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Title of paper
MEASURING GOODS FOR PROCESSING AND MANUFACTURING SERVICES IN MALAYSIA

Abstract
(200 – 350 words)

The external trade sector continues to spearhead Malaysia’s economic growth. Measurement of external trade was purely based on the flows of goods between countries. Following an international dispersion of a company’s production processes for goods and services, measurement of international trade has shifted towards a change in ownership of the goods concerned and not merely the physical cross-border movement of goods. This principle has outlined that any goods sent abroad for processing (GFP) does not change ownership, the goods must be excluded from the trade in goods data. Instead, the processing fees are recorded as manufacturing services (MS). The recommendation is highlighted in System of National Accounts 2008 (2008 SNA) and Balance of Payments and International Investment Position Manual, Sixth Edition (BPM6). This paper aims to highlight on concept and methodology used in measuring GFP and MS in Malaysia.

Keywords: GFP and MS
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II. Introduction

A. Overview

The Department of Statistics, Malaysia (DOSM) completed the rebasing of Malaysia's Growth Domestic Product (GDP) from base year 2005 to 2010 in May 2015. With effect from first quarter of 2015, the estimates of GDP at constant prices are now expressed in terms of 2010 prices. The rebasing exercise covered time series of GDP from 2010 until 2014 for annual basis and first quarter of 2010 to fourth quarter of 2014 for quarterly basis.

B. Recommendation

Following the practice of rebasing, the compilation of GDP has undertaken the enhancements in concept, methodologies and data sources which were in line with the latest international guidelines in statistical compilations. One notable improvement is the adoption of treatment of goods sent abroad for processing (GFP) and manufacturing services (MS) as recommended in the System of National Accounts 2008 (2008 SNA) and Balance of Payments and International Investment Position Manual, Sixth Edition (BPM6) 2009. The enhancement in data compilation for GFP and MS is to capture structural changes taking place in Malaysia's economy which was influenced by the globalisation in process of production. Proper treatment of GFP and MS in compilation of national accounts statistics is becoming more pertinent following an expansion in globalisation of production.

C. GFP and MS in Current Compilation

Malaysia, being an open economy with the external trade is the major driving force behind the economic growth since early 1980s, largely in commodity and commodity based industries. In 1990s, as Malaysia moves toward industrialised economy, the external trade of goods shifted
from commodity-based products to electrical and electronic products. Total trade in Malaysia reached a value of RM1.11 trillion in 2005 and expanded to RM1.30 trillion in 2010\textsuperscript{1}. Resulting from the implementation of GFP and MS, share of Manufacturing sector narrowed to 23.4 per cent in 2010 from 25.2 per cent of share prior to GFP & MS.

D. Objective of the Paper

This paper aims to provide an overview on concept of measuring GFP and MS based on international recommendation; change in ownership principle. It also provides methodological overview of the GFP and MS data collection. The paper highlights the treatment of GFP and MS in the compilation of GDP and Balance of Payment (BOP) statistics in Malaysia.

E. Organisation of the Paper

This paper is structured in six parts, each of the chapters are comprised of sub-topic. Part II contains Introduction accompanied with explanation on the recommendation by international manuals and compilation of GFP and MS in current practice.

In part III, a description on measuring of GFP and MS is explained through conceptual overview particularly in manual used and concept of change in ownership. This followed by a clarification on major changes and improvement. Subsequently, this topic focuses on data sources and issues & challenges faced by the Department in the compilation. Impact on GDP and comparison between countries are described in the last section of part III. Conclusion, Appendix and References are included in the final section of Part IV, V and VI respectively.

\textsuperscript{1} Annual National Accounts Gross Domestic Product (GDP) Malaysia 2010-2014, Department of Statistics, Malaysia, 2015
III. Goods for Processing and Manufacturing Services

A. Conceptual Overview

1. Manual used

The measurement of GDP was based on the concept of centre of predominant interest which was outlined in 2008 SNA and BPM6. This is the basis in determining whether or not an entity is a resident in an economic territory. Clear understanding on this concept is pertinent particularly in recording a transaction between residents and non-residents which later will reflect in the GDP by expenditure approach and BOP statistics.

Both 2008 SNA and BPM6 recommended that imports dan exports should be recorded on a strict change of ownership principle\(^2\). Meanwhile, although the International Merchandise Trade Statistics 2010 (IMTS 2010) acknowledge the presence of goods for processing in the merchandise trade, the recording of these goods are to be included in the merchandise exports and imports of the countries at their full gross value\(^3\). This was due to the IMTS 2010 recommendation to record imports and exports based on the physical movement of goods across borders.

In view of recommendation of 2008 SNA and BPM6, Malaysia’s GDP and BOP statistics has made a treatment of the merchandise trade statistics. The treatment of GFP and MS was introduced in GDP and BOP statistics with effect from the first quarter of 2010 onwards.

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\(^3\) International Merchandise Trade Statistics: Concepts and Definitions 2010, Department of Economic and Social Affairs, Statistics Division, United Nations, 2011
2. Concept of change in ownership

The goods trade flows are recorded only when the goods change ownership, not when they are physically delivered to an economy for processing without a change in ownership. Goods sent abroad for processing includes goods for assembly, packing, labelling or processing by an entity that does not own the goods concerned.

According to 2008 SNA and BPM6, all processing of goods regardless of whether it returns to the country of the principal or is exported to a third country is now recorded on a fee basis in the services account rather than gross in the goods account. The processing fee received by processor country is recorded as services trade. The BPM6 indicates that the manufacturing service fee could include the cost of materials purchased by the processor.

Practice of goods processing triggered when firms are devoting a lot of efforts to fulfil demand through the most efficient use of resources, including distribution, inventory and labour. This scenario has encouraged the producers to optimise each step of the production processes, often taking advantages of efficient production processes of other firms. Multinationals corporations are normally provide material or semi-processed goods and specifications to other firms abroad mandated to process or assemble goods for them. Therefore, this is a situation where goods were sent abroad to other countries for processing. This normally involved with the Manufacturing sector where the principal will provide the contractor with the raw materials or intermediate input to produce the output.

A movement of goods from one country to another usually involved a change of ownership, and this underlying reality was reflected in the position of the 1993 SNA. However, with the internationalisation of production, this is no longer the case, and in response the 2008 SNA

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recommends a change in treatment. These concerns have led to the recommendation that imputations for changes in ownership are no longer to be made when goods are sent abroad for processing 6.

B. Major Changes and Improvements

The 2008 SNA recommends that imports and exports should be recorded on a strict change of ownership basis. That is, flows of goods between the country owning the goods and the country providing the processing services should not be recorded as imports and exports of goods. Instead the fee paid to the processing unit should be recorded as the import of processing services by the country owning the goods and an export of processing services by the country providing it.

Figure 1 shows the scenario goods sent abroad for processing within country A as a principal and country B as processor. In this scenario, principal unit in Country A sends its semi-processed goods for further processing to a processor unit in Country B. The processor never purchased the material received from the principal unit. The value of the goods sent for processing is valued at 100 while the value of the goods after processing is estimated at 160. Processing fees are equal to 60.

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Goods sent abroad for processing were recorded as neither exports of goods by the country holding economic ownership nor as imports of goods by the processing country in either 2008 SNA or BPM6. Similarly, after processing they are recorded neither as exports by the processing country nor as imports of goods by the country of economic ownership. The only item recorded as imports and exports is the fee agreed between the economic owner and the processor.

C. Measuring Goods for Processing and Manufacturing Services

1. Development phase

The development in implementation of GFP and MS in Malaysia was officially started in 2011 with the appointment of GFP Technical Committee at the Department level. This committee was established with a membership comprised of six divisions under Economic Programme. The purpose of the committee is to collect and compile statistics on processed goods with or without a change of ownership as well as manufacturing services statistics. In May 2012, Malaysia released a new base year of GDP at 2005 base price and has partially implemented 2008 SNA with exclusion of GFP and MS treatment. In May 2015, GDP base year 2010 was released with the implementation of GFP and MS which is line with full implementation of BPM6 for BOP Statistics.

2. Identifying company involve in GFP & MS

There are many ways to measure the value of GFP & MS as recommended by 'Eurostat Manual on Goods Sent Abroad for Processing 2014'\(^7\). The value can either be collected through customs declaration data, Balance of Payments (BOP) survey data, business survey data or VAT information.

\(^7\) Manual on goods sent abroad for processing 2014, Eurostat, European Union, 2014
DOSM adopted a survey method in measuring the value of GFP and MS in Malaysia. Existing Economic Census of Manufacturing Industries 2010 was used as a first step in filtering companies involved in GFP & MS activities. It was a valuable visit as available on-hands data could be verified and additional information was obtained (e.g. value of sales, local or foreign production and country of origin) to further strengthen current analysis. The companies were determined through the question number of 8.2.1 (field number 2002): "Income from industrial services rendered: Fee received for processing work done for other establishments' on their materials" as illustrated in the Appendix 1.

The second step was to identify the companies that involved in the activities of cross-border. This was done through a filtering process based on a Question number 16.b2 (field number 1574): "If Question 8.2.1 is reported, please state the percentage (%) of income received from abroad for processing work done for other establishment" as illustrated in the Appendix 2.

Further filtering process was undertaken to ensure that the companies are really involved in GFP and MS. Screening process was taken place through an engagement session with the companies selected. Detailed companies’ information was collected particularly on the business process, sources of raw materials, business relation with parent company (if any) and etc. Subsequently, cross-checking analysis was performed between information gathered from companies and Customs data to validate both sources.

3. Data Sources: Survey of International Goods for Processing

At present, a survey on outward processing trade activities is conducted by the Department to delineate outward and inward processing in the Malaysia from conventional trade. The survey is known as ‘Survey of International Goods for Processing’ and was conducted to collect data on GFP and MS for identified companies that have undergone the screening process through
Annual Survey of Manufacturing Industries. This survey is conducted on a quarterly basis and was started in March 2011, for the reference quarter of the first quarter of 2011.

The survey provides estimates of the value involving in goods received from abroad for processing in Malaysia and goods sent abroad for processing without change of ownership. Based on the Survey of International Goods for Processing, there are three questions that companies are required to fill up. The first question is intended to determine the principal activity of a company as illustrated in the Appendix 3.

Based on feedback from the companies, a designated industrial code was given according to the Malaysia Standard Industrial Classification 2008 (MSIC 2008) which is equivalent to International Standard Industrial Classification Rev. 4 (ISIC Rev. 4). The concordance code for ISIC can arrive to Standard International Trade Classification, Rev.4 (SITC Rev.4) code which is important in BOP and National Accounts treatment of GFP & MS.

The second question focused on goods received from abroad for processing in Malaysia with an input owned by other companies abroad as illustrated in the Appendix 4.

In Question 2, important information on value of processing fees received which then translated as exports of manufacturing services was obtained. Moreover, value of exports of goods owned by others is used to deduct from exports data obtained from customs declarations. The final question in Question 3 is to determine whether a company involved in outward processing as shown in the Appendix 5.

4. Issues and challenges

During the compilation, there are many challenges faced in measuring the GFP and MS in Malaysia. One of the challenges is to identify companies that involved in cross-border GFP and MS activities. Furthermore, in-depth information on the business nature of companies involved
in GFP and MS is also very important. Thus, screening and filtering of companies has been undertaken to reaffirm the involvement of selected companies in GFP and MS activities.

Second challenge is to ensure that data collected are reliable and portrayed the actual scenario GFP and MS in the economy. Hence, consistency checking on sales and fees received variables is performed between data collected from Survey of International Goods for Processing, Monthly Manufacturing Survey, Annual Manufacturing Survey and customs data.

It is also a challenge to collect trade declarations data as it will impose a heavy reporting burden to all traders. Thus, support and co-operation of traders in the business community is highly demanded. Moreover, trade declaration documents will involve a series of complex legal procedures and overall revision in customs legislations.

There is no doubt that during the implementation of GFP and MS in Malaysia, the Department faced many issues and challenges. Nonetheless, with a commitment by the Department’s personnel, good cooperation among industrial players and other government agencies as well as engagement with international bodies has made this effort came to realise.

D. Impact on GDP

1. GDP of Malaysia

The new international standards for recording goods sent abroad for processing as outlined by the SNA 2008 and BPM6 has a substantial impact towards GDP. During the rebasing exercise of GDP to year 2010, Malaysia’s GDP has incorporated the treatment of GFP and MS in the compilation of GDP, apart from the enhancement of data sources and coverage.

Following the GFP and MS implementation, GDP of Malaysia was revised downward in the range of 0.3 per cent to 0.5 per cent for year 2010 to 2014. Chart 1 depicts the growth of GDP
for pregfp and postgfp, where pregfp denotes value added prior treatment of GFP and postgfp indicates value added after treatment of GFP. Overall, growth rates of GDP in pregfp and postgfp were broadly unchanged. The growth difference was in the range of 0 to 0.1 per cent from year 2011 and 2014. This shows that following a treatment of GFP and MS has a low impact on the growth of GDP (Chart 1).

Chart 1: Annual growth of GDP at Constant prices from 2011 to 2014

2. Impact on Sectoral

Implementation of GFP and MS affected both GDP by Production approach and GDP by Expenditure approach. In the GDP by Production approach, only Manufacturing sector has an effect from this implementation. Manufacturing sector contributed 24.5 per cent (pregfp) to GDP in year 2010, whereby electrical & electronic products contributed 24.2 per cent (pregfp) to the Manufacturing sector. Being an export-oriented industry, electrical & electronic products was highly involved in GFP and MS. More than 50 per cent of its inputs are imported and 70 to 80 per cent of the outputs from production are exported to other countries.
Share of Electrical and electronic products for year 2010 narrowed to 25.1 per cent (constant 2010 prices) as against 27.0 per cent (constant 2005 prices). The lower contribution was influenced by a treatment of GFP. On average, value added of Manufacturing sector was revised downward by 1.1 per cent to 1.7 per cent between year 2010 to 2014. This revision was only applicable to data from year 2010 to 2014 which was in line with the time series of data treatment for exports and imports in BOP Statistics. In terms of growth at constant prices, the Manufacturing sector posted a slight revision below one per cent from year 2011 to 2014.

3. Impact on Regional

In line with the rebasing of GDP to year 2010 at national level, GDP by States also has been rebased to year 2010 which was released on 30 September 2015.

Following the rebasing exercise, implementation of GDP has a substantial impact particularly to the states that highly concentrated in manufacturing of electrical and electrical industries. Pulau Pinang is known as one of the states in Malaysia that highly concentrated in manufacturing industries, mainly in electrical and electronics products. Share of Electrical and electronics products sub-sector at constant 2005 prices contributed 62.4 per cent to Manufacturing sector of Pulau Pinang. Meanwhile, after the rebasing of GDP to year 2010, the share reduced to 58.7 per cent.

Following the treatment of GFP & MS has largely influenced the changes in economic structure of Pulau Pinang. Prior to the GFP & MS implementation, Manufacturing was known as the leading sector in driving the economy in Pulau Pinang with a share of 50.4 per cent and in 2010. However, the Manufacturing share in 2010 was revised downward to 45.9 per cent (constant 2010 prices) after GFP & MS implementation.
4. External Sector

External sector is one of the components in GDP Malaysia which comprise of exports and imports of goods and services. After the implementation of GFP & MS, exports of goods and services contributed 86.9 per cent (pregfp: 93.3%), while imports of goods and services posted a share of 71.0 per cent (pregfp: 76.3%) to GDP at current prices in 2010. The net exports contributed 15.9 per cent (pregfp: 17.0%) to the economy in year 2010.

In terms growth, exports and imports posted a downward revision in the range of 0.1 per cent to 0.4 per cent following the implementation of GFP & MS for year 2011 to 2014 (Chart 2 & 3). Overall, the impact of GFP and MS towards the growth of exports and imports are rather less significant.

Chart 2: Annual Growth of Exports at Constant Prices
E. Comparison between Countries

Table 1 depicts a comparison on the implementation of GFP between Malaysia and Indonesia upon the adoption of 2008 SNA and BPM6. The treatment has affected the goods and services accounts of BOP statistics which then translated in the measurement of GDP.

In the goods accounts, exports of Malaysia reduced significantly by RM38.5 billion (revision -6.0%) as compared with USD9.7 billion (revision -4.8%) for Indonesia. Similarly, imports of goods also posted a significant revision whereby Malaysia’s imports of goods declined by RM26.0 billion and Indonesia contracted by USD8.7 billion. Overall goods accounts for Malaysia were revised downward by 9.2 per cent as against Indonesia by 2.8 per cent. Despite Malaysia and Indonesia were known as processor countries, the impact of GFP treatment was less significant towards Indonesia as opposed to Malaysia.
The impact on services accounts was an increase of value in both exports and imports. For Malaysia, the exports of services accounts rose by RM8.6 billion where, RM8.3 billion or 96.7 per cent was due to an expansion in manufacturing services. While, the exports of services for Indonesia increased by USD1.2 billion where, RM1.1 billion came from manufacturing services.

Although the services accounts for both countries registered an upward value, it still cannot offset the downward revision in goods accounts. Thus, the net impact on goods and services accounts for Malaysia was a declined by RM4.6 billion and for Indonesia a decreased in value by USD128 million.

Table 1: Implementation of GFP & MS in Malaysia and Indonesia

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<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>USD Million</td>
<td>RM Million</td>
</tr>
<tr>
<td></td>
<td>BPM5</td>
<td>BPM6</td>
</tr>
<tr>
<td>Goods</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exports</td>
<td>34,783</td>
<td>33,825</td>
</tr>
<tr>
<td>Imports</td>
<td>200,788</td>
<td>191,109</td>
</tr>
<tr>
<td>Services</td>
<td>(10,633)</td>
<td>(9,803)</td>
</tr>
<tr>
<td>Exports</td>
<td>20,690</td>
<td>21,888</td>
</tr>
<tr>
<td>of which MS</td>
<td>-</td>
<td>1,081</td>
</tr>
<tr>
<td>Imports</td>
<td>31,323</td>
<td>31,691</td>
</tr>
<tr>
<td>Net Exports</td>
<td>24,150</td>
<td>24,022</td>
</tr>
</tbody>
</table>

* Refers to BPM6, exclude of treatment on GFP & MS

Source: BPM6 Implementation: What will Change in the Indonesia’s Balance of Payments (BOP) April 2014, Bank Indonesia, 2014
IV. Conclusion

Acknowledging the importance to keep abreast with the latest international manuals and recommendations as well as in ensuring the methodology and concept used is comparable internationally, DOSM has incorporated recommendations by 2008 SNA and BPM6 manuals in national accounts and BOP compilation. One of the recommendations is the concept on globalisation of production or known as GFP and MS. Thus, DOSM has established a comprehensive planning on the implementation of GFP and MS in the beginning of year 2010.

Dedicated working group on GFP and MS was established in 2011 which comprised of experienced statisticians. Subsequently, proposals and suggestions form this working group have been implemented such as incorporation of questions related to GFP and MS in questionnaire of Economic Census 2011. Proper planning and extensive coordination among divisions, state offices and other related agency enabled the success of GFP & MS implementation.

DOSM is never complacent on the statistics that have been produced. Continuous monitoring and tracking of GFP and MS data is essential in ensuring that DOSM will keep producing relevant statistics to reflect any changes.

The dynamic expansion of MS in Malaysia’s economy is becoming paramount. Thus, collective efforts by statisticians and policy makers will play a vital role in shaping the position of MS in Malaysia’s economy.
V. Appendix

Appendix 1

Income from industrial services rendered: Fee received for processing work done for other establishments' on their materials

Source: Economic Census of Manufacturing Industries 2010 - Question 8

Appendix 2

Percentage of income received from abroad for processing work done for other establishment

Source: Economic Census of Manufacturing Industries 2010 - Question 16
Appendix 3

Principal activity of a company

<table>
<thead>
<tr>
<th>Question 1 : Please describe the principal activity of your company</th>
</tr>
</thead>
</table>

Source: Survey of International Goods for Processing

Appendix 4

Goods Received From Abroad for Processing In Malaysia

<table>
<thead>
<tr>
<th>GOODS RECEIVED FROM ABROAD FOR PROCESSING IN MALAYSIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question 2 : Do your company involve in manufacturing services/outsource processing/contract manufacturing/goods for processing (physical input owned by companies abroad)</td>
</tr>
</tbody>
</table>

Yes □ (Go to Next Question) No □ (If No, end here)

<table>
<thead>
<tr>
<th>Question 2A : Import of raw material owned by others (no change of ownership)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question 2B : Export of processed goods/finished goods owned by others to owner or third country</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
</tr>
<tr>
<td>------</td>
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</tr>
</tbody>
</table>

Source: Survey of International Goods for Processing - Question 2
Appendix 5

Goods Sent Abroad for Processing

<table>
<thead>
<tr>
<th>GOODS SENT ABROAD FOR PROCESSING</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Question 3</strong> : Do your company SEND goods for processing abroad</td>
</tr>
<tr>
<td>Yes ☐ (Go to Next Question)  No ☐ (If No, end here)</td>
</tr>
</tbody>
</table>

**Question 3A** : Export of raw material owned by your companies

<table>
<thead>
<tr>
<th>No.</th>
<th>Export (RM 000)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
</tbody>
</table>

**Question 3B** : Import of processed goods/ finished goods owned by your company

<table>
<thead>
<tr>
<th>No.</th>
<th>Types of workdone *</th>
<th>Import (RM 000)</th>
<th>Processing Fees Paid (RM 000)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* (1) Processing  (2) Assembly  (3) Labelling  (4) Packaging  (5) Testing  (6) Oil Refining

Source: Survey of International Goods for Processing - Question 3
VI. References


