracted sharply by 6.1 per cent in 4Q01 on a y-o-y basis. Growth momentum, however, has already improved, as reflected in the positive q-o-q (quarter-on-quarter) change in the seasonally adjusted real GDP in 4Q01.

B Quarter-on-Quarter Growth Rate

A second method is to compare the change in real GDP with the preceding quarter. This method provides q-o-q growth rates. Since q-o-q growth rates are meaningful only if the data are seasonally adjusted, this method can be used only for seasonally adjusted data. The q-o-q growth rates are therefore also referred to as sa (seasonally adjusted) growth rates. Most European countries compute and present the q-o-q growth rates as supplementary information to the y-o-y growth rates.

CHART 1 HOTELS AND RESTAURANTS REAL VALUE ADDED
(Year-on-Year Growth Rate)

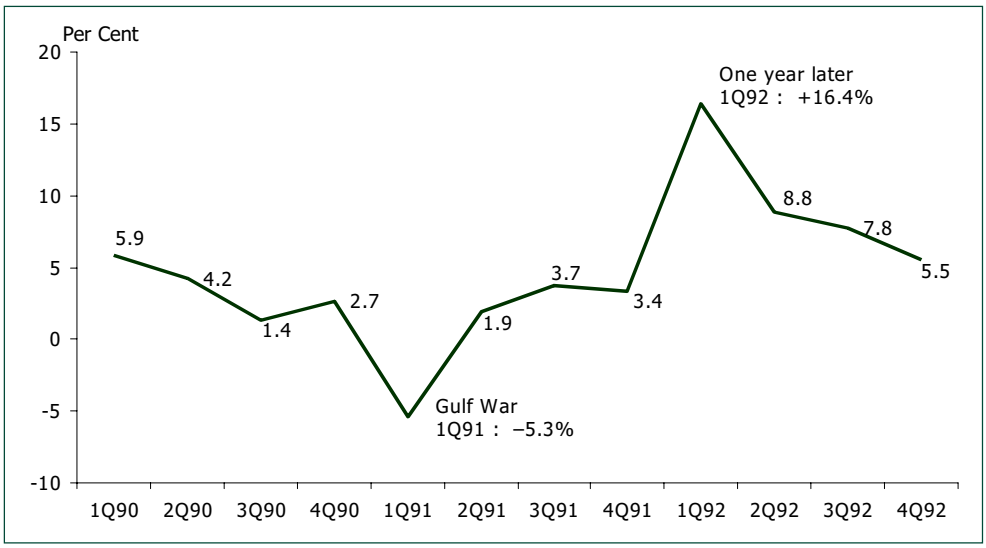
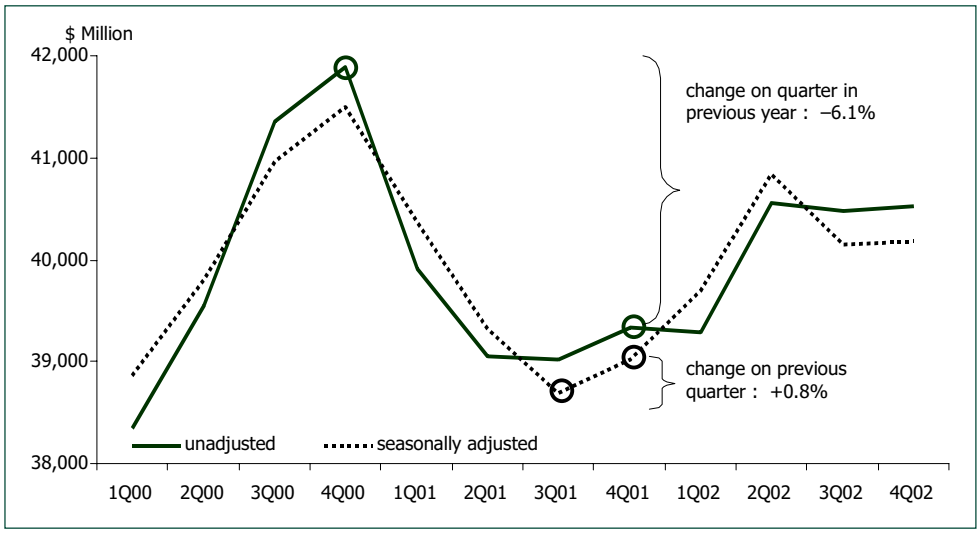


CHART 2 REAL GDP
(At 1995 Market Prices)



The main advantage of this method is that it is relatively quick in the identification of turning points. Chart 2 shows, for example, that real GDP expanded by 0.8 per cent on a q-o-q basis in 4Q01 even though on a y-o-y basis, real GDP growth has remained negative.

C Annualised Q-o-Q Growth Rate

One major disadvantage of the q-o-q growth rates is that they are of a different order of magnitude from the annual rate. To correct this, the q-o-q growth rates are annualised using the following formula :

$$a = (1 + r)^4 - 1$$

where

a = annualised quarter-on-quarter growth rate

r = original quarter-on-quarter growth rate

The annualised rate, which is referred to as saar (seasonally adjusted annualised rate), basically extrapolates the q-o-q growth rate on the assumption that the economy will grow at that rate over a one-year period. The saar therefore has the same properties as q-o-q or sa growth rate but with the further advantage that it is of the same order of magnitude as an annual growth or y-o-y growth rate.

This method is used by, among others, the US and Japan. Singapore has, since 3Q 1986, compiled and disseminated the saar as supplementary information to the y-o-y growth rate. The q-o-q growth of 0.8 per cent in Singapore's 4Q01 real GDP translates to an expansion of 3.4 per cent on a saar basis.

Which Method?

The decision on which of the three methods to use depends on the purpose for which the quarterly growth rates are intended. The primary measure adopted by different countries is shown in Table 1. Several countries, including Singapore, which adopt the year-on-year growth rate as the primary measure, also compile and disseminate supplementary quarterly growth rates.

TABLE 1 INTERNATIONAL PRACTICE

Primary Measures

Year-on-Year Growth Rates	Supplemented by Quarter-on-Quarter Growth Rates?
Germany	Yes
Hong Kong, China	Yes
Netherlands	Yes
Philippines	Yes
Singapore[1]	Yes
Switzerland	Yes
Thailand	Yes
Indonesia	No
Korea	No
Malaysia	No

Quarter-on-Quarter Growth Rates	Supplemented by Year-on-Year Growth Rates?
Canada	Yes
Japan[2]	Yes
United Kingdom	Yes
Australia[3]	No
United States[1]	No

Source : Web-sites of national statistical offices and IMF

1 Quarter-on-quarter growth rates are annualised.
2 Both sa growth rate and saar are published.
3 Supplemented by trend component.

The consensus among economic statisticians is that the y-o-y growth rate is most appropriate for international comparison as it is objective and transparent. The need for seasonal adjustment makes the q-o-q growth rate and saar less comparable because the resulting series are dependent on the seasonal adjustment procedures adopted and the extent of seasonal adjustment applied. Without supplementary information, it would be unclear whether the seasonally adjusted data had, for example, adjusted for differences in the number of working days arising from "moving holidays".

A further reason for the preference of the y-o-y growth rate is that it is subject to smaller revisions than q-o-q growth rate and saar. Since estimates of seasonal factors could change significantly with additional data points, the seasonally adjusted series could be revised with the receipt of new data even when the underlying historical data are unchanged.

Generally, when the economy is on a steady growth path, the y-o-y growth rate would suffice and little attention is paid to q-o-q growth rate and saar. Reflecting the vagaries of an uncertain external environment, q-o-q growth rate and saar could be highly volatile, showing large swings which may hinder analysis solely focused on sequential growth rates. Notwithstanding the higher volatility, as q-o-q growth rate and saar identify or anticipate turning points earlier, they become more relevant and should receive greater attention when the economy is at or close to a turning point.

Conclusion

Three methods are available for the computation and presentation of quarterly growth rates or quarterly changes. The year-on-year method is the most widely used and the best for international comparison.

However, as y-o-y growth rates have the disadvantage of being slower in the identification of turning points, seasonally adjusted quarter-on-quarter growth rates (or its annualised equivalent) could be considered to be more appropriate when the economy is at or close to a turning point. Some countries, eg US, Japan and Canada, adopt q-o-q growth rates as their primary measures of quarterly changes.

Singapore, while adopting the y-o-y growth rate as the primary measure, compiles and presents supplementary information on the annualised equivalent of the q-o-q growth rate, ie the saar.

2002 in Brief

Singapore's population
... reached a total size of 4.16 million in June 2002.

Average life expectancy at birth
... was 77 years for males and 81 years for females.

Literacy rate
... was 96.9 per cent among males and 90.6 per cent among females.

Home ownership rate
... was 93.6 per cent.

Labour force participation rate
... was 77.2 per cent among males and 53.4 per cent among females.

Per capita Gross National Income
... was S$36,909.

Official foreign reserves
... increased to S$143 billion.

Mobile phone subscribers
... reached 779 per 1,000 population.

Internet dial-up subscribers
... was 592 per 1,000 population.

Crime rate
... was 768 per 100,000 population.

Change in 2002 (Year-on-Year)

Unit Labour Cost Index
... was 4.2 per cent lower.

Consumer Price Index
... declined by 0.4 per cent.

Domestic Supply Price Index
... fell by 1.5 per cent.

Retail Sales Index
... was 2.5 per cent lower.

Catering Trade Index
... was 5.4 per cent lower.

Domestic Wholesale Trade Index
... rose by 3.1 per cent.

Foreign Wholesale Trade Index
... declined by 3.4 per cent.

Business Receipts Index
... fell by 0.8 per cent.

Industrial Production Index
... rose by 8.3 per cent.

Common Health Defects of Students

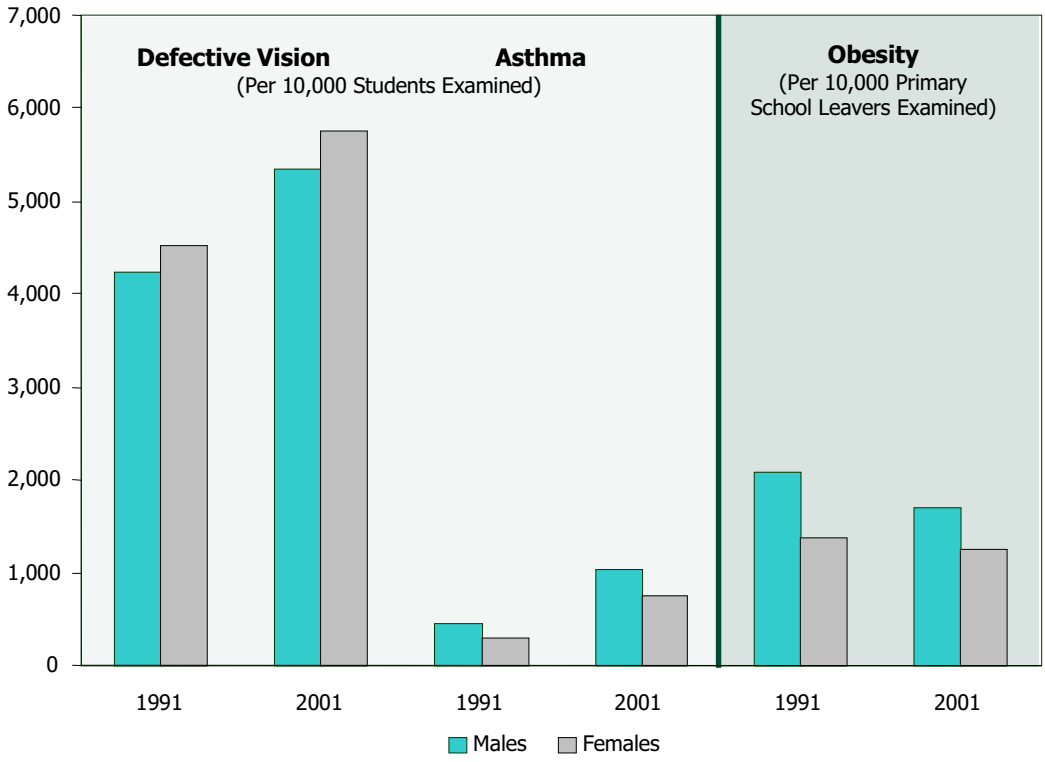
Do You Know . . . that more than half of the students[1] who were examined had defective vision?

Females experience a higher incidence of defective vision than males. In 2001, 5,744 per 10,000 female students and 5,351 per 10,000 male students had defective vision, based on data from health examination of students.

In comparison, male students are more likely to be asthmatic and obese than female students. For every 10,000 students examined in 2001, 1,026 male students and 757 female students had asthma. Among primary 6 students who were examined, 1,705 per 10,000 male students were obese in 2001 as compared with 1,251 per 10,000 female students.

The incidence of defective vision and asthma increased for both male and female students between 1991 and 2001. However, the incidence of obesity declined in the last ten years.

CHART 1 INCIDENCE OF HEALTH DEFECTS AMONG STUDENTS

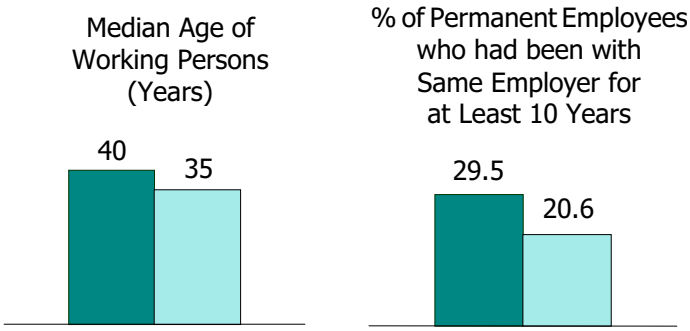


1 Primary school entrants, primary school leavers and secondary school leavers.

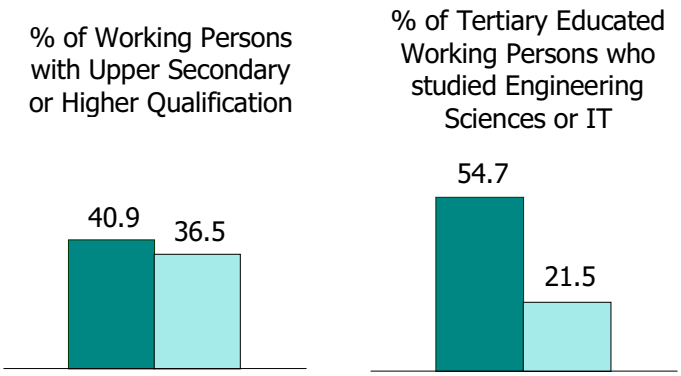
How Do Females Compare with Males at the Workplace?

Using data for 2002, we compare selected key characteristics of males and females in the Singapore job market.

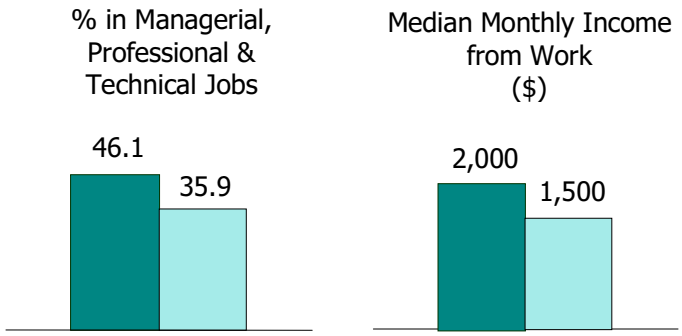
- Female working persons were generally younger than the males. Males tended to have longer tenure than females.



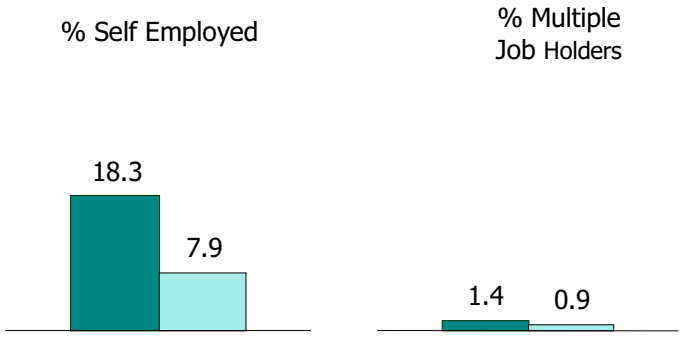
- Proportionately more working males than females had upper secondary or higher qualification. A higher proportion of the males studied engineering sciences and IT in polytechnic and university.



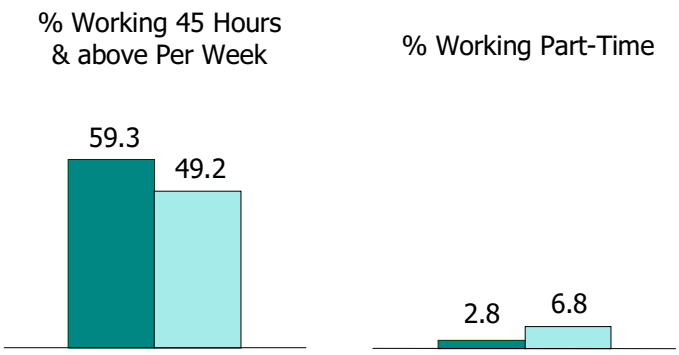
❖ Among working persons, proportionately more males than females were in managerial, professional and technical jobs. Males typically earned more than females.



❖ Proportionately more males than females were self-employed. The incidence of multiple job holdings was marginally higher among males than females.



❖ Males were more likely than females to work beyond the standard 44-hour work week. Proportionately more females than males worked part-time.



Census of the Legal Industry, 2001
Key Findings

Introduction

A Census of the Legal Industry (CLI) was undertaken jointly by the Singapore Department of Statistics and Ministry of Law in November 2001. This was the first census of its kind among local law firms. The main objective of the project was to gather detailed benchmark data on the legal services industry for the year 2000 so as to provide statistical inputs for policy formulation in the legal industry. Key findings from the Census are presented below.

Size and Structure of Business

There were some 700 local law firms operating in Singapore in 2000. They generated total operating receipts of $837 million, representing an average of $1.2 million per firm. Local law firms accounted for 76 per cent of the total operating receipts in the legal services industry[1]. The remaining 24 per cent were attributed to foreign law firms.

The majority of the local law firms were small[2] in size. They comprised 87 per cent. Medium-sized firms made up 11 per cent while the large ones constituted 2 per cent. Although small in number, the large firms accounted for 45 per cent of total operating receipts while the medium-sized firms contributed about 29 per cent. Small firms made up only 26 per cent of total operating receipts.

Employment Composition

Local law firms employed a total of 3,081 lawyers[3] and some 6,000 support staff (including both full-time and part-time support staff) in 2000. This represented about 89 per cent of the total employment in the legal services industry.

The average number of lawyers employed was 1.8 and 11 for small and medium-sized firms respectively. For large firms, the average was 71. Large firms generally adopted a pyramid structure, with a larger base of legal assistants[4] (62 per cent). In contrast, about 77 per cent of lawyers in small firms were sole-proprietors or partners, with a small percentage of legal assistants (14 per cent).

Areas of Practice

Legal services in litigation and alternative dispute resolution (ADR) was the most prevalent field of work, with 75 per cent of law firms carrying out this activity. Legal work associated with conveyancing and real property law was the second most prevalent area, with 55 per cent involved in this area. All large firms were involved in providing legal services in these two areas. The third most common type of legal services was in family law with 33 per cent of practices providing legal services in this area.

Large firms also dominated in the area of intellectual property law and info-comm technology law, with 93 per cent of them involved in this area. The corresponding figures for small and medium-sized firms were 5 per cent and 32 per cent respectively.

Main Sources of Income

The main sources of income in 2000 were in the area of litigation and ADR (41 per cent), followed by corporate law (22 per cent) and conveyancing and real property law (21 per cent). Together, these top three fields of law accounted for 84 per cent of total income.

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1 Data for overall legal services industry are sourced from the Annual Survey of Business Services, 2000.

2 According to industry norms, small law firms refer to those with 5 or fewer lawyers; medium firms are those with 6 to 30 lawyers and large firms, those with 31 or more lawyers.

3 This includes both full-time and part-time lawyers.

4 In a typical law firm (sole-proprietorship or partnership), the main types of lawyers by seniority are equity partner, salaried partner and legal assistant/associate. In a limited law corporation (LLC), instead of partners, the top ranked category of lawyers would be a director who may or may not be a shareholder.

The income profile of law firms varied by size of practice. Regardless of size, all firms indicated that their main source of income came from the area of litigation and ADR. Their proportion of income from this source ranged from 37 per cent for large firms to 55 per cent for small firms.

Large practices dominated in corporate law, with 32 per cent of their revenue generated from this area, compared to 6 per cent for small firms and 18 per cent for medium firms. This reflects corporate clients' preference to seek out larger law practices for advice and support in various aspects of corporate law (eg merger and acquisitions, etc).

After litigation and ADR, the next major source of income for both small and medium-sized practices was conveyancing and property law, with 26 per cent and 25 per cent respectively.

In addition, some 55 firms reported that they derived about $25 million from cross-border transactions[5] in year 2000. Although this amount constituted only a small proportion of total operating receipts (3.0 per cent), it is likely to expand in the future as more firms internationalise their business. The most prevalent areas were corporate law, civil and commercial litigation, and arbitration and alternative dispute resolution. The top three countries cited were Malaysia, China and Thailand.

5 Cross-border transactions refer to transactions regulated or affected by Singapore law and at least one other national law.

Automating Wholesale Prices Surveys
using Lotus Notes

The Singapore Department of Statistics has been conducting the Surveys of Wholesale Prices on a monthly basis since the 1970s. These surveys comprise:

- Import Price Survey;
- Export Price Survey; and
- Singapore Manufactured Products Price Survey.

One feature of the Wholesale Prices Surveys is the use of individually customised survey forms with pre-printed information of commodity products and past prices. These customised survey forms facilitate easy completion and reduce the reporting burden of respondents. In the past, they were sent out to respondents either by post or fax.

With the increasing use of e-mail, the customised survey forms are also sent to respondents as a softcopy file attachment via e-mail. To encourage the use of e-mail, the monthly covering letters accompanying the survey forms includes information on staff's e-mail addresses.

As customised forms include specific information, e-mails with these forms have to be individually prepared, making the work repetitive and labour-intensive. With more respondents opting for e-mail surveys, it became necessary to consider the automation of this process through the use of Lotus Script.

With the auotomated e-mail survey process, productivity is greatly enhanced. Before the automation, it was necessary to manually check that the correct file attachment was sent to each respondent. As the automation program has built in the necessary checks and validation, this manual check is no longer required. With automation, it would take only a single "send" command to execute and complete the sending out of customised survey forms to all respondents.

The successful automation of the survey process in the sending out customised survey forms via Lotus Notes has resulted in significant productivity and efficiency gains. The Department will be considering its extension to other surveys.

Intelligent Classification and Coding System

for Household Expenditure Survey 2002/03

For the Household Expenditure Survey (HES) conducted between October 2002 and September 2003, the Singapore Department of Statistics has developed an Intelligent Classification and Coding System (ICCS). The ICCS improves the efficiency of coding and capturing of the survey data significantly.

The ICCS is a client server application which runs on WIN 98. The database, which contains an "expandable" dictionary, resides on a UNIX host. Developed as a sub-module of the main computer system for the 2002/03 HES project, the ICCS does not require additional system licences. This makes the ICCS a good and inexpensive long time investment.

Re-Engineered Coding Process

The ICCS involves the use of an interactive search engine accessing a Master Dictionary on expenditure codes and descriptions, and allows coders to view and select the most appropriate codes. The coder needs only to enter a key word and the system will search and list out all possible codes and descriptions comprising the key word. The coder will then click on the most appropriate description and the corresponding code will automatically be captured into the system immediately.

The ICCS also allows the dictionary which caters to the diverse language usage in Singapore (eg Malay, the Chinese Dialects and Mandarin names of various goods) to be 'built up' over time. The dictionary can be updated continually with the new types of goods and services and their corresponding codes as and when they are encountered during the coding process. This special feature of building up the comprehensiveness of the dictionary will serve as a good base for coding of expenditure items for future surveys.

Halving of Data Processing Time

The effective integration of the ICCS and the relevant data-entry screens eliminates the steps involved in searching for the codes manually, writing them down and subsequently entering them into the computer system. The interactive selection of appropriate codes on screen and direct capturing of codes will speed up the overall processing time by up to 50 per cent. With the significant reduction in processing time through the use of the ICCS, the timeliness of data will be improved.

Better Data Quality

The ICCS eliminates transcribing and other human errors associated with manual coding process. With the use of the ICCS, there is significant improvement in staff morale amongst the data-entry personnel. Using the search engine in the ICCS is much more interesting and challenging compared to the monotonous head-down data entry method used previously.

Productivity Gains in Statistical Data Processing

Being the National Statistical Authority and Coordinator, the Singapore Department of Statistics (DOS) has been seeking continual improvements to enhance its capabilities in data collection, analysis and dissemination. Statisticians have been trained in using IT tools for data extraction, collection and analysis.

In a varied IT environment ranging from mainframe to client-server and PC platforms at DOS, the application systems which were developed several years ago and residing in the mainframe environment have become increasingly inefficient in serving the needs of users in the processing and generation of the desired output.

In May 2002, DOS launched the Rightsizing Project to improve the efficiency and upgrade the capabilities of its application systems residing in the mainframe. It is a strategic move for DOS to migrate the mainframe applications to the client-server platform to support its specialized needs. The project, which is being implemented in two major phases, will be completed by September 2003.

Phase 1 focused on commercial establishments, services and social statistics data processing. Enhancements to expanded functions and streamlined business processes were incorporated and implemented with better IT solutions. The detailed work processes were also enhanced to achieve the operational effectiveness and efficiency for various applications. In Phase II, the focus is on the population, household and national dwelling database systems.

Three Key Principles

There are three key principles observed in the Rightsizing Project. They are as follows :

(a) Adoption of electronic data transfer as a means for faster sharing of data and reduction of turnaround time.

(b) Establishment of a more user-friendly end-user computing environment for better control and cross-division sharing.

(c) Streamlining of work processes for increased efficiency and further reduction of manual processes as far as possible.

The major improvements achieved in Phase 1 of the DOS Rightsizing Project are summarised in page 18. With the new infrastructure and systems in place, users are able to run programs more easily and interactively, thus saving effort and time taken in the generation of statistical reports from the application systems. With better and more advanced IT techniques available, the merging of a multitude of datasets can be carried out efficiently and effectively.

Users would also benefit from the streamlined procedures and processes. All these benefits translate into significant overall productivity gains for all officers. Most importantly, the new systems offer upgraded facilities for users in the generation of reports and outputs. As a result, users are able to maximise the application capabilities to the best of their abilities to further improve the timeliness of outputs.

Improvements/Outcome of DOS Rightsizing Project

Electronic Data Transfer

- The use of electronic data transfer approach for data exchanges across all agencies concerned facilitates data transfer.

End-User Computing Environment

- The central end-user computing environment provides a user-friendly master environment for users to
  - easily share and leverage on common programs and techniques across divisions;
  - run the programs in their PC or Server depending on data volume.

A more efficient and flexible processing is made possible using the high-powered server and online Storage Area Network (SAN) facility. There is a significant improvement in speed and resource compared to the existing mainframe where historical data are processed using cartridges.

Streamlining of Work Processes

The streamlining of work processes has been implemented in 3 areas, namely, data extraction, data processing and generation of reports to achieve greater efficiency.

- A generic data extraction process is provided to extract data from a number of tape/cartridge media in use.
- With improved system design, direct interfacing between systems and further computerised processes, the average data processing cycle is shortened by 30 per cent to 50 per cent. In one data processing cycle, it has improved turnaround time for overall data processing from 1-2 days to less than half an hour.
- Interactive online submissions for on-demand executions and direct printing has been implemented by users. This reduces the elapse time and increases overall operational efficiency.
- Control reports are produced in softcopy to reduce paper usage and this eliminates the despatch arrangements.

SINGAPORE
DATA ON PALM

The pdf version of the "Singapore in Brief 2003" for PalmOS device is available for downloading via the Statistics Singapore Website.

http:www.singstat.gov.sg/keystats/annual/sib.html

Formation and Cessation of Companies and Businesses, 2002

Companies

Company formation in 2002 increased significantly by 33 per cent over the previous year, to reach a new high of 11,338. The previous high was 11,032 in 2000. All major industries recorded double-digit increases in company formation, except manufacturing. The commerce sector recorded the highest rise of 49 per cent, whereas manufacturing grew by 5 per cent.

In 2002, 6,952 companies ceased operations, 36 per cent higher than in 2001. This was the largest rise in company cessation since 1992. All major industries recorded increases in cessation, with most of them posting double-digit increases in cessation over 2001. Among them, the financial and business services industry recorded the largest rise of 61 per cent in company cessation. Overall, there was a net formation of 4,386 companies.

Businesses

While company formation expanded substantially, the number of new businesses formed increased by only 2.6 per cent to 25,337 businesses. This was the first increase after two years of declines since 2000. The larger number of business openings in commerce (5.7 per cent), and financial and business services (13 per cent) more than offset the declines in manufacturing (23 per cent), construction (22 per cent) and transport and communications (9.5 per cent).

The number of business closures fell significantly by 57 per cent, from 22,905 in 2001 to 9,859 in 2002. All major industries recorded lower cessations. Among them, the financial and business services, construction, and transport and communications recorded the largest decline in cessation, with 60 per cent each. The large drop in business cessation was partly due to the change in the renewal period of business licences from 1 year to 3 years, with effect from April 2000.

CHART 1 FORMATION AND CESSATION OF COMPANIES

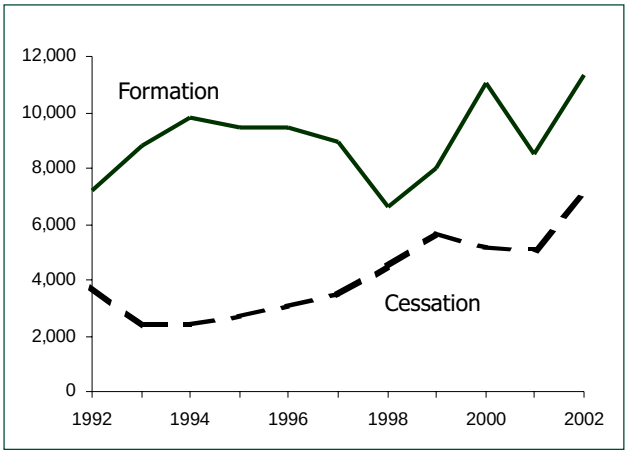
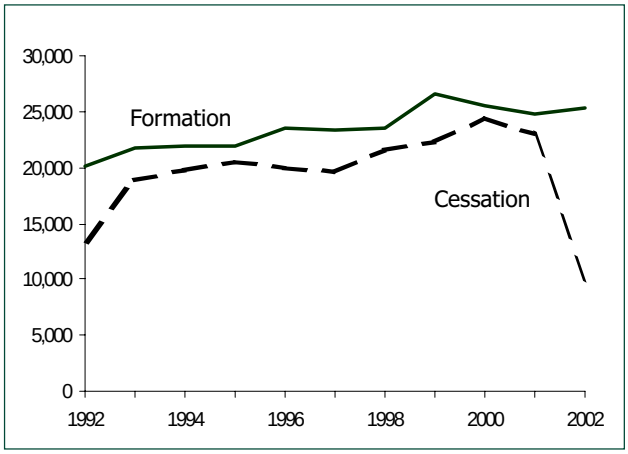


CHART 2 FORMATION AND CESSATION OF BUSINESSES



Working Visit of Prime Minister of Sao Tome and Principe to Singapore 14-18 March 2003

HE Maria das Neves, Prime Minister of the Democratic Republic of Sao Tome and Principe visited the Singapore Department of Statistics (DOS) on 15 March 2003 during her working visit to Singapore.

Prime Minister Maria das Neves was accompanied by HE Arzemiro dos Prazeres, Minister of Commerce, Industry and Tourism, and senior officials :

- HE Ovidio Pequeno
  Ambassador
- Mrs Leopoldina Pequeno
  Spouse of Ambassador
- HE Zeferino Vaz dos Prazeres
  Governor of Principe Island
- Mr Agapito Dias
  Advisor to the Prime Minister
- Mrs Aida Maria D'Almeida
  Director of Cabinet
  Prime Minister's Office
- Mr Diogenes Cravid
  Press Attache to the Prime Minister
- Mr Deodato Lima
  Chief of Protocol
- Ms Leila Braganca
  Private Secretary to the Prime Minister

DOS briefed the delegates on the compilation and dissemination of Singapore economic statistics covering the following areas :

- Overview of the Singapore Economy
- Tracking Domestic and External Economy
- Integrating the Data
- Adjusting for Price Changes
- Dissemination Channels

View photograph

Contents

The *Statistics Singapore Newsletter* is issued half-yearly by the Singapore Department of Statistics. It aims to provide readers with news of recent research and survey findings. It also serves as a vehicle to inform readers of the latest statistical activities in the Singapore statistical service.

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