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**Impact on BOP Data of Changes in International Standards
for Processing and Merchanting**

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IMPACT ON BOP DATA OF CHANGES IN INTERNATIONAL STANDARDS FOR PROCESSING AND MERCHANTING

In general, the changes made for *BPM6* tend to involve clarification, elaboration, and level of detail, rather than major adjustments to the balance of payments framework. As a result, the impact on aggregates and balancing items is expected to be limited. But the changes to processing and merchanting are exceptions, and may have significant effects on the meaning of some components for a number of economies. Both changes involve the shifting their classification between goods and services, and have the common motivation of the applying the change of ownership basis comprehensively, without the imputations or exceptions previously made. However, the effect of the shift does not always exactly cancel for processing for reasons explained below.

There is a clear line between goods under processing and goods under merchanting, based on whether the goods stay in the same form. (The same form may be suggested by an unchanged Harmonised System code.) Under global manufacturing arrangements, some goods may undergo processing without being in the physical possession of the owner at any stage. In these cases, the processing treatment generally applies. However, merchanting would arise if a company buys goods manufactured to order (but with the processor originally owning the goods) and resells them without ever taking possession. (While the requirement for goods to be in the same condition for merchanting is more explicit in *BPM6*, it is implied in *BPM5*.)

This note describes the changes and examines their possible effects on the numbers. It does not discuss data collection design issues (which are dealt with in other papers at this meeting).

See also:

Implementing the New Statistical Standards for Goods for Processing and Merchanting in Hong Kong, China (BOPCOM-08/12) and the Treatment of Goods Sent Abroad for Processing in the Context of the Input-Output Framework: Work in Progress: Report by Canada (BOPCOM 08/13)

Hong Kong Census and Statistics Department, *Strategy for Implementing Recommendations on Goods for Processing and Merchanting in BPM6* (BOPCOM-07/20)

A. PROCESSING

(1) Treatment in *BPM6* and previous editions

BPM4 (paragraph 222): A change of ownership basis was used for goods undergoing processing, with no imputed change in ownership. The treatment was inconsistent with the

System of National Accounts (SNA) as it stood at that time. This treatment was consistent with data available from an ITRS, but inconsistent with customs data.

BPM5 (paragraphs 197-199): A change of ownership was imputed for goods undergoing processing by an entity other than the owner when the goods were sent from and returned to the economy of the owner. The previous treatment was maintained for arrangements other than where the goods were sent from and returned to the economy of the owner, such as when the goods were sold to a resident of the processing economy or a third economy. The treatment was introduced to improve consistency with the *1993 SNA*. However, complete consistency with the *SNA* was not achieved, because the *SNA* regards minor processing as a service, and does not impute a change in ownership of goods undergoing minor processing services. The recommendation in *BPM5* to impute a change in ownership for all goods being processed was made for practical reasons; that is, it is difficult for balance of payments compilers to distinguish between major and minor processing services, and most international processing involves substantial physical change.

BPM6 (paragraphs 10.62-10.71, July 2008 draft): A change of ownership to the processor is not imputed, so the *BPM5* exception to the change of ownership principle for processing is eliminated, and the *BPM4* treatment is restored. The *BPM6* and *2008 SNA* treatments are both being revised in the same way and at the same time, so the inconsistencies that occurred with *BPM4* and *BPM5* are avoided.

(2) Currently published data

The number of economies reporting goods for processing—entitled “manufacturing services on inputs owned by others” in *BPM6*—to the Fund has increased only slightly in recent years, while the values have tended to grow strongly. There were 61 economies reporting goods for processing data to the Fund for 2006 for inclusion in *Balance of Payments Statistics Yearbook* and *International Financial Statistics*, of which:

- 24 had both inward and outward processing;
- 23 had inward processing only;
- 2 had outward processing only;
- 12 did not identify whether the processing was inward or outward (i.e., both goods being returned after processing and goods received for processing are supplied in combined form only).

The total value reported by these 61 economies was around US\$ 850 billion (credits) and US\$600 billion (debits). P.R. China (Mainland) represented around half of these figures, with Mexico second-largest with around US\$100 billion. However, some of the largest economies (including the United States and the United Kingdom) and some considered to be important processing source and destination economies (including Hong Kong and Singapore) do not report values of goods for processing for IMF publications.

In global aggregates, the value of processing during 2000-2007 has been around 20-40 percent of the finished goods values.¹ The values for many individual economies vary, but most also fall within a moderate range. However, there are some cases of extreme ratios. The anomalies include credits without corresponding debits, after-processing values less (or only marginally higher) than before-processing values, and after-processing values many times higher than before-processing values. As these values become more important, more review may be desirable.

Estimation methods for processing based on ratios are likely to be used in many economies. The variations in ratios have implications that should be considered by compilers in these economies. The best methods take into account the type of commodities processed, and capture any variations caused by changes over time in the composition of items being processed. This may occur, for example, if processors tend to “move up the value chain” by performing increasing amounts of processing services.

(3) Effect of new treatment on data

The effect of the changed treatment will be to reduce the gross values of exports and imports of goods for all countries with inward or outward processing. In addition, there will be an increase in exports of services (processing economies) and imports of services (economies of customers of processors). The balance on goods and services combined, and on the current account balance, will not necessarily be similar or the same (see below to see why this may occur in the case of processing).

Partner data presentations will also be substantially changed for the economies with large values of inward and/or outward processing as a result. The goods trade between the processing economies and the economies of the goods owners will be reduced for both exports and imports, which will change the level and possibly bilateral balances and mix of trading partners.

Because involvement in processing tends to be particularly concentrated in a number of specialized economies, it is expected that there will be an effect on international trade rankings for individual economies for goods, services, and combined goods and services, when economies adopt the new standard.

An interesting illustration of the role of processing in a globalized production process was cited in *The Economist* (March 1, 2008, p. 56). According to the article, an iPod with a \$299

¹ The ratio for outward processing is derived from the values of goods sent for processing abroad and goods returned after processing abroad, while the ratio for inward processing is derived from the values of goods received for processing in the compiling economy and goods returned after processing in the compiling economy.

retail price is labeled as “Made in China” but “only \$4 stays in China with the firms that assemble the devices.” The article also notes that “\$160 goes to American companies that design, transport, and retail iPods.”

Estimates of the impact of the change in standards are shown below. To make these estimates, it is assumed that processing services can be measured from the difference between debits and credits of goods for processing, obtained from published country merchandise trade data. These estimates are provided to illustrate the possible impact of the change in treatment.

(a) P.R. China

The estimates suggest that the value of gross flows of goods are likely to be significantly reduced by the change in treatment. The importance of services is increased. It could be potentially significant in public perceptions that China could go from a big goods trade surplus to slight positive balance. Conversely, the services balance could go from slightly negative to strongly positive. Processing services represent around 40 percent of the finished price.

US\$ billions, 2007	<i>BPM5</i>	Adjustment	<i>BPM6</i>
Exports of goods	1220	-618	602
Imports of goods	905	-352	553
Goods trade balance	315	-266	49
Exports of services	122	266	388
Imports of services	130		130
Services balance	-8	266	258
Balance on goods and services	307		307
Current account balance	372		372

- To make estimates, it is assumed that no Chinese goods are sent abroad for processing. (The Chinese data do not distinguish values of Chinese goods sent for processing abroad.)
- It is understood that the values of goods for processing reported by China includes goods for processing both with and without a change of ownership, so these data overstate the impact of the change.

(b) Germany

The estimates suggest that the values of goods processed by/for Germany are smaller than China, and the change in the balances is not likely to be so significant. However, the data are interesting because Germany is both an inward and outward processor. The US\$64 billion removed from exports of goods consists of:

- \$16 billion of goods sent for processing abroad; and
- \$47 billion of goods returned after processing in Germany;

while the \$53 billion removed from imports of goods consists of:

- \$26 billion of goods returned after processing abroad; and
- \$27 billion of goods received for processing in Germany.

These items are rearranged in services to give:

- \$20 billion of processing credits (\$47b - \$27b); and
- \$9 billion of processing debits (\$26b - \$16b, with some rounding effect).

The processing ratio appears to be around 40 percent of the finished price for both inward and outward processing.

US\$ billions, 2007	<i>BPM5</i>	Adjustment	<i>BPM6</i>
Exports of goods	1354	-64	1290
Imports of goods	1075	-53	1022
Goods trade balance	279	-11	268
Exports of services	217	20	237
Imports of services	259	9	268
Services balance	-42	11	-31
Balance on goods and services	237		237
Current account balance	253		253

(4) IMTS Issues

The international standards for goods trade are set out in *International Merchandise Trade Statistics: Concepts and Definitions* (IMTS) (UN ST/ESA/STAT/SER.M/52/Rev.2). These standards use the physical movement criterion, rather than change of ownership, so goods sent for processing or returned after processing are included in trade statistics. The United Nations Statistics Division has circulated a consultation paper on *The Revision of the Recommendations for International Merchandise Trade Statistics*² with a view to revising IMTS for 2010. The consultation paper raises questions on defining goods for processing and the possibility that the goods be separately identified.

It would be useful if goods sent for and returned after processing are separately identified, as is already done by many economies. Such data would support adjustments to a change of ownership basis and also help users to understand more about the nature and trends in this increasingly important way of organizing global production. It would also support

² Available at: <http://unstats.un.org/unsd/trade/EG-IMTS/Web%20documents/Consultation%20Paper.pdf>

understanding of the balance between fee processing and own-account manufacturing. The Task Force on International Merchandise Trade Statistics recently concluded a worldwide consultation on revising the *International Merchandise Trade Statistics (IMTS) Rev. 2* and the meeting was informed that 110 countries responded to the consultation. Among the issues on which they were asked to respond, a clear majority (62 percent) agreed with the consultation proposal that *IMTS Rev. 3* recommend that countries record separately, data on goods for processing in the merchandise trade statistics.

In some cases, there are duty concessions associated with processing which help support the identification of these types of goods movements. For example, when tariffs are not applied to goods that will later be re-exported in processed form, there is an incentive for both the receiving processor and the customs authorities to identify these goods movements separately. However, in some cases, the duty concessions may not benefit all cases of goods for processing, such as when there are no duty concession for processing arrangements or the movement is nondutiable in any case (because of a free trade treaty with the source economy or across-the-board free trade arrangements).

(5) Why the service charge may differ from the net values of the goods flows

It is worth noting the situations where the difference between the value of goods sent for processing and the value of goods returned after processing is not an exact measure of the value of processing services. Possible factors include:

- (a) Problems in assessing values of goods sent or returned. Since there is no actual sale or purchase, the value reported on customs forms is just a notional value, which often may not be accurate. For example, perhaps the final goods selling price is recorded in exports by the economy of the processor, when this amount actually is largely profit margin that accrues to the seller (owner) of the goods. Because goods for processing are frequently exempted from customs duties, the valuation of these goods may not be closely inspected. CIF-FOB issues may also complicate valuation.
- (b) Cross-period movements. The processing service ratio will be affected if goods are supplied in one period, but returned in another. Smoothing the ratio over a number of periods could minimize volatility caused by this effect.
- (c) Holding gains/losses. If the value of the goods rises or falls while undergoing processing, that change could appear to be part of the processing fee. For example, if oil before and after processing in trade statistics is valued at spot market prices, the change in the price of the oil between its arrival in the processing economy and its return will include the increase in value from processing, as well as any rise or fall in the underlying oil price due to market fluctuations.

- (d) Scrapping or destruction. If the goods are scrapped or destroyed while in the processing economy, they could be reported as having been imported by that economy, but never exported. This situation will cause an understatement of processing services. For example, obsolescence of a computer chip could cause stocks held at the processor to be written off by the owner.
- (e) Inclusion of overheads. The value of overheads, such as research, patents, finance, and marketing, are built in to the price of the finished good. If the finished good price is used as it leaves the processing economy, and so incorporates these aspects, they could be misattributed as contributions accruing to the processor, rather than the owner. As these intangible aspects of manufacturing have become more important in relation to materials and labor costs, this factor may be emerging as a more important issue.
- (f) Materials sourced by the owner from economy of processor or a third economy. If the owner purchases materials in the processing economy, those goods might not appear as goods sent for processing from the owners' economy, but might be incorporated in the value of goods after processing, so that the value will be wrongly attributed to the processor. The same problem might arise if the owner acquires the materials from a third economy. (*BPM5* excluded this case from the imputed change of ownership treatment, but this distinction may not always have been implemented in practice (paragraph 199).)
- (g) Finished goods sold by the owner to economy of processor or a third economy. If the owner sells finished goods to residents of the processing economy, those goods might not appear as goods returned after processing from the owners' economy, but the materials might be included in the value of goods before processing, so that the value attributed to the processor will be understated. The same problem might arise if the owner sells the finished goods to a third economy. (*BPM5* excluded these cases from the imputed change of ownership treatment (paragraph 199), but this distinction may not always have been implemented in practice.)

For compilers who use the merchandise trade values in developing estimates of processing services, the above factors may be considered as possible areas of concern. For compilers who decide to use data from enterprise surveys or an International Transactions Reporting System, the above factors may help explain differences from the values derived from merchandise trade. (Some economies that use surveys for current data may use merchandise trade data for estimating back data.)

B. MERCHANTING

(1) Treatment in *BPM6*

In *BPM6*, merchanting of goods is reclassified from services to goods. As well, the gross values of purchases and sales are to be shown (with purchases shown as a negative export). For details, see paragraphs 10.41-10.49 (July 2008 draft).

The net value of goods under merchanting for *BPM6* is almost the same as the value of merchanting services under *BPM5*. There is a minor difference for changes of inventories of goods under merchanting (under *BPM5* paragraph 213, purchases of goods under merchanting were included as merchandise imports, and resales were included as negative merchandise imports), but this treatment is not known to have been widely implemented. Changes in inventories will remain in goods under the new treatment, but will be included with other goods under merchanting, rather than unidentifiably combined with general merchandise. The revised treatment means more detail (purchases and sales, as well as the net) and a change from goods to services, but the same value in the combined goods and services account.

(2) Currently published data

Both the number of economies reporting merchanting and the values have tended to grow in recent years. Nevertheless, only 42 economies reported merchanting data to the Fund for 2006 for inclusion in *Balance of Payments Statistics Yearbook* and *International Financial Statistics*. The total value was about US\$ 40 billion in that year. Five economies (Belgium, Finland, Ireland, Sweden, and Switzerland) together represent about three quarters of the total. Some of the largest economies (including the United States, Japan, and the United Kingdom) and some considered likely to be important merchanting economies (including Netherlands, Hong Kong, and Singapore) did not report values to the IMF.

(3) Effect of new treatment on data

The value of merchanting will be moved from services to goods, but the net contribution of merchanting is unchanged. As a result, the goods and services balance is unchanged, with an improvement in the goods balance and equal and opposite deterioration in the services balance. (Since merchanting is only recorded for the merchanting economy, it is a credit only; the effect is based on assumption that the service is always positive.) The global balances on goods and on services will be more consistent, because the goods involved in merchanting will be in goods for both parties, instead of goods for the purchaser but services for the seller. There is expected to be no effect on the current account balance.

As noted, data on both goods acquired under merchanting and on goods sold under merchanting are standard components in *BPM6*. For economies that currently only collect net data, it will be necessary to obtain the corresponding purchases and sales. However, as the

net value could only be derived from the gross values, this would allow better checking and verification. In the case of an ITRS, the gross values would have been observed in any case, because these are the actual transactions. Ratios of gross flows to net could also be used to generate back data.

Finland

The estimates suggest that the value of exports of goods and the goods trade surplus increases. The values of exports of services would be reduced by the same amount, which increases the deficit in the services balance. Merchanting is relatively large for Finland, and so the effects on aggregates and rankings are significant.

US\$ billions, 2007	<i>BPM5</i>	Adjustment	<i>BPM6</i>
Exports of goods	90	8	98
Imports of goods	78		78
Goods trade balance	12	8	20
Exports of services	20	-8	12
Imports of services	22		22
Services balance	-2	-8	-10
Balance on goods and services	10		10
Current account balance	10		10

(4) Related issue—merchanting of services

The Central Statistical Office of Ireland has identified a substantial and growing value of “merchanting of services” by Irish residents. That is, lead contractors in Ireland subcontract out service work to providers in other countries. It is likely that globalization and the growth of outsourcing will mean that this phenomenon will become larger and more widespread.

The issue is addressed in draft *BPM6* paragraph 10.159 (July 2008 version):

10.159 Business and other services, such as transport, construction, computing may be subcontracted. This arrangement may also be called “outsourcing.” For example, a specialist service arranger may be paid to provide back-office functions for a customer, which the service arranger subcontracts to another contractor. Thus, subcontracting is similar in some ways to merchanting of goods, as the services are purchased and resold. However, for services, the degree of transformation involved may be harder to assess than for goods, for example, in the case of bundling and managing the services of different contractors. “Service merchanting” of this kind is an important activity in some economies. The value of services exported and imported in the economy of the service arranger are recorded on a gross basis. (This treatment is applicable because the arranger buys and sells the services; if the arranger acted as an agent on a commission basis, then only the commission would be recorded as the service provided by the arranger.) See also paragraph 10.75 for transport. However, if the activity is significant for an economy, net data could be provided on a supplementary basis.

An analogy with goods might suggest that purchases of services for subcontracting arrangements might be shown as negative exports. However, the requirement for merchanting of goods that the goods be in the same condition is not so readily applicable to services. For example, a service may be repackaged or combined with other services, and the line between merchanting of services and other cases where service work is outsourced could be difficult to draw. It would also raise the question of whether the merchanting of services would be classified by type of service or regarded as a service in its own right.

C. CONCLUSIONS

(1) The new treatments will draw more attention from both compilers and users to these two types of commercial arrangements that are becoming more significant with globalization.

(2) The effect on data for some economies is significant, so there will need to be good communication with data users about the changes and the additional inconsistency with published merchandise trade data. In particular, it will be important to:

- (a) emphasize that users should not look at goods trade in isolation from services and broader aggregates;
- (b) provide IMTS-balance of payments reconciliation tables (as in draft *BPM6* Table 10.2).

(3) While ratio methods based on IMTS may be adopted in some countries, more detailed calculation (by commodity and country) for processing would improve the quality of the estimates. It should be recognized that ratio methods may be subject to error. In particular, it may be desirable to investigate whether there is a problem of misattribution of profit margins or overheads for processing.

(4) The effect of the change in treatment of merchanting will be minor, involving collecting some additional data on gross flows and a presentational change.

Questions for the Committee

(1) Can Committee members report on any work in their own agency on the implications of the new treatments?

(2) The changes in treatment for goods for processing and for merchanting are among the most significant changes in *BPM6*. Many data users may not be very aware of the impact of these changes on the data. What are the views of Committee members on communication with data users about these issues?