

GDP Estimates: Timeliness and Acceptability Considerations¹

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Abstract

Increasing exposure to dynamic global environment and experience of the previous financial crisis have emphasised the need for analyses of short term changes. Annual GDP estimates are definitely inadequate for re-assessment of strategic plans and decision making to address a crisis situation. Focusing on the estimation of quarterly GDP in Malaysia, the paper highlights the challenges encountered and the strategies adopted in meeting the timelines stipulated by stakeholders. For consistency and comparability, the concepts used and the methods employed at the various stages of GDP compilation have to comply with international guidelines, in spite of which the outcome of the whole exercise is often subjected to scrutiny, scepticism and outright criticism by the user community as well as the general public, especially when the estimates do not concur with their expectations. Meeting user expectations has its limits – at stake is the professional integrity of those involved in GDP compilation. Acknowledging that such issues are not confined to Malaysia, the paper presents comparisons with relevant agencies in other countries with respect to timeliness, compilation approach, staff strength, and authority in compilation and dissemination of GDP.

Introductory remarks

The gross domestic product (GDP) is an internationally accepted measure of economic activity. It provides an indication of the size and structure of an economy and measures the changes taking place within it.

In this country, GDP compilation is the responsibility of the Department of Statistics, Malaysia (DOSM). Major users of GDP comprise of government agencies (e.g. Economic Planning Unit, Ministry of Finance, and Bank Negara Malaysia, private sector, universities, and international agencies (e.g. World Bank, United Nations, International Monetary Fund).

Recent developments, as exemplified by the previous financial crisis, have highlighted the need for timely statistics to monitor changes. Rather than having to be contented with the annual GDP, users are now provided with quarterly estimates. It is a matter of time before demands from the increasingly numerate public warrant the release of the monthly GDP.

Besides requiring the timely release of GDP estimates for decision-making, users often expect the figures to also serve their own agenda. They would be disappointed,

and the media would enlist support for alternative figures from other sources, should the estimates differ markedly from their respective expectations.

However, statisticians are duty-bound to ensure that, like other statistics, GDP estimates comply with accepted standards, more specifically the System of National Accounts (SNA).

Development of national account statistics in Malaysia

The earliest formal estimates of national account statistics for the country were for the year 1947. Dr. Frederic Benham, Economic Adviser to the Commissioner-General for the United Kingdom in South East Asia in the late 1940's pioneered the estimation of national accounts. His estimates for the years 1947 to 1949 cover the Malayan Union/Federation of Malaya and Singapore.

Estimates for the years 1949 to 1953 were prepared by the International Bank for Reconstruction and Development. The Bank's estimates were an extension of Dr. Frederic Benham's and they also cover the Federation of Malaya and Singapore. However, no estimates are available for 1954. From 1955 onwards, the Department of Statistics commenced the compilation of national account estimates using the production and expenditure approaches at current prices, initially for the Federation of Malaya and subsequently for Malaysia².

The first constant price series was compiled for the 1970 - 1983 period using the 1970 input-output (IO) tables³. A new series was compiled for the period 1978 - 1998 using the 1978 IO tables. For the series, DOSM had compiled and published annual estimates of GDP by expenditure at current and constant 1978 prices and quarterly estimates of GDP by activity in constant prices. However, the quarterly estimates were not released on a quarterly basis. Both the annual and quarterly estimates were released 10 months after the end of each reference year.

In early 1997, Malaysia subscribed to the IMF's Special Data Dissemination Standard (SDDS) program. Under this program, DOSM was offered technical assistance to assess and if necessary, to further improve the methodologies used, particularly the estimation procedures of both the annual and quarterly series. The technical assistance program was completed in early 1999. From the first quarter of 1999, DOSM commenced releasing the quarterly series with 1987 as the base year using 1987 IO tables⁴.

For the last ten years, DOSM has made substantial progress in enhancing the national account system, and currently, most of the recommendations of SNA 93 have been implemented. The changes include:-

- a) Benchmarking annual and quarterly accounts to the latest IO tables;
- b) Developing estimates of GDP by activity at current and constant prices;
- c) Developing new and more detailed compilation system that uses available data sources more effectively (e.g. in service and manufacturing); and
- d) Incorporating new sources of data i.e. those not previously utilised in the 1978 based series

Quarterly GDP

As shown in Figure 1 below, before 1997, the Malaysian economy had been growing at more than 8 percent annually. But as shown below, the year after the crisis, 1998, the amazing economic growth performance had been disrupted. Opportunities for wealth creation as well as the equity in the distribution of income achieved by Malaysia were threatened.

Figure 1: GDP at constant 1987 prices, 1990-2005



The value of the Ringgit currency dropped sharply. By the end of 1997, it was 35 percent below its value 12 months earlier. The stock market in Kuala Lumpur plummeted and the country's economy experienced a drastic contraction. Investment and private consumption also dropped sharply resulting in increase in unemployment⁵.

Although in general the GDP has gained wide acceptance as a measure of the overall state of the economy that influences government policies at the macro level^{6,7,8,9,10,11}, and share market performance as well as investors' decisions at the micro level, like most economic indicators, its utility and hence strategic importance are hinged on timeliness. An obvious limitation is that annual estimates show only changes that occur during the past one year period. The annual GDP estimates are definitely inadequate for re-assessment of strategic plans and decision making to address a crisis situation. Thus, after the 1997 crisis, there was a sense of urgency among policy makers on the need to analyse short term changes in the economic environment. In May 1999, DOSM started to publish its first quarterly GDP estimates within the 7 to 8 weeks of the reference quarter.

In a wider context, it should be noted that components of quarterly GDP constitute an important aspect of Quarterly National Accounts (QNA). In order to serve as a framework for assessing, analysing, and monitoring current economic development, QNA should be more timely than the Annual National Accounts (ANA) and be more comprehensive than individual short term indicators¹². While ANA provide information about economic structure and long-term trends, QNA allow analysis of the dynamic relationships between macroeconomic aggregates and facilitate monitoring of business cycles.

Timeliness

Prior to 1999, the International Monetary Fund (IMF) lacked macroeconomic data on most of the developing countries. Thus, during the 1997 crisis, IMF could not give the appropriate advice and assistance to help the respective countries. In the case of Malaysia, before the financial crisis, the quarterly GDP were only published as historical records.

From 1999 onwards, GDP estimates were released on a quarterly basis within the time frame set by SDDS, at current and constant prices. In fact, as shown in Table 1 below, DOSM is ahead of some of its counterparts in the Association of South East Asian Nations (ASEAN). DOSM publishes its quarterly GDP within eight weeks after the reference quarter. A press release is held to announce the quarterly GDP. Quarterly GDP publication is available one day after the press release. After the embargo time, users are also allowed access to the information through DOSM's web site: (<http://www.statistics.gov.my>).

Table 1: Advance release calendar display in SDDS by country

Country	Duration after Reference period
United States	4 weeks
Japan	6 weeks
Singapore	6 weeks
Philippines	8 weeks
Thailand	9 weeks
Indonesia	12 weeks
Malaysia	7 ~ 8 weeks

Source: <http://www.imf.org/external/country/index.htm>

While DOSM's quarterly release calendar complies with the SDDS and can be expected to meet the short-term needs of its users, the final data to be used to realign and revise the quarterly estimates will normally be available within two to three years after the reference period. By then policy makers would have already finalised their strategic plans. An important issue here is the time lag between the reference period of annual surveys and the actual time when the data become available. Even in the case of quarterly surveys, the majority of respondents do not comply within the stipulated period. In conducting the Quarterly National Accounts survey, the response

rate on the closing date is poor. At this juncture, DOSM's state offices are required to organise field visits to pursue the non-response cases. In some cases officers from DOSM's national accounts division would also be contacting the respondents to increase the response rate.

Lack of awareness on the importance of statistics is said to lead to the poor cooperation. Respondents either do not bother to complete the questionnaires or opt to delay in submitting them within the timeframe. Even from the questionnaires actually received, quality of data is affected by the perfunctory attitude of respondents.

Acceptability: adherence to standards

Some of the issues pertaining to compilation of the quarterly GDP have been identified. They are elaborated below:

a. Approach

Ideally, developed countries are expected to compile their GDP according to three approaches, viz., through income, production and expenditure. DOSM compiles the Quarterly GDP using the production and expenditure approaches. Our major trading partners, United States (US) and Japan, compile their GDP based on the income and expenditure. Generally, developed countries give emphasis to income and expenditure since as an economy reached the maturity stage, the main concern will be to keep track of the trend/movement of household consumption, investment, salaries and wages.

In the case of developing countries, their preference is for the production approach as it is crucial for policy makers to monitor the development in specific industries for their long term planning.

As for Malaysia, in order to implement the 9th Malaysia Plan and the 3rd Industrial Master Plan (IMP 3), policy makers need to know the contribution of specific industries at the detailed level to enable them to link appropriate policies with actual implementation programmes. Table 2 below shows the approaches used by selected countries.

Table 2: GDP approaches in selected countries

	PRODUCTION	EXPENDITURE	INCOME
Australia	x	x	x
Canada	x	x	x
Japan		x	x
United Kingdom	x	x	x
New Zealand	x	x	
Singapore	x	x	
Thailand	x	x	
Indonesia	x	x	
Malaysia	x	x	

Source: OECD QNA Sources and Method, Sept. 2001

b. Classification system

The main purpose of the Malaysia Standard Industrial Classification (MSIC) is to provide a standard framework for classifying establishments and other statistical units in the given industry. The same classification is to be used in all official statistics. MSIC is used in defining the scope of data collection and compilation in censuses and surveys to prevent gaps or duplications in statistics of the various industries. It also serves as a standard reference for users of official statistics on the type of economic activities included under the various categories of industries.

However, due to their business nature, economic entities have the tendency to change their main economic activities. This is more prevalent within the services sector where the cost involved in shifting from one activity to another is relatively small.

More than 80 percent of the data for quarterly GDP estimates are primary data and the rest are obtained from secondary sources. Since 1970, DOSM had done a lot of primary data collection through common questionnaires and economic surveys. GDP coverage is expanding, encompassing a wider range of sub-divisions within the agriculture, manufacturing and the services sector. This is reflected in DOSM's new Malaysia Standard Industrial Classification 2000 (MSIC 2000).

Before the year 2000, the classification system used for National Accounts was based on the Malaysia Industrial Classification 1972 (MIC 72). During the last two decades, numerous new activities and technological advancements have been introduced in Malaysia and these have resulted in considerable changes to the structure of our economy. Hence, it is appropriate for the existing classification system to be revised to reflect the present economic development in the country. As such, the National Accounts Industrial Classification is based on the MSIC 2000 which conforms closely to the International Standard Classification of All Economic Activities, Revision 3, thus enabling comparison of activities at the international level. As noted in Table 3 below, the bulk of the expansion occurs in the services sector. DOSM is currently moving forward to launch MSIC 2007 in line with ISIC revision 4.

Table 3: Comparison between MIC 72 and MSIC 2000

	MIC 72	MSIC 2000
Agriculture	33	38
Mining	19	25
Construction	12	25
Manufacturing	137	197
Services	171	413
Total Industries	372	698

Source: Malaysia Industrial Classification (Updated) 1972 and Malaysia Standard Industrial Classification 2000

There are still some limitations on the coverage of new emerging industries under the MSIC 2000. For instance, logistics activities are expected to cover the whole range of activities associated with supply chain management but MSIC 2000 does not

adequately cater for new developments. An issue to be resolved is whether the activity to be included is an entirely new activity or just a horizontal or vertical integration within the services sector. A real challenge for national accountants is in ensuring the coverage of these activities in the GDP.

It is also to be highlighted that our data collection has always been based on the establishment approach which assigns one main activity to each establishment. The increasing occurrence of establishments involved in multiple activities necessitates the complicated task of determining the main activity for each establishment.

c. Coverage

The approaches employed and the reliability of the resulting GDP estimates, as well as the level of details released are very much dependent on the coverage of available data. While all the major sectors are represented, the extent of representation differs since there are still gaps for some sub-sectors that are not adequately covered, aspects of which are briefly presented in the following.

♦ New activities - measuring a constantly changing economy

Besides the refinements in classification categories to accommodate new activities, DOSM's challenge is to continue to also accommodate these changes in the coverage of its data collection in order to provide the Nation with the most timely, relevant, and reliable economic statistics possible.

♦ Informal sector

The impacts of globalisation have affected the informal sector in two ways. Firstly, people involved with the existing informal sector have responded to globalisation by using new technologies, and transportation and communication links to diversify the commodities and services they offer, thus challenging the formal/informal demarcation with respect to the level of technology employed. Secondly, as companies utilise global changes to expand production and lower labour costs, outworking and certain forms of subcontracting are becoming increasingly important informal activities. Hence, the informal sector should no longer be confined to the transitional non-agricultural activities of those who have migrated to escape from poverty in the rural areas¹³.

Lack of coverage of the informal sector and the non-observed economy in general would thus result in biases on levels and trends of GDP, cause imbalances in the internal consistency of economic transactions and would ultimately pose a real challenge to the credibility of national account estimates.

Towards addressing the issue, DOSM has identified and gathered some information on informal activities. In August 2006, DOSM launched a pilot survey for this sector. The information from the survey would be used in the compilation of GDP. As a start, the informal activities covered include those associated with street vendors, shops opened during festival seasons and night market operators.

◆ Frame

Besides issues pertaining to coverage of new activities and the informal sector, completeness of coverage of primary data collection is very much dependent on adequacy of the sampling frame.

For the purpose of obtaining sound data for GDP compilation, the registry or sampling frame for establishments needs to be continuously updated. The main source of input for the frame is the Suruhanjaya Syarikat Malaysia (SSM). Census of Establishments and Enterprises 2003 and Economic Survey 2004 conducted by DOSM also provide avenues for updating the frame for selected industries. Industries which are not covered in the scheduled annual censuses/surveys are covered separately through the Quarterly National Accounts Survey.

However problems of non-response to mail questionnaires in the form of 'post office returns' do occur. It is common for an establishment, especially under the services sector, to be operational for a very short duration, especially when it is not tied by a huge capital investment.

Updated details in the sampling frame are also needed so that better sampling designs could be devised to ensure more comprehensive coverage e.g. through choice of more refined stratification variables. If revenue is to be used as a stratification variable, it should be noted that the revenue obtained from the services sector and the small construction companies tend to be volatile since their operations are dependent on the projects allotted to them.

Another consideration is for the sample design to cater for the need to obtain reasonably reliable short term indicators to be used in the quarterly compilation. Differences in coverage and sample design could result in differences in estimates. This could be seen from the discrepancy between the result of the Annual Manufacturing Survey and the total figure from the Monthly Manufacturing Surveys. Similarly, inconsistencies are also detected between growth trends from the Index of Industrial Production, sales figures from the manufacturing survey and trade statistics. Thus, even though a sector is said to be covered on a monthly or quarterly basis, the coverage might not be according to the specification required for estimation of the sector's contribution to quarterly GDP.

d. Data limitations: need for alternative estimation procedures

Ideally, besides ensuring quarterly coverage of the major sectors, the scope of information collected has to comply with the requirements for GDP estimation. Acknowledging the difficult task of imposing such requirements on available sources of information, it is recommended that alternative procedures be employed to make full use of such information.

The basic principle in selecting and developing QNA data is to obtain indicators that best reflect the items being measured. In some cases, data are available in a form ready for use in the ANA or QNA with little or no adjustment. In other cases, the data

will differ from the ideal in some way, so that adjustments will have to be made. QNA data are more limited in detail and coverage than those available for the ANA because of issues of data availability, collection cost, and timeliness¹⁴.

The data required for the production approach are generally incomplete on a quarterly basis. Because compiling the production accounts at current prices and in volume terms requires detailed accounting information on both output and current expenses, the required data may not be available quarterly or may not be collected with the speed needed for timely QNA compilation. Hence, the missing data must be estimated by using another series as an indicator. Most commonly, output data are available, while data on intermediate consumption are not. In other cases, data on total intermediate consumption, component(s) of intermediate consumption, labour inputs, or capital inputs may be available as indicators¹⁵.

Due to incompleteness of data and indicators, the quality of estimates depends on the expertise and technical competence of national accountants. If there is complete information available to compile the quarterly GDP, then the compilation could be done by any researcher or forecaster, or even members of the public with some basic knowledge on national accounts. Due to this inadequacy, national accountants have the responsibility to make full use of all available indicators relevant to GDP estimation.

DOSM uses two types of indicators consisting of the direct and indirect indicators. Sales and production data are commonly used as direct indicators. Sales obtained through the Quarterly National Accounts survey are used as quarterly indicators for the output of Wholesale & Retail Trade and Restaurants & Hotels. Quantity or production is used as indicators for Manufacturing, Electricity, Mining and Agriculture. For Manufacturing, the data are obtained from the Monthly Manufacturing Survey. For Rubber in Agriculture, the Monthly Rubber Statistics provide the required information. Quantity indicators such as number of foreign tourists are used in the estimation of growth in the hotels and restaurants industry. Number of passengers, metric tons of freight, and number of ships handled in ports are also used in estimating the growth of the transportation industry. In some cases, for the small industries, it would be expensive to conduct surveys. Therefore, for industries such as Barber, Laundry, Funeral, Beautician, Photography and Other Personal Services, the growth of population and mortality on quarterly basis would be the indirect indicators.

Besides relying on available indicators, national accountants also have to look at other sources in finalising their estimation. For example, although the Industrial Production Index (IPI) is used as an indicator in compiling the quarterly value added of Manufacturing, the growth rate recorded in IPI Manufacturing could not be used as the basis for estimating the Manufacturing value added growth rate. Neither are the two growth rates directly comparable on a one-to-one basis. The Industrial Production Index (IPI) does not reflect the latest trend since IPI Manufacturing does not contain the latest set of products of the current year. This is because producers change their products as the technology evolves while consumers' demands change with time. There are also certain industries that have yet to be covered such as manufacture of other transport equipments (e.g. building and repairing of ships and boats); and manufacture of furniture.

Other than the indirect indicators, national accountants also use the indirect method in finalising the GDP. For example, the total contribution of the illegal and informal activities is estimated based on the difference between total demand and supply. The assumption is that part of the difference constitutes the contribution from the illegal and informal activities. In some occasions, it is very difficult for the company to disclose their capital expenditure on a quarterly basis. Hence, national accountants will have to use the indirect method by treating a proportion of the imported capital goods as Gross Fixed Capital Formation (GFCF). In addition, sales of manufacturing, value added for agriculture and output of construction will also be used as movers in the estimation of GFCF.

GDP figures have been published in 3 base years, that is 1970, 1978 and 1987. Currently, DOSM is in the process of rebasing its GDP to year 2000. Emergence of new products has to be taken into account in compiling the GDP. However available prices do not cater for some of the new products. This could distort the results of estimation at constant prices. The commodities covered under the Consumer Price Index (CPI) are for Classification of Individual Consumption by Purpose (COICOP) but not for detailed classification of commodities required for national accounts compilation. Data on prices are also inadequate for deriving the constant value for the services sector. Appropriate prices are needed for specific industries such as Wholesale & Retail Trade, Transport & Communication, Advertising, and Hotels & Restaurants.

While awaiting the ideal, short-term measures should be put in place to meet the timelines for quarterly releases. Thus, in the absence of appropriate prices, the CPI or Producer Price Index (PPI) which reflects a commodity the most would be used as to obtain the constant price. For example, to derive the constant value of Plasma TV, the PPI for Colour TV of 20 inches and more will be used. Other than using the CPI/PPI, other alternative deflators are also being used. In the case of port operation and international air freight, port tariff and air fares will be used as the deflators.

The monthly surveys do not provide detailed data on input and output. Assuming absence of technological impact in the short term, the latest IO ratio will be used as benchmark to derive the value added. For example, since the Monthly Manufacturing Survey only provide information on output but not on input, the latest IO obtained from the Annual Manufacturing Survey of 2003 is used to derive its input for the purpose of calculating the value added. In the case of the Agriculture sector, not all of the sub-sectors are covered in the annual surveys. Hence, the 2000 IO will be used as a benchmark to calculate the ratio of output and input for the respective industries.

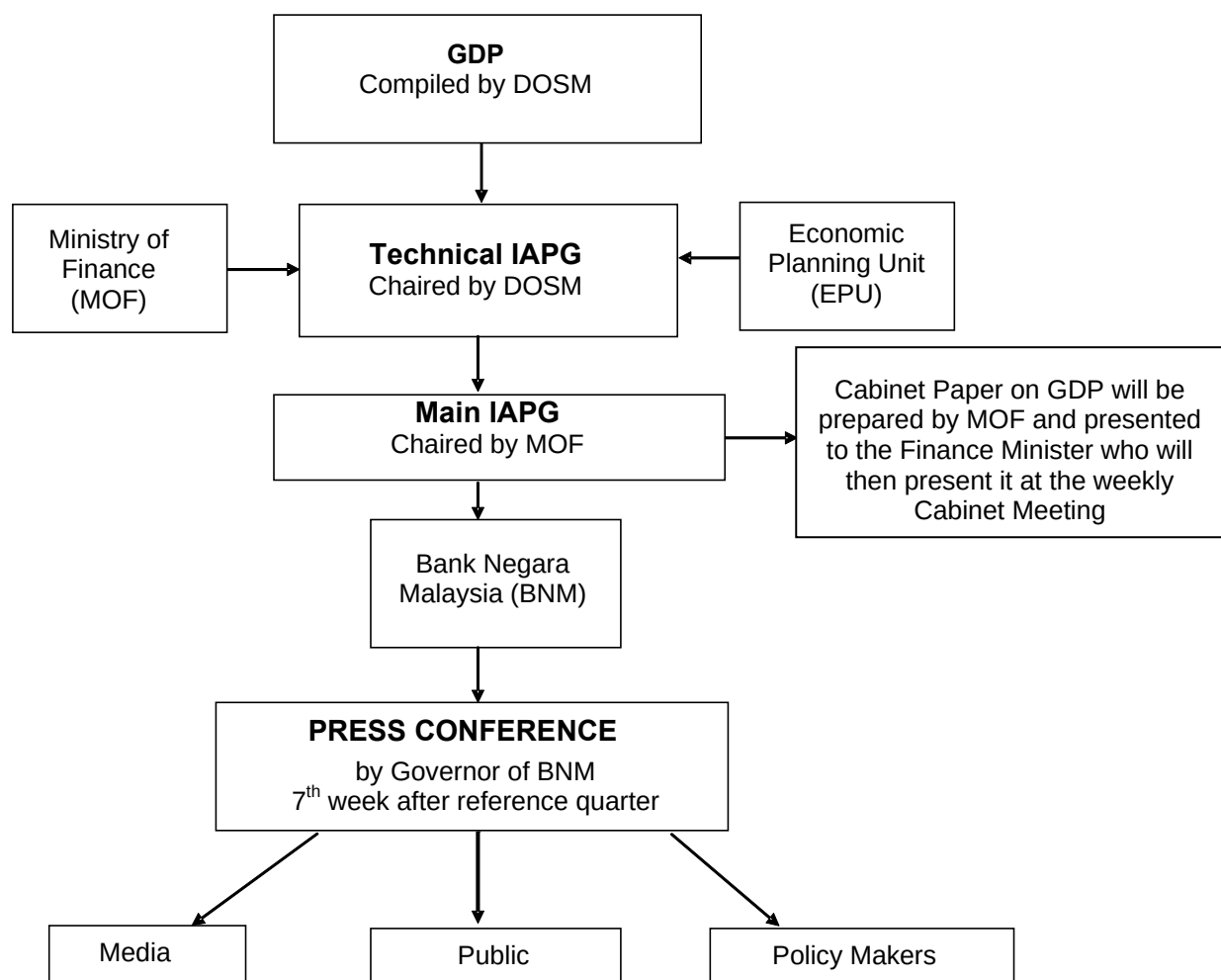
Acceptability: Meeting user expectations

DOSM's Quarterly GDP publication is a highly demanded statistical product. The estimates are scrutinized by policy makers, researchers, politicians, international organisations, investors and market players. Since GDP growth rates are associated with economic performance, stakeholders and the media are inclined to compare them with those of the neighbouring countries with little regards to the fact that economic structures of other countries differ from that of Malaysia. Stakeholders do not like unfavourable GDP growth rates since a poor growth rate is indicative of a downturn in economic cycle. A slower growth gives an unsatisfactory impression of

the country's economic performance. Public policies and programmes that are intended to promote growth are often implicated. In this scenario many questions need to be answered and detailed explanations are sought.

However in certain circumstances, DOSM has its limitation (e.g. incompleteness of coverage of sub-sectors), hence the need to look at other indicators as well, including those from secondary sources. Therefore DOSM must take the most scrupulous care in order to maintain its integrity as well as quality and credibility of its products. National account statistics are meant to show the real scenario in an economy so that if there is a problem and uncertainties are detected, it should be addressed immediately by the government (policy makers).

Figure 2 : Processes prior to release of GDP



Hence, as shown above, GDP figures are required to be examined by two inter-agency planning groups (IAPG) before being officially announced by the Central Bank.

At the technical IAPG meeting, DOSM will present the detailed GDP estimates and highlight the methods and data sources used. The other members comprise of

representatives from the economic division in Bank Negara Malaysia (BNM), Ministry of Finance (MOF), and the Economic Planning Unit (EPU).

The main IAPG meeting is chaired by the Chief Secretary of MOF while its members comprise of the highest policy-making officers from MOF, BNM, EPU and DOSM. In this meeting, DOSM would brief the IAPG members on the GDP data. At this juncture, the policy makers will give feedbacks on developments in the global markets and will convey their own findings concerning the health of the domestic economy. The GDP data are examined in relation to the respective policies and development programmes, particularly whether their impacts are being reflected on the GDP figures.

Before the GDP figures are finalised by DOSM, research houses would have announced their forecasts and opinions in the press. However, these forecasts could mislead the public and give an incorrect perception of the real economy as they are not based on firm and updated data from comprehensive surveys and censuses. It is thus important for the public to be aware of the implications of such estimates. Official statistics are not tailored to fit the agenda of certain interested parties. Statistics belong to the people whose needs should be given priority by the statistical agency concerned.

Generally, stakeholders dislike revisions to quarterly GDP, particularly since quarterly GDP is a key target for monetary policy¹⁶. Stakeholders are concerned as revisions will affect their forecasts. To compilers of national accounts, revisions are required due to the incomplete information used to estimate the short term indicators, errors in reporting, and lack of final data from annual surveys.

The short term indicators based on information collected from respondents are subjected to revisions as some of the respondents complete the questionnaires with estimated figures¹⁷. Usually respondents would revise their figures in the following month and resubmit them later.

The final survey/census data, available after a lag of two to three years, are used to revise the previously released annual and quarterly estimates. The revision will keep the quarterly national account estimates consistent with annual estimates¹². Adjustments need to be made to the quarterly figures since the annual data are based on more reliable sources than the inputs for quarterly estimates.

This adjustment can therefore be looked at as either a further improvement of the quarterly estimates by incorporating annual information or as a subdivision of the annual figures into quarters using the preliminary quarterly estimates as indicators. Stakeholders need to know that revisions are aimed at enhancing the quality of the previous estimates.

Enhancing and empowering the statistical system

a. Human resource

A meaningful improvement in the compilation of quarterly GDP requires a substantial expansion in human resources. For the purpose of quarterly GDP compilation, a

separate survey has to be carried out to cover specific sub-sectors/activities that are not covered in the scheduled censuses/surveys and other data sources. Currently the QNA survey comprises of 4,500 to 5,000 establishments.

Lack of manpower is one of the main obstacles to both achieving high response rates and obtaining high quality data. Knowledge and expertise in various aspects of statistical activities are crucial if DOSM is to move forward to be at par with other renowned National Statistics Offices.

Even to effectively perform its basic activities of data collection, compilation, processing; tabulation and presentation of results; and dissemination of the statistics thus generated, DOSM's staff strength appears rather limited. The following table gives an indication of DOSM's position with respect to human resources in comparison with two leading NSOs.

Table 4: Comparison of DOSM with ABS (Australia) and StatCan (Canada)

Country	Staffing		
	Malaysia	Australia	Canada
Population	26 Mil.	20 Mil.	32 Mil.
Permanent Employees of Stats. Agency	2289 250 Univ. Grad 220 Statisticians 20 S. Analysts 10 Admin/Finance 2039 Others	2600 40 percent Univ. Grad	5800 100 Executives 1200 Economists/ Sociologists 300 Mathematician/ Statisticians 900 Analysts 1500 Technical 800 Administrative 100 Clerical

b. Financial allocation

A large financial allocation is needed to compile a sound GDP data. Acknowledging the importance of data on the services sector and selected manufacturing sub-sectors, the Economic Planning Unit has agreed to give financial support to conduct the QNA survey. For this survey, many temporary officers have been recruited. Adequate financial allocations are also provided for the development of tourism satellite accounts and capital stocks statistics.

c. Authority in compilation and dissemination

In Malaysia, GDP has been released by the Central Bank since 1999. This is done to include the announcement of the corresponding monetary policies in relation to the economic performance indicated by the GDP figures. Except for those in the

stakeholder agencies, ordinary users and members of the public are not aware that the GDP figures are compiled by DOSM.

DOSM is actively moving forward in creating awareness among the public on the ownership of compilation of GDP in order to promote better cooperation and understanding between DOSM and the respondents. From a wider perspective, such efforts will eventually result in better appreciation of GDP and official statistics in general, thus expanding DOSM's user community. DOSM's responsibility should encompass the collection, compilation and analysis of data as well as the dissemination of the resulting official statistics. The wider role is more transparent and well emphasised in several other countries. For example in Indonesia, GDP data are collected and released by Badan Pusat Statistik (BPS). This is also the situation in the Philippines where the National Statistical Coordination Board (NSCB) collects and releases the GDP data. In the case of US and Thailand, the GDP figures are compiled and released by the Bureau of Economic Analysis (BEA) and National Economic and Social Development Board (NESDB) respectively, even though the input data are supplied by other agencies such as the Federal Statistics in US and the National Statistics Office in Thailand.

The arrangement in South Korea is similar to that in Malaysia. GDP estimates for South Korea are released by the Bank of Korea. However, South Korea is in the process of transferring this task to the NSO. This is done to enhance independence and credibility of the NSO as an agency responsible for the compilation of national accounts.

Table 5: Agencies that collect and release data for each country

Country	Data collected by	Data compiled and released by	GDP Announcement
United States	Federal Statistics (FedStats)	Bureau of Economic Analysis (BEA)	Bureau of Economic Analysis (BEA)
Thailand	National Statistics Office (NSO)	National Economic and Social Development Board (NESDB)	National Economic and Social Development Board (NESDB)
Indonesia	Badan Pusat Statistik (BPS)	Badan Pusat Statistik (BPS)	Badan Pusat Statistik (BPS)
Philippines	National Statistics Coordination Board (NSCB)	National Statistics Coordination Board (NSCB)	National Statistics Coordination Board (NSCB)
Malaysia	DOSM	DOSM	Bank Negara

It should be noted that according to the existing Statistics Act of Malaysia :

The functions of the Department shall be to collect and interpret statistics for the purpose of furnishing information required in the formation or carrying out of Government policy in any field or otherwise required for Government purposes or for meeting the needs of trade, commerce, industry or agriculture (including forestry, fishing and hunting). Save as hereinafter provided, the Department shall where they consider it in the public interest have power to communicate statistics collected by them or their interpretation of statistics so collected not only to the Government department or person for whom the information was collected but also to other authorities or persons to whom the information or interpretation may be useful¹⁸.

A national statistics office is expected to provide information to the government as well as to the business community and the general public, in the economic, demographic, social and environmental fields. To the government this information is essential for formulation of public policies and for monitoring implementation of the corresponding development programmes. Communicating such information to the international community would greatly facilitate cooperation and trade among countries and peoples of the world.

In order for the user community and the public to trust official statistics, a statistical agency must have a set of fundamental values, preferably based on internationally accepted guidelines. It is thus imperative that the agency concerned adhere to the basic principles of independence¹⁹, relevance²⁰ and credibility²¹ of official statistics. Due respect should also be given to the rights of respondents²².

Conclusion

Realising the importance of GDP and national accounts statistics in general, attempts to come up with official estimates for the country could be traced back to the 1940s. Major events, such as the previous financial crisis have emphasised the need for timeliness. From the first quarter 1999 onwards, quarterly GDP were released on a quarterly basis.

A real challenge is in obtaining the required input data within the time schedule of the quarterly compilation. Data limitations include deficiencies in coverage of specific sub-sectors as well as the lack of data that meet the exact specification required for application of standard methods of estimation. Reducing occurrences of such problems requires commitment from agencies supplying secondary data as well as co-operation and confidence of targeted respondents of primary data collection by DOSM.

Generally, achieving methodological perfection is an ideal, and estimation of quarterly GDP is no exception. Data limitations inhibit the direct application of standard procedures. Such problems warrant alternative methods of estimation. The paper highlights the approaches adopted through the use of indicators, movers, deflators and IO ratios. However, even in such circumstances, DOSM is in a good position to devise the most feasible set of procedures. Since almost all available indicators and other inputs for implementation of such alternative procedures are themselves generated by DOSM, the department is expected to benefit from prior knowledge on the strengths and weaknesses of each of them.

Recommendations towards enhancement of the national accounts system need to be viewed in relation to the guidelines laid out by the United Nations, which encompass the wider scope of the national statistical system.

In terms of human resource requirement, it is noted that compared to several leading NSOs, DOSM is lacking in both the total staff strength as well as the number of senior level professionals. While in most developed countries, concepts pertaining to System of National Accounts are taught in Universities and institutions of higher learning, exposure on the SNA, even among the user community, is lacking in this country. A more informed public would result in better co-operation from potential respondents while a proper exposure is expected to improve appreciation of GDP estimates.

Authority in compilation and dissemination of GDP figures too has a bearing on acceptability of GDP estimates. Authority should be considered in relation to the need to gain public trust in official statistics, which in turn requires uncompromising adherence to ethical principles of independence, relevance and credibility.

Endnotes

1. An earlier version of the paper was presented by the writer in the National Statistics Conference, 4-5 September, 2006. The author is currently the Deputy Chief Statistician, Macro and Development Programme, Department of Statistics, Malaysia. The author would like to acknowledge the valuable inputs from colleagues at the Department of Statistics, Malaysia, particularly Zainol Othman, Mohd Uzir Mahidin, Maslina Samsudin, R. Kanageswary, and Lee Wooi Yin of the National Accounts Statistics Division.
2. See Malaysia Economic Statistics – Time Series 2002. A brief account of the historical development of national account statistics in Malaysia is also given in Ahmad Z. (2001).
3. IO tables are vital in constructing the GDP as the relevant tables explain and analyse relationships between producers and consumers as well as dependencies between industries. IO tables track the commodity flow (goods and services) from one industry to another industry. The flow of commodities supplied and used thus compiled provides information in the form of tables of services and goods resources, cross-sectoral balance of production and dissemination of goods and services in consumer prices and in basic prices, tables of imported resources use, tables of agent and transport surcharges, and net taxation on products. The IO tables system is a complex system of interlinked tables, revealing sources of formation of goods and service resources, direction of their use for satisfaction of intermediate and final consumption, the structure of price formation, content of expenses, cross-sectoral relations, and use of value added in sectors etc.. The IO tables system gives a great opportunity to analyse the proportions of reproduction and structural changes in the economy.
4. The 1987 IO tables laid the foundation for determining the current GDP structure. The main industry by industry matrix of the IO tables shows the value of output, input and value added of each industry. The same table also

shows how the available goods and services are distributed among the expenditure groups. The commodity by activity table shows the values of production before commodity taxes are added. Expenditure on GDP is also derived from the 1987's IO tables. The IO tables also provide the frame for the household consumption behaviour.

5. An opening note from Dr. Mahathir bin Mohamad in *Pelan Pemulihan Ekonomi* (1998) and Walker A. (1999) elaborated on the impact of the 1997 crisis to Malaysia.
6. The importance of national accounts is well summarised by Nobel laureate Samuelson P. and his co-author Nordhaus W. in the 15th edition of their textbook, *Economics* and this was highlighted by the U.S. Department of Commerce (2000) on GDP: One of the Great Inventions of the 20th Century.

Much like a satellite in space can survey the weather across an entire continent so can the GDP give an overall picture of the state of the economy? It enables the President, Congress, and the Federal Reserve to judge whether the economy is contracting or expanding, whether the economy needs a boost or should be reined in a bit, and whether a severe recession or inflation threatens.

Without measures of economic aggregates like GDP, policymakers would be adrift in a sea of unorganized data. The GDP and related data are like beacons that help policymakers steer the economy toward the key economic objectives.

7. See Econoday (2004), for an account of U.S. Economic Events.
8. See Standard Bank Online Share Trading on role of GDP in influencing investment returns.
9. See U.S. Department of Commerce (2000) on GDP as one of the great inventions of the 20th century.
10. See Scott (1996) for examples and rationale on the importance of GDP under the Keynesian theory.
11. Bernanke B., (2004) noted that a significant increase in oil prices can simultaneously slow economic growth while stoking inflation. Thus, a drastic increase in oil price will also be reflected in the GDP – hence the importance of GDP .
12. Bloem A., Dippelsman R. and Maehle N.(2001), pp.1 noted that although QNA compilers often focus on components of GDP, the quarterly expenditure and income components of GDP, in conjunction with balance of payments data, provide all items for the full sequence of consolidated accounts for the total economy. Furthermore, it is imperative that the QNA be consistent with the ANA. They also highlighted on the need to use appropriate set of indicators in compiling the Quarterly GDP.

13. Based on a study in Petaling Street, Kuala Lumpur, Malaysia, Turner, S. (1994) observed the transformation experienced by informal sector which was attributed to globalisation.
14. See Bloem et. al (2001), pp.31.
15. *ibid.*, 35.
16. See F. Maitland-Smith on expectations of users and their negative perceptions on revisions of quarterly GDP.
17. See Claudio Lupi and Franco Peracchi, 2003, pp. 71-72 for an elaboration on the need to revise the quarterly GDP estimates.
18. See Corporate Plan 2005 - 2009, 2005, pp. 44-52 for a reference on the Department's Statistics Act 1965 (Revised 1989).
19. See United Nations, 2003, Handbook of Statistical Organisation, Third Edition, for guidelines on the operation and organisation of a national statistical office (UN, 2003), pp. 5-7.
20. *ibid.*, 7-9.
21. *ibid.*, 9-10.
22. *ibid.*, 10-11.

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