BOPCOM—12/30

Twenty-Fifth Meeting of the
IMF Committee on Balance of Payments Statistics
Washington, D.C.
January 14–16, 2013
(Rescheduled from October 29–31, 2012)

FOB/CIF Issue in Merchandise Trade/Transport of Goods in *BPM6* and the *2008 SNA*

Prepared by
Anne Harrison

Introduction by STA's Balance of Payments Division

At the end of 2011, Anne Harrison, Editor of the *2008 System of National Accounts* (*2008 SNA*) kindly offered to prepare a document for the Committee on differences between the *2008 SNA* and the sixth edition of the *Balance of Payments and International Investment Position Manual* (*BPM6)* in regard to the measurement of international trade in goods.

In particular, with few exceptions, cross-border trade in goods should be recorded in the balance of payments accounts on a FOB basis. According to *BPM6*: "The principle for valuation of general merchandise is the market value of goods at the point of uniform valuation. The point of uniform valuation is at the customs frontier of the economy from which the goods are first exported, that is, free on board (FOB)…" (*BPM6* paragraph 10.30). In contrast, according to the *2008 SNA*, cross-border trade in goods should be recorded at amounts specified between the buyers and sellers: "…the question of whether the value of goods covers the cost of transportation or not depends on whether the exporter or importer is responsible for transport…" (*2008 SNA* paragraph 14.68).

The guidance on how to measure international transactions in goods therefore differs between the national and international economic accounts. Within the national economic accounts, a variety of different bases are acceptable, depending on agreements reached between individual buyers and sellers, whereas in the international economic accounts, a uniform valuation basis (i.e., FOB) is recommended.

Given that the treatment in the balance of payments is long established (see *BPM2*, page 3) STA considers that the above issue mainly relates to how trade should be measured in the national economic accounts and, therefore, it has brought this matter to the attention of the national account statisticians, including at the October 2012 meeting of the OECD Working Party on National Accounts. STA does not favor introducing any changes to *BPM6* to address this apparent inconsistency.

Anne Harrison raises four questions at the end of her paper for the Committee's consideration.

Transport of Goods in *BPM6* and the *2008 SNA*

Anne Harrison

Editor of the *2008 SNA*

Introduction

During the drafting of BPM6 and the 2008 SNA, a lot of effort was spent trying to ensure that the two manuals were strictly consistent. This was achieved by taking each change proposed for one manual and considering the implications for the other. So far, no unexpected differences have emerged arising from changes made to those manuals compared with the previous versions of each. However, a discrepancy has emerged arising from a change made to the SNA in the course of the 1993 revision which was not incorporated in either BPM5 or BPM6. It concerns the way in which the cost of transporting goods from the supplier to the purchaser is recorded. (Throughout this note, for the sake of simplicity, the term "transport" should be taken to include the cost of insurance associated with movement of the goods also.)

BPM6 recommendations

Imports and exports of goods occur when there is a change of ownership of items recognised as goods between a resident and non-resident unit. The time of recording of the transaction is when the change of ownership is recognised (BPM6 paragraph 3.44). However, BPM6 states that this may be difficult to implement for merchandise trade statistics where customs data must be used and by convention the time when the records are lodged may be used (paragraph 3.45) though ideal adjustments are discussed in paragraphs 3.61- 3.66.

The costs of moving goods from the customs border of one economy to the customs border of another are always shown as an import of a service from the economy from which the goods are exported to the economy to which the goods are imported, regardless of the residence of the unit providing the transport. In addition, in some circumstances the costs of moving goods from the exporter's premises to the customs border of the exporter and from the customs border of the importer to the importer's premises may also be recorded as imports and exports of services. Box 10.3 gives three numeric examples for how freight on imports is to be recorded including these alternative responsibilities for transport[1]. The transport costs are always recorded as imports of services associated with, but distinct from, the FOB value of the goods themselves.

These recommendations on the time of recording, change of ownership and the valuation to be ascribed to imports and exports of goods are determined by pragmatic considerations, given that the source of information in most cases is customs documentation although this is administrative data associated with the levying of import and export duties and not necessarily ideal in all respects for statistical purposes

[1] BPM6 box 10.3 is attached to this note for ease of reference.

In most cases in the BPM, and in particular for transactions in financial assets and liabilities, valuation is based on transaction prices. In some cases this applies to certain classes of goods also. A recent recommendation of BOPCOM concerned the case where goods (specifically metal ore if my memory serves) were exported before their value was known but a contract specified a price that would be determined at some point in future. BOPCOM agreed the valuation to be used should be the transaction price and that this was the price specified in the contract and neither the market price prevailing at the time of export nor the market price at the time specified in the contract if different from the contract price. Transaction price is also specified for non-monetary gold and merchanted goods. For most goods, however, transaction price is not used because of the desire to have a standard basis of valuation (paragraph 10.31) and on the assumption that customs declarations are the source that has to be used.

Problem cases

BPM6 recognises that the arrangements for whether the supplier or purchaser is responsible for transport costs may vary with one or the other wholly responsible or the costs being divided between the two. If the purchaser is responsible for transport costs and effects these using a unit co-resident with the purchaser, the CIF value of the goods will include a domestic component. BPM6 recommends rerouting this as a "pseudo- export" of services from the purchaser to the supplier to counter-balance the increase in the CIF value. In example 2 of box 10.3, a domestic transaction of 200 for economy B is treated as first an export of services of 200 from economy B to economy A and then an import of the CIF to FOB adjustment, or freight services, from A to B[2].

While box 10.3 is very helpful, there are a number of issues not addressed. One of these is how freight is recorded if the goods are imported by means of a cross-trade, that is a resident of economy C moves the goods from A to B. In fact, in the imputation of exports of services, subsequently re-imported, just described, there is no strictly logical necessity to ascribe these services to the economy exporting the goods; the imputation and the impact of global freight credits and debits would be unaffected by attribution to any economy other than the importing one.

Not all freight credits and debits are associated with the movement of imports and exports. When goods not changing ownership move from one economy to another they incur freight charges. Examples include migrants effects and also empty containers, a point that will recur below. It is therefore not the case that the whole of freight debits matches the cif to fob adjustment, though this is likely to account for a great deal of the flow. Note also that while BOP compilers in economy X may impute exports and imports of freight to economy Y, the BOP compilers in economy Y may be quite unaware of this, so the counterpart entries for freight will not match, even though the operation to make counterpart imports and exports match may be successful.

A special case of goods not changing ownership concerns the transport of goods for processing (which under new recommendations will not appear at all in imports). They do however need moving round the world, and therefore freight services must be provided

[2] The designations A and B should be interpreted as economy A and economy B or a unit resident in economy A or a unit resident in economy B as appropriate.

and paid for. No guidance on how to estimate these is currently given in either BPM6 or the draft of the Compilation Guide. There is a reference to goods for processing in BPM6 paragraph 10.78 but this is not elaborated. Given that the items may appear in customs documents but then be removed for BOP purposes, it seems likely that compilers, at least initially, will suppose that the freight on them should be attributed to the country from which they are consigned. However, a more rigorous consideration suggests that the freight outward and inward or onward) may be paid either by the owner of the goods (who may not be in the same economy where the goods are despatched) or the processor, or even by the eventual purchaser, according to the terms of the contract.

The case for merchanted goods is even more problematical (and note that goods intended for processing may be subject to merchanting before or after processing). BPM6 does discuss how merchanted goods are to be recorded at some length in paragraphs 10.41 to 10.49 with a helpful box 10.1 giving some examples. Paragraph 10.32 and 10.44(d) state clearly that for the economy doing the merchanting the goods concerned (recorded as first negative exports and then positive exports) should be valued at transaction prices. However, the paragraphs also state that for the counterpart economies, the items are recorded as normal as exports and imports. Presumably this means exports fob and imports initially cif then adjusted to fob. This means that counterpart values for the goods as they enter and leave economies will not necessarily match. The question of how the merchanting item and the associated freight should be identified is not addressed. If in fact the merchanter is also a transporter, there is a question about whether it is both necessary and feasible to make the distinction.

2008 SNA recommendations

Through several editions of the BPM and SNA, there has been agreement on how international trade in goods is treated. Imports and exports are recorded when there is a transaction in goods between a resident and a non-resident unit. The point at which the transaction is recorded is when there is a change of ownership and for international trade this is recommended as being at the customs border of the of the exporter. (This is restated in the 2008 SNA paragraph 3.149).

However, this guidance is not sufficient for transportation associated with the acquisition of goods within the same economy. For domestic transactions in goods, there is no exact equivalent to the customs border nor any data source equivalent to customs documentation. For domestic transactions, also, transport to and from the customs border is indistinguishable from transport between any two points within the economy. As in the BOP, the price paid by the supplier of a good (in SNA terms the basic price) and the price paid by the purchaser (the purchaser's price) is not necessarily the same. The purchaser's price may exceed the basic price not just by transport and insurance costs but also taxes levied on the good and margins received by wholesalers and retailers.

If GDP is calculated only from the production side, values for imports and exports are taken from the BOP and agree exactly. However, it is agreed that a superior estimate of GDP can be made within a framework where supply (which includes imports) and use (which includes exports) are balanced for products at a disaggregated level. This means

that clarity is need on when transport is to be regarded as a separate product and when transport costs are treated as integrated with the value of the good.

Prior to the 1993 SNA, the cost of transporting goods from supplier to purchaser was always separately identified and formed part of the difference between the basic price and purchaser's price. During the 1993 revision of the SNA, it was argued forcibly that this was virtually impossible to implement to an acceptable degree of accuracy and the economic basis of the separation was also questionable. Instead, it was proposed that if the price agreed between the supplier and the purchaser included the cost of delivery to a place of the purchaser's choice, this should be taken to be the basic price. In other words, the transport costs were integrated into the value of the goods being supplied. Only if the purchaser paid an explicit cost for delivery, whether this was to the supplier or to a third party, was the purchaser's price different by the amount of this margin and the margin was to be treated not as an integral part of the good but a separate service element. The rationale for this decision is that until a change of ownership takes place, the nature of the goods may change but not afterwards. It is summarised in SNA paragraph 14.60 of the 2008 SNA, describing the delivery of an item from a supplier, A, to a purchaser, B, as follows

> 14.60 The rationale behind these different recordings is that the point when change of ownership occurs is different under the different scenarios. If A agrees or is obliged to provide transport to B, even for a charge, then change of ownership takes place when the product is delivered to B's factory. If B agrees or is obliged to arrange delivery itself, then change of ownership takes place when the product leaves A's factory.

It should be noted that, in effect, the BPM adopts a similar position on transport from A's premises to the border of economy A where the change of ownership is deemed to take place; any transport cost is incorporated into the fob value of the goods and is not broken out as a separate service.

In chapter 14, the 2008 SNA discusses at length how transport charges are to be recorded, both for domestic production and for imports. The text describing how imports are to be valued at basic prices appears in paragraph 14.77, attached. Unlike the BPM, the SNA does discuss transport on goods sent abroad for processing, merchanted goods and goods not changing ownership. These appear in paragraphs 14.69 to 14.72, attached. The recommendations there assume that transportation is recorded as a service only when this is separately invoiced and is treated as an import or export as appropriate only when a non-resident unit is involved. Table 14.3A elaborates different cases of how and when freight on goods entering the economy is to be recorded. Though the case of imports is used as the example, the logic holds for all goods entering the economy whether or not there is a change of ownership. This table is based on table 14.3 of the SNA which deals with the transition from basic price to purchaser's price involving taxes also. It can be seen that three questions need to be answered to determine how flows are to be recorded:

1. Where is the unit providing the transport services resident?

2. Where is the unit requesting the transport service resident?

3. Is the provider of the goods being transported charging the purchaser explicitly for transport?

The recording suggested in table 14.3A still maintains the same figure for imports of goods and services in total in the SNA as in the BOP. If all goods fell into the 2a, 2b and 2c categories, the two systems would be identical for goods and services separately also. Because the SNA allows for the other cases, the figure for goods will be slightly higher and that for services lower by the same amount. This difference is irritating but perhaps can be seen as a matter of presentation since the total of goods and services in unchanged between the two systems.

However, in response to pressure from some national accountants, the SNA includes another alternative in paragraph 28.12. This option suggests that in case 2c of table 14.3A, when transport is provided by a unit in the same economy as the importer, this should be treated as a domestic transaction and no re-routing of freight via the rest of the world is necessary. In this case the cif value of imports will be 200 not 220 and no freight service will be recorded, either as exports by B nor by A. The overall effect is that the figures for imports and exports in the SNA will diverge from BPM guidance though the current account balance will be identical. The SNA does point out in paragraph 28.12 that this option is inconsistent with BPM6 but it has been incorporated into the Eurostat manual on supply and use tables and input-output tables.

Recovering strict consistency between BPM6 and the 2008 SNA

There are four possible ways to bring the SNA and BPM back into strict consistency.

1. The SNA could change its recommendation on the treatment of domestic transportation back to what it was before the 1993 edition, that is to always treat it as a service and never integrated with the value of the good. Given that the new system has been in place for more than a decade, it is unlikely that SNA compilers would be enthusiastic about this. Further, ESA95 is based on the 1993 SNA and has the force of law within Europe. EU countries could not change back without a change to the appropriate legislation. This option therefore hardly seems worth pursuing. While moving away from the option discussed in chapter 28 would not require a change in legislation, it would run counter to practice common in a number of countries.

2. The SNA recommendation could, if necessary, be changed to be strictly consistent with BPM6 when transactions with non-residents were concerned. This would require some clarification of BPM6 first on items such as goods for processing and merchanted goods. However, it would introduce consistency between the SNA and BPM at the price of inconsistency of treatment within the SNA on domestic transactions in goods as compared with international transactions in goods and a move away from transactions prices as the general basis for valuation in an important set of instances. This too would be likely to meet with considerable opposition from national accountants.

3. The SNA and BPM could stay as they are but with the inconsistencies are explained by a supplementary table showing how imports cif are converted to imports fob by showing how much of the difference is a rerouting and how much is a reclassification from goods to services. The extra clarification on goods for processing and merchanted goods would still be necessary as input to this calculation.

4. The last option would be to consider amending the BPM guidelines. It would be possible to say that the recordings suggested in table 14.3A are conceptually correct, but because of the difficulties of answering the three question listed above in description of that table, by convention, all imports of goods are treated as falling into one of the 2a, 2b or 2c classes. However, there are two possible reasons to explore whether this convention should continue to be applied universally The first of these has to do with the global imbalances reported in BOPSY. The second is a consideration about how the nature and cost of transporting goods has changed with the advent of containerisation.

The BOPSY data on freight

Table 1 attached shows some of the aggregates appearing in the July 2012 version of the IMF BOP database. The data shown cover the period 1994 to 2010. Overall the proportion of freight debits to imports fob average about four per cent a year, about three per cent for advanced economies and twice this for emerging and developing economies. The fact that for many countries these proportions hardly alter over the 17 year period might suggest that the cif to fob adjustment is based on long established proportions whose basis may be uncertain and that are now out of date.

An average of three percent of imports for freight may not seem exceptionally high, but the ratio of recorded freight debits to freight credits average about 140 per cent a year over the 17 year period. The 40 per cent excess represents about one per cent of imports fob. If, as might be possible, the deduction from cif values of imports was about one per cent too high, this would bring the freight figures more or less into balance and would reduce the excess of recorded exports over imports from one to two per cent in many years to one per cent or less. The fact that such results would be plausible does not of course mean they are correct but does suggest that if there is reason to examine the basis of calculating freight on imports, this might be worth doing.

"The box that changed the world[3]"

In the past, the paradigm was that goods were taken by land transport to a sea port, there they were loaded by hand onto a ship, taking time and involving many workers. When the ship reached the importing country this process was reversed. The notion of separating the costs of transport into three elements corresponded to actual processes. This paradigm is now historical. Most[4] goods are loaded into a container at A's place of business and remain in it until they are unloaded at B's desired location. A single cost is given for the whole journey and partitioning in three becomes problematical. The loading and unloading of a container onto a ship is highly automated, involving few workers and little time. Donavan estimates that instead of a ship spending up to half its time in port loading and unloading

[3] Arthur Donovan & Joseph Bonney (2006). *The Box that changed the world: Fifty years of Container Shipping - an illustrated history*. Commonwealth Business Media. ISBN 978-1-891131-95-0. Other books covering the same issues are Brian J. Cudahy (April 2006). *Box Boats*. Fordham University Press. ISBN 0-8232-2568-2 and Frank Broeze (2002). *The Globalisation of the Oceans*. International Maritime Economic History Association. ISBN 0-9730073-3-8.

[4] It is estimated that in 2009, 90 per cent of international trade other than bulk cargo (in items such as petroleum, coal, iron ore and grain) was moved by containers on transport ships. Ebeling, C. E. "*Evolution of a Box*". Invention and Technology 23 (4): 8–9. ISSN 8756-7296

cargo, a container ship now spends only about ten per cent of its time in port. The economies of scale of containerisation can hardly be exaggerated. A documentary on the BBC recently included the remarkable assertion that it now costs more to deliver a TV set from a store in the UK to the customer's home than to get it from a factory in Korea to the store. Nor it is not just the practicalities of loading and unloading ships or the ease of handling standard size containers that reduces the freight cost. The fact that containers are sealed as soon as loading completed means that insurance costs are very dramatically reduced also[5].

Extravagant claims have been made for the effects of containerisation on the costs of moving goods around the world. Some claim that containerisation has been in part responsible for the growth in the globalisation of production[6]. If the reduction in costs is as great as is claimed, the process of adjusting cif to fob valuation might well bear re-examination. Further weight is given to this suggestion by an examination of the ratio of freight debits to the fob value of imports. In some countries it appears that a (possibly arbitrary) constant proportion is simply applied. For India, for example, the proportion is almost exactly ten per cent for each year.

Pursuing data on the cif to fob conversion

Containerisation affects not only the costs of transporting goods but the data available about the process. The standard reference unit for a container is neither value nor weight but a TEU, the volume of a twenty foot equivalent unit. The pay load of one TEU is 20 tonnes; ships can carry 10,000 TEUs or more and larger ones are planned. The disadvantage to data compilers is that it is impossible to tell from the outside what a container holds and what its value is though customs still conduct checks to verify the information provided. Set against this is the very considerable advantage that the containers themselves are valuable and their movements extremely well documented electronically. Each container has an identifier that is globally unique. The information necessary to process containers through ports in a matter of hours rather than days is highly computerised and documents who owns the container, who has leased it, where it has come from and where it is going to as well as information on the nature and value of the contents. This information, therefore, answers the three questions needed for a more elaborated treatment of freight. Much information is now published in the annual Containerisation International Yearbook[7]. The World Bank quotes port container traffic in the WDI. Table 2 shows the figures for several large trading economies along with figures for imports and exports, freight credits and debits. This table is indicative rather than definitive. There is no necessary match between the countries where the port traffic takes place and the country of residence of the transporters; container movements include

[5] The same BBC documentary said the compelling example for the use of containers in the UK was the fact that a container of whisky was delivered from Glasgow to New York without loss whereas previously "accidental" breakages of up to 30 per cent of the load were usual.

[6] Marc Levinson (2006*). The Box: How the Shipping Container Made the World Smaller and the World Economy Bigger*. Princeton University Press. ISBN 0-691-12324-1.

[7] A description of the contents of the book say "The directory includes contact details on 5,300 companies; specifications of 9,573 container carrying vessels; lists of 600 ports and 760 container terminals worldwide; service and fleet details of 432 liner operators; and, much, much more. Eventually, and sensibly, the publisher will transfer all this data to the web and update it daily. That will make it better for everyone including themselves and, especially, the world's forests

movements of empty containers as well as full ones, for example. The table would be improved by removing items moved as bulk cargo from total imports. Nevertheless, it would seem that a closer examination of the information available on container movements might be fruitful[8].

It would also seem desirable to clarify with customs officials exactly what they are now recording as fob and cif values in respect of goods moved by containers. Is the customs border now not necessarily the physical border of the country but rather the point where the container is sealed or opened? How exactly do they treat the costs of moving the container (if indeed such information is given to them) in calculating values that are recorded as fob and cif in relation to an economy's borders? If they are faced with transaction prices, and no duties are payable, do they really go to the trouble of making these adjustments?

As long as information on merchandise trade was dependent on customs data where border prices were the basis for duties, it is understandable that macro-economic statisticians accepted this was the best data available, even if on a theoretical basis a true transaction price basis was preferable from an economic point of view. There does seem to be a strong case to review this issue, even apart from the desirability of restoring maximum consistency between the BPM6 and the 2008 SNA.

Suggestion for BOPCOM

1. Should the compilation guide address the methods for estimating freight on goods not recorded by customs, goods for processing and merchanted goods? If the BPM recommendation differ from those currently included in the 2008 SNA, this matter should be discussed with the ISWGNA.

2. Would an examination of information now available on movement of goods by containers and the use of this made by customs officials be helpful in formulating recommendations on how to make the adjustments to recorded valuations of merchandise imports from a cif to fob basis and even whether to maintain cif and fob valuations of merchandise trade in preference to transaction prices?

3. Would it be helpful to consult national accountants via the SNA on their experience of dealing with transportation (and insurance) margins on imported goods within a supply and use framework?

4. Until such results are available, should information on the process of adjusting imports cif to fob be made available to national accountants to enable them to explain any differences from data shown on a BPM6 basis?

8 The word "container" appears only twice in BPM6, once in a footnote to paragraph 10.34 and once in paragraph 10.156 on operating leasing. And only once in passing in the draft of chapter 12 of the draft compilation guide where the estimation of the cif to fob adjustment is described at some length