Abstract

In order to better reflect the rapid development in globalisation and the latest trend in international trade, the *System of National Accounts 2008 (2008 SNA)*, as well as the *Sixth Edition of the Balance of Payments and International Investment Position Manual (BPM6)*, recommends to adopt the change of ownership principle in recording international trade in goods and services in the national accounts framework to facilitate analysis of genuine international trade flows and the impact of globalisation of economic activities on international trade.

This new statistical standard is particularly relevant to the economy of Hong Kong, as trading activities related to goods sent abroad for processing and merchanting play a vital role in the external trade of Hong Kong. With extensive work done and solid foundation established, the Census and Statistics Department (C&SD) of Hong Kong has incorporated this new statistical standard in compiling trade in goods and services statistics under the Gross Domestic Product (GDP) and Balance of Payments (BoP) compilation frameworks of Hong Kong since September 2012.

This paper summarises the development work in implementing the change of ownership principle in the national accounts framework of Hong Kong, elaborates on the practical difficulties encountered in data collection, and the impact on Hong Kong’s trade in goods and trade in services statistics. The issue factoryless goods production will also be briefly discussed.
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II. Introduction

1. In order to better reflect the rapid development in globalisation and the latest trend in international trade, the System of National Accounts 2008 (2008 SNA), as well as the Sixth Edition of the Balance of Payments and International Investment Position Manual (BPM6), recommends to adopt the change of ownership principle in recording international trade in goods and services in the national accounts framework to facilitate analysis of genuine international trade flows and the impact of globalisation of economic activities on international trade.

2. Implementing the change of ownership principle will have significant impact on the trade in goods and services statistics of economies that engage in substantial amount of processing trade and merchanting activities, though the Gross Domestic Product (GDP) levels would not be affected. This new statistical standard is particularly relevant to the economy of Hong Kong, as trading activities related to goods sent abroad for processing and merchanting play a vital role in the external trade of Hong Kong. With extensive work done and solid foundation established, the Census and Statistics Department (C&SD) of Hong Kong has incorporated this new statistical standard in compiling trade in goods and services statistics under the GDP and Balance of Payments (BoP) compilation frameworks of Hong Kong since September 2012.

3. During the implementation and development processes, C&SD had been actively participating in international deliberations on this new development. A number of papers\(^1\) presenting Hong Kong’s experience in studying the impact and drawing up the implementation plan of this new statistical standard had been discussed among the international statistical communities on different occasions. Also, C&SD had enhanced and developed statistical surveys for collecting the additional source data required. These data not only support the implementation of the new statistical standard, but also facilitate better understanding of the processing trade and merchanting activities of Hong Kong.

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\(^1\) Two papers were presented at the meetings of the IMF Committee on Balance of Payments Statistics (BOPCOM) in 2007 and 2008. Similar paper as the original version of the BOPCOM paper no. 07/20 was presented subsequently at the 2008 Conference of European Statisticians organised jointly by the United Nations Economic Commission for Europe and the United Nations Statistical Commission in June 2008 and the first meeting of the Organisation for Economic Cooperation and Development Working Party on International Trade in Goods and Trade in Services Statistics in September 2008. In 2012, a paper was prepared for the BOPCOM meeting.
4. Building on the deliberations and materials discussed in previous papers, this paper summarises the development work in implementing the change of ownership principle in the national accounts framework of Hong Kong; and elaborates on the practical difficulties encountered in data collection and the impact on Hong Kong's trade in goods and trade in services statistics. The issue of factoryless goods production will also be briefly discussed.
III. Body of Text

A. Processing trade and merchanting activities of Hong Kong

5. Hong Kong is one of the most externally oriented economies in the world. In 2015, Hong Kong was ranked the 8th largest trading economy in the world in terms of total value of external merchandise trade. The ratio of Hong Kong’s total merchandise trade value to its GDP was 318% in 2015.

6. Trading activities related to goods sent abroad for processing and merchanting play a vital role in the external trade of Hong Kong. Hong Kong’s outward processing activities are predominantly carried out in the mainland of China (the Mainland).

7. Since the 1980s, Hong Kong has witnessed rapid development of outward processing (OP), as many manufacturing companies in Hong Kong have relocated their production processes to the Mainland to take advantage of the geographical proximity, and lower land and production cost there. OP trade in the Mainland can be carried out under the arrangements of either “processing and assembling” or “processing with imported materials”. Of the goods sent to the Mainland for processing in 1980s and 1990s, the majority was under the arrangement of processing and assembling, in which the Hong Kong companies provided raw materials and semi-manufactures, designs, equipment and machinery to factories in the Mainland for processing. The processed goods were returned to Hong Kong for local consumption and/or re-exportation. Both the raw materials sent to the Mainland for processing and the finished output after processing belonged to the Hong Kong companies throughout the whole process, i.e. there was no change of ownership. The finished products processed under processing and assembling arrangement were

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According to Mainland China Customs’ definitions, there are two types of inward processing trade, viz.: processing and assembling and processing with imported materials. Processing and assembling refers to the type of inward processing in Mainland China in which foreign suppliers provide all or part of the raw materials, parts or components under a contractual arrangement for the manufacture or assembling of products, which are for subsequent exportation from Mainland China by the foreign suppliers. Under this type of processing, the imported inputs and the finished outputs remain to be the property of the foreign suppliers throughout the whole process. Processing with imported materials refers to the type of inward processing in Mainland China in which the raw materials, parts and components are purchased with foreign currencies and imported by Mainland China’s processing units for the manufacture of products or semi-manufactures, which are for subsequent exportation to foreign markets from Mainland China. Under this type of processing, the ownership of the imported inputs has been transferred to Mainland China’s processing units. In compiling trade in goods and services statistics of Hong Kong under the new principle, adjustments are needed only for Hong Kong’s outward processing in Mainland China under processing and assembling contracts.
exported with no domestic sales in the Mainland. We note a gradual shift in outward processing from *processing and assembling* to *processing with imported materials* arrangements in the recent past.

8. In recent decades, along with the rapid infrastructural development in the Mainland, particularly ports and related transportation facilities, traders in Hong Kong have diversified their export channels by exporting goods processed in the Mainland directly to markets outside Hong Kong without re-exporting through Hong Kong.

9. Taking advantage of their extensive trading network with buyers and sellers in the global market, Hong Kong traders engage in a substantial amount of merchanting activities. The trading of goods under merchanting involves actual buying and selling activities (with a change of ownership).

**B. Implementation of the change of ownership principle in Hong Kong**

10. Under the new statistical standards stipulated in the *2008 SNA*, the change of ownership principle is adopted in recording trade in goods and trade in services in national accounts. Goods sent abroad for processing are not recorded as trade in goods if they do not involve actual buying and selling activities (i.e. no change of ownership is involved). The processing fee involved is recorded as trade in services to reflect the value of the manufacturing services imported from the processing economy.

11. For merchanting, the new statistical standard stipulates that the value of goods sold by a resident trader to a non-resident trader is recorded as exports of goods (since a change of ownership is involved), while the value of goods acquired by the resident trader from a non-resident trader for resale is recorded as negative exports of goods, despite the fact that the goods involved may not physically enter and leave the economy where the trader resides in.

12. In preparation for the implementation of this new development, C&SD has conducted in-depth analyses and empirical studies on the processing trade and merchanting activities undertaken by Hong Kong companies. Companies in Hong Kong typically undertake three types
of processing trade and merchanting activities: (a) outward processing; (b) merchanting; and (c) offshore trade activities involving outward processing. The following paragraphs highlight the development of new statistical surveys for these three types of trade in recent years that underpinned the implementation of the new standards.

(i) Outward processing

13. Hong Kong’s outward processing activities are predominantly carried out in the Mainland. OP trade in the Mainland can be carried out under the arrangements of either “processing and assembling” or “processing with imported materials”. Under the arrangements of processing and assembling, the raw materials or semi-manufactures sent to the Mainland for processing and the processed goods subsequently returned to Hong Kong remain to be owned by the Hong Kong traders throughout the whole process, and hence no trade is actually involved under the change of ownership principle. The Hong Kong traders just pay fees for manufacturing services to the processing units in the Mainland. Under the arrangements of processing with imported materials, the ownership of the imported inputs has been transferred to the Mainland’s processing units. The ownership of the processed goods is then transferred to the Hong Kong traders after processing.

14. In processing trade, only those trading activities related to goods under processing and assembling contracts do not involve a change of ownership. In compiling trade in goods and trade in services statistics of Hong Kong under the new statistical standards, adjustments are needed only for Hong Kong’s outward processing in the Mainland under processing and assembling contracts.

15. As trade of outward processing nature is mingled with other types of trade under the existing system of recording trade statistics, C&SD has long been conducting the Survey on Trade Involving Outward Processing in the Mainland of China (OP Survey) since 1988 to capture data on outward processing activities. The OP Survey is conducted on a monthly sample of import / export trade declarations.
16. For the purpose of implementing the new standards, the OP Survey has been enhanced since the second quarter of 2008 to collect additional data in respect of the processing and assembling contracts. Enhancements include collecting additional information on the following items pertaining to imports from the Mainland which involve outward processing of goods under the arrangement of processing and assembling:

(a) value of raw materials / semi-manufactures sent from Hong Kong to the Mainland;
(b) value of raw materials / semi-manufactures purchased and delivered directly from places other than Hong Kong to the Mainland;
(c) value of manufacturing services on physical inputs owned by Hong Kong, with the following breakdowns:
   (i) processing fees paid by Hong Kong; and
   (ii) raw materials / semi-manufactures procured directly by the Mainland’s processing units.

17. As information collected from the OP Survey is available only with relatively long time lag, statistical data models have been developed to produce preliminary estimates of goods related to OP trade at an aggregate level under the new standards, at shorter time lag for timely compilation of GDP and BoP statistics.

(ii) Merchanting and offshore trade activities involving outward processing

18. Considering the significance of merchanting activities in Hong Kong’s trade in services, C&S has been conducting an annual survey to collect relevant data since the 1990s. Data on the value of sales and cost of goods sold under merchanting are regularly collected to compile the value of merchanting services provided by Hong Kong traders. The new statistical standards specify that the value of goods sold under merchanting should be recorded as Hong Kong’s exports of goods, while the value of goods acquired by the Hong Kong traders for resale as negative exports of goods, although the goods may not enter and leave Hong Kong.

19. Offshore trade activities involving outward processing refer to the trading activities in which goods are processed under processing and assembling contracts, and subsequently sold to non-residents directly without the goods returning or passing through Hong Kong. In the previous treatment, the gross margin of offshore trade activities involving outward processing was recorded
as trade in services under exports of merchanting services. However, as the goods sold under such transactions involve actual selling activities (with a change of ownership), the new statistical standards of the 2008 SNA stipulate that the value of sales of relevant processed goods should be recorded as trade in goods. The processing fee involved is to be recorded as manufacturing services imported by Hong Kong traders.

20. In order to support timely compilation of relevant macroeconomic aggregates under the new statistical standards, a new quarterly survey on merchanting and other trading activities of business establishments has been launched since the first quarter of 2010. The survey aims to meet the data requirements on merchanting arising from the new statistical standards in a timely manner and enable the compilation of reliable quarterly statistics to facilitate economic analysis of international trade flows and trade structure of Hong Kong. To minimise respondent burden, only aggregate data are collected at quarterly intervals for timely compilation of quarterly GDP and BoP statistics under the new statistical standards.

21. Apart from collecting the value of sales and cost of goods sold under merchanting, the new quarterly survey also collects additional data related to offshore trade activities involving outward processing, which cannot otherwise be collected from trade declarations or the OP Survey of which the reporting unit is based on trade declarations, as these goods do not cross the boundary of Hong Kong.

22. The following additional data are collected on offshore trade activities involving outward processing activities via the new quarterly survey:

(A) value of goods sold offshore after processing;

(B) cost of goods sold offshore after processing, with further breakdowns into:

(a) value of raw materials / semi-manufactures sent from Hong Kong to the processing economy;

(b) value of raw materials / semi-manufactures purchased and delivered directly from places other than Hong Kong to the processing economy;

(c) value of manufacturing services on physical inputs owned by Hong Kong, with the following breakdowns:

(i) processing fees paid by Hong Kong; and
(ii) raw materials / semi-manufactures procured directly by the processing units abroad.

C. Difficulties encountered in data collection

(i) Outward processing

23. When the enhanced OP Survey was first set up, one major difficulty regarding data collection was that in undertaking the fieldwork of the survey, a significant proportion of respondents were logistics companies\(^3\), which has lodged the requisite trade declarations rather than the owners of imported processed goods. These respondents generally do not have readily available information pertaining to the new data required. To resolve this problem, C&SD had made considerable efforts in establishing rapport with major logistics companies through liaison meetings, courtesy visits and professional exchanges in the past years, so that these logistics companies could either acquire the relevant information from the goods owners themselves or provide the contact details of the goods owners for subsequent follow-up by C&SD. This established practice has successfully reduced the non-response rate of logistics companies to a reasonably low level. As a result, the overall response rate of the enhanced OP Survey is maintained at a relatively high level of around 85% in recent years.

(ii) Merchanting and offshore trade activities involving outward processing

24. Implementing the new standards for merchanting is more challenging than initially anticipated. It involves not just simply reclassifying the readily available data on net merchanting from services to goods, but also presenting merchanting data on a gross basis. Fieldwork experience of the new quarterly survey indicates that many respondents do not have readily available up-to-date quarterly information on the values of sales of goods and costs of goods sold in respect of merchanting, though they have rather up-to-date quarterly information on gross margins related to merchanting activities on hand. The reason is due to the late availability of bills

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\(^3\) It is a common phenomenon in Hong Kong that logistics companies take orders from the owners of processed goods to handle the shipment of goods as well as the submission of trade declarations. Logistics companies which are sampled in the OP Survey are mainly freight forwarders/cargo consolidators, carriers (e.g. airline and transportation companies) and couriers.
of sales, resulting from a common business practice for companies to receive such bills at a
certain time lag after the completion of the merchanting transactions.

D. Results of the enhanced and new surveys

(i) Enhanced survey on outward processing

25. The enhanced OP Survey provides new data for analysis of components of inputs
consumed in the manufacturing process. In particular, the survey results showed that overall
speaking, value of manufacturing services accounted for around 20% of the value of processed
goods. The remaining 80% were raw materials / semi-manufactures procured by the Hong Kong
traders for processing. Within this, around 70% were raw-materials / semi-manufactures sent from
Hong Kong to the Mainland while 10% were raw-materials / semi-manufactures purchased and
delivered directly from places other than Hong Kong to the Mainland. These structural ratios are
observed to be relatively stable at an aggregate level across different time periods.

26. Although data collected from the OP Survey are available only with longer time lag, they
 can be used to calibrate the preliminary estimates of trade aggregates produced by statistical data
models, and to support more in-depth analysis. The resulting statistics, especially the structural
ratios at commodity level, also serve to regularly update the parameters of the data models.

(ii) New survey on merchanting and offshore trade activities involving outward processing

27. According to the results of the new survey, among all the goods sold offshore (i.e. goods
sold and delivered to buyers without crossing the customs boundary of Hong Kong and hence
cannot be captured under the customs system) in 2015, about 5% (in terms of sales value) were
having processing and assembling arrangement outside Hong Kong. The remaining 95% were
goods sold under merchanting, i.e. goods bought and sold offshore without outward processing
arrangement.
28. The survey results also indicated that the trade margin for goods sold offshore after processing was higher than that for goods sold under merchanting (10% and 5% respectively in 2015). In 2015, of the cost of goods sold offshore under the processing and assembling arrangement:

(a) around 35% was related to raw-materials / semi-manufactures sent from Hong Kong to the processing economy;
(b) around 35% was related to raw-materials / semi-manufactures purchased and delivered directly from places other than Hong Kong to the processing economy;
(c) around 30% was related to manufacturing services on physical inputs owned by Hong Kong, which include processing fees paid by Hong Kong and value of raw-materials / semi-manufactures procured directly by the processing units abroad.

E. Impact on trade in goods and services statistics of Hong Kong

29. Trade in goods statistics compiled under the new standards can better reflect the genuine trade value of Hong Kong, irrespective of whether the goods traded pass through the boundary of Hong Kong. Under the change of ownership principle stipulated in 2008 SNA, exports of goods were estimated to be US$506 billion in 2015, higher than that compiled using the old statistical standards (US$488 billion). Of the US$488 billion of exports of goods compiled using the old statistical standards (based on 1993 SNA), US$27 billion of goods sent abroad for processing under processing and assembling arrangement were excluded. The remaining US$460 billion represented conventional exports of goods (Figure 1). On the other hand, US$17 billion of goods sold offshore after processing and US$29 billion net value of goods sold under merchanting were added.
The value of exports of goods compiled using the new statistical standards has become higher than that compiled using the old statistical standards only since 2012 (Figure 2). Before that, the reverse was true. The gap narrowed gradually, from about 9% in 2000 to 2% in 2010, mainly due to the moderation in the growth of goods sent abroad for processing amidst the structural shift of processing arrangements from processing and assembling arrangement to processing with imported materials arrangement in recent years. On the other hand, goods sold offshore after processing and the net value of goods sold under merchanting continued to prosper, which more than offset the decline in respect of goods sent abroad for processing under processing and assembling arrangement.
31. For imports of goods, the value compiled using the new statistical standards amounted to US$529 billion in 2015, smaller than that using the old statistical standards (US$553 billion). The new statistics reflect more closely the value of goods procured by Hong Kong traders for engaging in international trading activities, irrespective of whether the goods are actually imported into Hong Kong. The new statistics exclude goods returned to Hong Kong after processing in the processing economy (i.e. goods processing under processing and assembling arrangement) (US$34 billion), but include raw materials/semi-manufactures purchased by Hong Kong companies and delivered directly from places other than Hong Kong to the processing economy (US$10 billion) (Figure 3).

**Figure 3: Imports of goods compiled using the old and new statistical standards, 2015**

32. Similar to exports of goods, the discrepancies between the values of imports of goods compiled using the old and new statistical standards were getting smaller as a result of the structural change from processing and assembling arrangement to processing with imported materials arrangement (Figure 4). In 2000, the value of imports of goods compiled using the new statistical standard was about 22% smaller than that compiled using the old statistical standards. The gap was reduced to 12% in 2010 and further to 4% in 2015.
33. After implementing the new statistical standards, the balance of trade in goods of Hong Kong generally exhibited a structural change in past years (Figure 5). The trade in goods surplus recorded under the new statistical standards before 2011 was largely due to the exclusion of trade in goods sent abroad for processing and the inclusion of the net value of goods sold under merchanting in exports of goods. Nevertheless, from 2011 onwards, the balance of trade in goods recorded a deficit under the new statistical standards, which was mainly attributable to the rather buoyant import demand for supporting consumption and inbound tourism locally.
34. As regards trade in services, the statistics compiled using the new statistical standards showed that Hong Kong imported a substantial amount of manufacturing services on physical inputs owned by Hong Kong companies in 2015, with an estimated value of US$11 billion. This accounted for 15% of total imports of services (US$74 billion) in 2015, and reflected Hong Kong’s active involvement in the outward processing activities. The composition of imports of services in 2015 under the new and old statistical standards is shown in Figure 6.

Figure 6: Imports of services compiled using the old and new statistical standards, 2015

35. For exports of services, the gross margin of merchanting is taken out under the new statistical standards, as merchanting is now recorded as trade in goods rather than trade in services. The total exports of services compiled using the new statistical standard amounted to US$104 billion in 2015, with major components shown in Figure 7. In comparison, the total exports of services in 2015 compiled using the old statistical standards stood at US$136 billion.
36. The implementation of the new statistical standard generally changed the balance of trade in services of Hong Kong from surplus to deficit before 2009, due to the exclusion of exports of merchanting services and inclusion of imports of manufacturing services on physical inputs owned by others (Figure 8). Yet, from 2009 onwards, the balance of trade in services saw an increasing surplus, as imports of manufacturing services declined while exports of travel services and financial services grew significantly in those years.

Figure 7: Exports of services compiled using the old and new statistical standards, 2015

<table>
<thead>
<tr>
<th>1993 SNA / BPM5</th>
<th>2008 SNA / BPM6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Others</td>
<td>Others</td>
</tr>
<tr>
<td>11%</td>
<td>19%</td>
</tr>
<tr>
<td>Merchanting</td>
<td>Transportation</td>
</tr>
<tr>
<td>and other trade-related services</td>
<td>services</td>
</tr>
<tr>
<td>27%</td>
<td>29%</td>
</tr>
<tr>
<td>Travel services</td>
<td>Travel services</td>
</tr>
<tr>
<td>26%</td>
<td>34%</td>
</tr>
<tr>
<td>Financial services</td>
<td>Financial services</td>
</tr>
<tr>
<td>22%</td>
<td>18%</td>
</tr>
</tbody>
</table>

Total exports of services
US$136 billion
US$104 billion

Figure 8: Balance of trade in services compiled using the old and new statistical standards
37. As the implementation of the new statistical standards alone involves only the re-classification of components of trade in goods and services, the overall balance of trade of goods and services of Hong Kong remains unchanged, though the balance of trade in goods and the balance of trade in services both record significant changes individually as described above. This implies that the levels and growth rates of overall GDP and the overall current account balance under BoP are not affected by the implementation of the new statistical standards.

38. As for the estimation of volume measures of various components of trade in goods and trade in services under the new statistical standards, particularly processing fees paid to non-resident processing units and material inputs bought by non-resident processing units, reference is made to the Mainland’s producer price indices of manufactured goods, broken down into raw material costs and processing fees.

F. Latest development

39. In recent years, there have been several structural changes regarding outward processing in the Mainland. Firstly, there is upgrading and restructuring of enterprises engaged in processing trade in the Mainland, shifting from lower value-added processes to higher value-added processes involving innovation, design, branding and marketing. Manufacturers have also increased their research and development (R&D) capabilities. Secondly, as the logistics and distribution network in the Mainland becomes increasingly mature, many manufacturing enterprises realign their supply chain and actively increase sourcing activities in the Mainland, instead of importing input materials from overseas. Thirdly, in line with global sourcing, there is more sourcing from places other than the Mainland, e.g. Vietnam, Cambodia and Bangladesh.
40. These developments have meant that as compilers of statistics based on the change of ownership principle, we need to enhance the statistical system regularly to ensure that statistics continue to be relevant to policy formulators, analysts and the industry.

41. Another recent development is Factoryless Goods Production (FGP). An enterprise owns the underlying intellectual property products and controls the outcome of the production process; but the full transformation process, including the acquisition of material inputs, is outsourced to a contractor in another economy, resulting in the principal being factoryless. We note that respondent burden would be a major implementation issue in classifying and recording FGP, particularly when detailed data on individual transactions involving overseas set-ups are required.

42. While Hong Kong has implemented the change of ownership principle in compiling trade in goods and services statistics, we are conscious of ongoing structural changes in the Mainland as well as in the broader external environment. We will closely monitor latest developments in developing Hong Kong’s GDP and BoP compilation frameworks.
IV. References


