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Trade Index Numbers: Price survey and the Unit Value Approaches

Report by UNSD

Background

1. The UN Statistical Commission endorsed at its 2003 meeting the Task Force (TFIMTS) plans to develop a manual on import and export price indices, and welcomed the initiative of the International Monetary Fund (IMF) to develop that manual. In 2003, IMF presented an annotated outline of Exports and Imports Price Indices (XMPI) manual to TFIMTS, which welcomed it, but noted that its focus should be expanded to cover all types of trade indices and be linked to concepts and definitions approved by the UN Statistical Commission for use in international merchandise trade statistics. Also, while endorsing the survey-based approach to price data collection in international trade, TFIMTS stressed the importance of unit value indices based on administrative records (pointing out that this is often the only feasible alternative for developing countries lacking resources to conduct price surveys).

2. In 2004, TFIMTS was informed of the creation of a Technical Export Group (TEG) within the Inter-secretariat Working Group on Price Statistics (IWGPS), which would develop the XMPI manual under the leadership of IMF. The TEG established an electronic forum[1] to "elicit comments and to promote discussion on specific topics in the Export and Import Price Index Manual.". TFIMTS recommended the IMF to take into account the results reported in the UN publication "National Practices in Compilation of External Trade Index Numbers," and announced its intention to review the draft chapters in detail and prepare a position paper.

[1] See http://www.imf.org/external/np/sta/tegeipi/index.htm

3. In 2005, IMF reported progress on the XMPI manual and its plans to have substantial drafts and comments ready for the fall of 2005. TFIMTS was invited to forward comments on the draft using the TEG's website. UNSD agreed to forward a list of 20 representative national experts and IMF agreed to look into possibilities for funding an Expert meeting on trade index numbers.

4. In 2006, discussion at TFIMTS meeting centered on the survey approach in contrast to the unit value calculation. The different organizations reported their current practices as to the use of unit values and were invited to prepare short documents on their practices for the next meeting. TFIMTS took note that all chapters of the forthcoming XMPI handbook were available on the internet for comments.

Recent developments

5. In September 2006, IMF organized a seminar on the draft XMPI manual in Washington, D.C. WTO was invited to the IMF seminar as convener of TFIMTS but was not able to attend. UNSD was not invited to this meeting, but it submitted comments on the draft XMPI manual in a note sent to the IMF (see Annex 1).

6. WTO and especially UNSD have intensively exchanged views with IMF over the last 8 months, suggesting the need for a deeper discussion of the advantages and disadvantages of unit values versus price surveys. UNSD proposed an additional chapter in the XMPI manual devoted to merchandise trade statistics, differences to BOP/SNA-related definitions, as well as their consequences for compilation and interpretation.

7. In November 2006, the UNSD submitted a document with further comments on the XMPI manual to the TEG (see Annex 2). While acknowledging that the TEG work provides a strong theoretical basis for the calculation of export and import price indices using price surveys, it also expresses concerns about the current draft's general rejection of unit values as proxies for prices and unbalanced assessment of the customs data. UNSD suggested that the manual's introductory chapters be adjusted to reflect a more evenhanded view of unit value indices and price indices (as advocated in Chapter 5 of the draft).

8. In this connection UNSD stressed that nowadays most customs administrations and national statistical offices capture customs data electronically (for instance, making use of the ASYCUDA platform[2]), which renders customs records a more reliable and readily available data source for trade statisticians. UNSD takes the view that the statistical properties of unit values have to be assessed more carefully (e.g., variability, multimodality, and incidence of outliers). Also, UNSD maintains that that the relative advantages or disadvantages of direct price surveys versus unit values should be assessed not only from purely theoretical point of view, but taking into account availability, quality and costs of primary data as

[2] See http://www.asycuda.org

well as various institutional arrangements and other circumstances impacting on choice of strategy with respect to the external trade index numbers compilations.

9. In this context, the contention that unit value indices should not be recommended to any country under any circumstances seems to be not warranted. In the UNSD view, the task is to realistically assess applicability and complementarity of both approaches. Any draft recommendations on this matter should undergo a worldwide consultation with national statistical offices.

10. The XMPI manual, as drafted, does not represent a substitute for a comprehensive revision of the UN 1981 publication *Strategies for price and quantity measurement in external trade*. Such a revision should: (1) provide a review of technical issues (for which the XMPI manual is regarded as very useful), (2) be linked to the actually compiled external trade statistics based on *IMTS: Concepts and Definitions, Revision 2*, (3) contain an evaluation of institutional and administrative constraints faced by national trade statisticians and trade index numbers compilers, and (4) provide policy guidance on how to find an appropriate and balanced approach under different country circumstances.

What is next?

11. UNSD intends to conduct additional research and consultations with national statistical offices on the matter including studying the statistical characteristics of unit value data, such as uni-modality, variance and incidence of outliers, and use those characteristics in assessing the usefulness of unit values in price index calculation before taking a decision on further course of action with respect to a possible revision of its 1981 publication. UNSD will inform TFIMTS about results of this work at its next meeting.

Annex 1

Comments of UNSD on draft XMPI manual

Document sent to IMF on 22 September 2007

First of all, we acknowledge the tremendous effort which the Technical Expert Group led by IMF has invested in producing Price Index manuals for Consumer, Producer and External Trade. In the same breath, however, we regret that the Inter-agency Task Force on International Merchandise Trade Statistics (TFIMTS) was not more involved in the process of drafting the Export Import Price Index (XMPI) manual. The following remarks are very much in line with the letter sent by WTO as chair of TFIMTS to IMF on 12 August 2003. The fundamental issues raised in that letter still apply to the current version of the draft XMPI manual.

The CPI and PPI manuals were produced within the framework of SNA and BOP concepts and definitions. The Technical Expert Group took the same approach for XMPI[3], ignoring largely the concepts and definitions commonly used in international merchandise trade statistics. Goods transactions in SNA/BOP concept concern change of ownership of goods between resident and non-residents[4]. Detailed trade statistics are virtually never collected on a change of ownership or resident / non-resident principle. In merchandise trade statistics crossing-the-border is the fundamental principle for recording, mostly via customs declarations. Furthermore, the draft manual treats valuation only on a FOB basis (as recommended by SNA), whereas customs declarations record imports values on a CIF basis, as recommended in the WTO Agreement on Valuation. The point here is that calculations of XMPI is not the same as for CPI and PPI, unless a fairly narrow view of XMPI on SNA/BOP basis is taken which ignores the wide-spread use of customs records in XMPI calculations.

The 2003 UN report on *National Practices of Compilation and Dissemination of External Trade Index Numbers* shows that 74 out of 79 countries or areas – that responded to the questionnaire – use customs records as the main source for the calculation of export / import price indices. Furthermore, 64 out of 79 countries use unit value indices for XMPI, 6 countries use custom records exclusively to derive price indices, 11 countries do price surveys and only 5 countries out of 79 use exclusively price surveys to calculate price indices for XMPI.

The draft manual shows an *a priori* preference for price surveys over unit values without giving much empirical evidence[5] but only referring to the heterogeneity problem of unit values. However, the mentioned heterogeneity or composition problem of customs-based commodities also applies to products used in price surveys. Any product item in a price survey is a basket of maybe similar but not identical products (notably because of aspects of quality and "extra features"). In the annex to these general comments more specific passages of text from the draft manual are singled out for further illustration of the "unit value versus price" issue. In addition to the fact that items used in price surveys are subject to the composition problem, the manual rightly points out difficulties adherent to price surveys such as sampling problems of products and establishments. It would make the manual so much richer in content if at those places the pros and cons of unit values in comparison to prices would be discussed in detail. Throughout the

[3] "The CPI, PPI and XMPI for the large part have similar theoretical underpinnings and face similar practical problems in their compilation." (Reader's Guide, page 1)

[4] The preface stresses the approach by stating that "an export price index (EPI) measures the rate of change in the prices of goods and services sold to foreign buyers by resident of that country."

[5] "The approach of this manual to the collection of prices is the use of surveys of establishments, as opposed to unit values from customs authorities." (Reader's Guide, section A.2, page 2)

manual comparisons could have been made describing effects on prices and unit values. In fact, more empirical data should be taken into account to point out problems and offer solutions.

In extension of the previous paragraphs a fundamental criticism on the manual is the use of the term “merchandise trade statistics”. The draft manual is by and large an XMPI manual from SNA/BOP perspective. The principal use of calculated XMPI seems to be to deflate imports and exports of goods in the Rest of the World or Current Accounts. We would therefore advise not to use the term “merchandise trade statistics”, but using the term “BOP trade in goods”. If the intention of the manual is to cover also “merchandise trade statistics” in terms of the concepts and definitions as given in the UN manual of International Merchandise Trade Statistics, then the draft manual would need to be re-written in a number of places to do just to both the BOP and the merchandise trade perspectives.

Finally, it would make the manual better if it reduces its references to CPI or PPI because we believe that XMPI is of a different nature. Whereas the Terms of Reference of the Technical Expert Group imply that the new XMPI manual is a revision of UN Manual *Strategies for Price and Quantity measurement in External Trade*, Series M, no.69, 1981, the draft manual makes very little direct reference to the UN manual, except for a paragraph in the Preface (page 5). By contrast, the draft manual contains many paragraphs that come out of the CPI and PPI manuals. In a lot of cases, the chosen examples apply only to CPI or PPI and not as much to XMPI, which rather confuses than helps the reader. We prefer that the manual make more reference to the original UN Manual, in which Jacob Ryten very well balances use of unit values against use of prices. It could also borrow more from two other UN manuals in this field namely *Guidelines on Principles of a System of Price and Quantity Statistics*, Series M, no.59, 1977, which gives a concise and beautifully written overview of price indices; and *Price and Quantity Measurement in External Trade*, Series M, no.76, 1983, which gives a complete example of the use of price surveys by the German Statistical Office, and another detailed example of the use of unit values by Statistics Norway.

We hope that it is not too late in the process to take our advice on board, and we herewith offer our help to revise the draft manual if so requested. Specifically, we offer to draft some sections or a chapter (maybe in conjunction with chapters 3 and 4) on “XMPI in terms of merchandise trade statistics; differences in definitions between merchandise trade and SNA/ BOP and its consequences for interpretation and use of XMPI” and a chapter (in relation to chapters 5, 9 and 20) or supplement on “The advantages and disadvantages of using Unit Values, an empirical approach”.

Annex 1a: Unit Values versus Prices

Following the course of the Manual we would like to counter some assertions made with respect to the use of unit values:

1. "Unit value indices can be seriously biased by changes in the composition and quality of the items aggregated" (Preface, page 5). The same statement could be made with respect to prices.

2. "A case was made in United Nations (1981) for the careful handling of unit value data from customs authorities to narrow down the definitions of the commodities involved to such an extent as to provide workable definitions for separate unit value strata. Such refinements were to be based on analyses of the distributions of unit values (specifically with regard to multi-modal distributions) and/or breakdowns of transactions into separate strata of unit values by say "size" and country of origin/destination. There may well be cases where this is to the benefit of XMPI compilation, but these are considered to be exceptions and the survey price approach generally preferable." (Preface, page 5) The statement that "these are considered to be exception" should be based on empirical evidence. None is provided, however.

3. ***L.1.1 Administrative data: Customs unit values*** (Chapter 1, page 50). The content for this paragraph is still missing.

4. "As we will see in Chapter 4, detailed customs goods classes rarely contain only one product. Thus unit values will suffer from composition effects, wherein the product composition of the unit value for a given customs class varies from period to period. This can cause the unit value price relative from period to period to change even if the prices of the component products have not. Thus the unit value price index tends to be biased in unpredictable directions." (Chapter 2, paragraph 2.16, page 4). The same can still be argued in the case of products used for price surveys. More empirical studies should be done to show boundaries for those cases in which you could still use unit values, and for other cases in which you would definitely need to switch to prices.

5. "These unit values may or may not be a good source of price information. More often than not the elementary aggregates, which the customs information can define, contain multiple products about which customs data can say little. Consequently, supplementary surveys also may be needed in identifying and measuring the average transaction prices for the elementary items that make up the detailed customs aggregates of transactions." (Chapter 4, paragraph 4.17, page 6). Combination of unit values and price surveys seems indeed a reasonable alternative.

6. Paragraphs 20.91 to 20.111 (Chapter 20, pages 27-33). The discussion and tests of unit values is based on theoretical assumptions, not empirical evidence. All of the arguments would apply to prices as well if price categories are not homogeneous. What we would like to see, is robustness tests based on available data from national offices where unit values and prices are compared.

7. “In fact, for most Harmonized System classes of goods, even if subdivided by source (import) or destination (export) country, the answer to this question is no. A price must be associated with a given and complete description of the product encompassing the product and transaction characteristics that affect the exchange value or price.” (Chapter 5, paragraph 5.1, page 1). Again, it still needs to be proven for a given HS 10-digit code, if it is worse defined that any of the product descriptions used in the price survey.

8. “An HS unit value is a price if the variance of prices within an HS class is low at any given point in time.” (Chapter 5, paragraph 5.2, page 1). We would want to be even much more restrictive than indicated, adding uni-modality and sufficient number of data points to this. But the point is well taken that indeed statistical and empirical methods can be used to determine unit value characteristics.

9. Table 5.1 (Chapter 5, page 8). The total quantity at Period *t* is incorrectly added and should be 52. This leads to a composition error of about 2% instead of 8%.

10. “However, unit values may play an important part in the process of calculating an elementary price index, because they are the appropriate *average* prices that need to be entered into an elementary price index. Usually, prices are sampled at a particular time or period each month, and each price is assumed to be representative of the average price of that commodity in that period. In practice, this assumption may not hold. In this case, it is necessary to estimate the unit value for each commodity, even though this will inevitably be more costly. Thus, having specified the commodity to be priced , data should be collected on both the value of the total sales in a particular month and the total quantities sold in order to derive a unit value to be used as the price input into an elementary aggregate formula. It is particularly important to do this if the commodity is sold at a discount price for part of the period and at the “regular” price in the rest of the period. Under these conditions, neither the discount price nor the regular price is likely to be representative of the average price at which the commodity has been sold or the price change between periods. The unit value over the whole month should be used. With the possibility of collecting more and more data from electronic records, such procedures may be increasingly used. However, it should be stressed that the commodity specifications must remain constant through time. Changes in the commodity specifications could lead to unit value changes that reflect quantity, or quality, changes and should not be part of price changes.” (Chapter 9, paragraph 9.77, page 19). Again, the combination of unit values and price surveys seems the right way to go.

Annex 2

Further comments on XMPI Manual by UNSD

Document sent on 21 November 2006 to the TEG-ISWGP

The Manual works out a strong theoretical base for the calculation of Export and Import Price Indices using price surveys. We certainly acknowledge that the Manual is an important contribution to this area.

Our concerns are related to the summary rejection of use of unit values as proxies for prices as stated in the Reader's Guide, the Preface and Chapter 2, and the exceedingly negative and frequently unsubstantiated language used in the description of customs data. We recommend that the Manual changes wording throughout the manual to allow for use of unit values, expressing caution where appropriate as is done in Chapter 5. Because of all the practical problems and high costs in obtaining good quality XMPIs based on price surveys, it seems inevitable that unit values based on customs data remain a substantial source for the calculation of XMPIs.

We call for a more balanced approach which could include recognizing the value of several strategies and would allow countries to take their own decisions in this matter.

Summary of Comments

Unit Values

In the Reader's Guide, Preface and Chapter 2, the position of the Manual transpires that use of unit values should be avoided at all cost. However, Chapter 5 clearly advocates the usefulness of unit values and argues to add price surveys only in those instances when unit values have proven to be inappropriate. We strongly support the position taken in Chapter 5 and we would recommend that the language used in the preceding chapters is adjusted to correctly reflect the overall position of the Manual. Please see annex 1 for detailed references.

Customs Data

This manual makes the reader believe that Customs administrations work mostly from paper documents, and that customs declarations are excessively prone to human errors (see annex 2). In almost all countries both the Customs administration and the National Statistical Office make extensive use of computer equipment. Practically all customs declarations are nowadays captured electronically. This implies that customs data are verified, available in great detail and available to the statisticians in a very timely manner. We would prefer the Manual to make reference to the ASYCUDA project[6]of UNCTAD

[6] ASYCUDA is functioning in about 90 developing countries. That system verifies declaration entries immediately. Declarations need to be completely filled in order to receive customs clearance. This means

which shows that even in the least developed countries customs administrations are computerized.

Concepts and Definitions

Chapters 3 and 4 do not differentiate enough between customs data and international merchandise trade statistics. Our comments on this issue are pointed out in annex 3. Further, the Manual aims at obtaining detailed price data in line with the concepts of SNA and BOP. We point out that this is difficult to achieve either from customs declarations or from price surveys.

Strategy

The 1981 UN Manual 'Strategies for the measurement of external price indexes' focuses on the different degrees in which unit values and price surveys could be used to measure XMPIs. Chapter 5 of the present draft manual goes a long way in the same direction, but the message of the bulk of the manual is largely skewed towards use of price surveys. Given the availability of customs data and given the fact that customs declarations are captured automatically, the use of unit values (based on customs data) as price proxies in calculation of XMPIs can hardly be denied or ignored. Secondly, the overwhelming existing practice of calculation of XMPIs is by use of unit values obtained from merchandise trade statistics or more detailed customs data. Finally, if the Manual wants to convince compilers to change to price surveys, it may need to show some cost-benefit analyses that make the case why governments need to invest heavily to improve the accuracy of its XMPIs. Annex 4 points at some text where strategies could be discussed in more detail.

Annex 2a: Unit Values

The authors of the Manual make it very clear from the beginning that *the approach of this manual to the collection of prices is the use of surveys of establishments, as opposed to unit values from customs authorities. XMPIs are essentially estimates based on samples of the prices of commodities imported and exported by a sample of establishments* (Reader's Guide, Section A.2, page 2).

It continues with the statement that *unit-value indices are recognized as being prone to bias in this respect. Survey-based XMPIs are the preferred alternative (Preface, page 2).* On the same page it is added that *resource constraints and custom and practice can inhibit innovation; the bias in unit-value indices as surrogates for price indices has been well understood for many years. However, the transition of countries to survey-based price indices has been gradual, and is still underway.*

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among others that quantity information is required. In addition, customs values are validated – to avoid undervaluation – using unit values on the declaration which are matched against a pre-determined list of commodity prices.

I will quote one more passage from the Preface where it is stated that *unit values from customs authorities have been used by some countries as surrogates for prices, at the elementary level of aggregation. This has largely been based on custom and practice, and resource constraints. First, in a major departure from United Nations (1981), the focus of this manual is largely on the establishment survey pricing approach: to obtain the prices of well specified commodities from responding establishments. The use of unit value indexes from customs data as surrogates for price relatives is considered to be appropriate only for particular commodities in exceptional circumstances.*

In paragraph 2.16 of Chapter 2 it is stated that *"the unit value price index tends to be biased in unpredictable directions"*.

The message is clear: price surveys should be done; unit values should be avoided.

Chapter 5: Sampling Issues in Price collection

The message given in Chapter 5, however, seems to be much more accommodating to the use of unit values than indicated in the beginning. First of all, there is the acknowledgement of the availability of customs data as the major source of trade statistics in most countries.

Price surveys normally collect information on products from establishments. For foreign trade in goods, however, administrative sources (customs records) are available from which compilers can calculate unit values.

Empirically, we say a product description is sufficient if the variability of prices of transactions classified under that description is low at any given point in time. An HS unit value is a price if the variance of prices within an HS class is low at any given point in time.

In paragraph 5.9 it is added that *use of already collected administrative information is much more efficient and much less expensive than developing establishment survey sources from which prices are directly collected.*

In paragraph 5.15 it is stated that *the first phase in setting up a compilation system for exports and imports goods prices is to identify the elementary items whose prices will be tracked by the index. The logic of this process is to begin with evaluating the data already available from customs sources.*

The author of this Chapter makes at this point very clear that one has to start and evaluate the unit values before resorting to the use of price surveys. This is a practical approach which is much more in agreement with the line of thinking of current XMPI compilers, and which is much different from the picture given to the reader in the introductory paragraphs. It has been the same more practical line of thinking which was advocated in the Strategies Manual.

To complete the line of thought, paragraph 5.15 continues with *the objective is to test whether each goods elementary aggregate defined by the detailed customs commodity code and destination or source country comprises a single elementary item. If so, because the unit value can be used as a price, a price relative can be formed from them directly and no further collections are required.*

Section C of Chapter 5 continues with suggestions on testing dispersion of unit values per elementary item. For instance, paragraph 5.17 states that *we would test this* [dispersion] *for a given month by constructing a unit value for every transaction (customs document) in the domain in that month and measuring the statistical variance of the resulting collection of unit values.* The testing procedure given in paragraph 5.19 is in our opinion too descriptive in nature and especially on this part of the chapter we believe that more statistical testing of dispersion and multi-modality should be done[7].

Very much in line with the position that unit values and price surveys can be used as complementing data sources, paragraph 5.21 states that *credible evidence of multiple elementary items within a customs elementary aggregate would be the basis for augmenting customs data with survey information in order to identify those elementary items by measuring the associated product and transactions characteristics common to the elementary aggregate.*

Chapter 5 also does not fail to mention problems inherent to the use of price surveys. First of all, one needs *to design a survey of establishments engaged in foreign trade.* The author then outlines the factors working against achieving an ideal sample within a given budget: (1) unknown population variances by strata, (2) deficient sampling frames and (3) low response rates. Further on, it is added that *any sample of establishments and products will becomes increasingly unrepresentative over time. Some form of panel rotation or supplementation for the samples is advised to minimize any bias caused by sample attrition, non-coverage of new products, new establishments, and new production technologies.*

Annex 2b: Customs Data

In the Preface on page 5, the Manual notes that "*not all customs data can be used because quantity information may be unavailable, unreliable, or inapplicable because of the complex nature of the differentiated commodities involved*". Given that customs declarations nowadays are entered in a computerized way with requirements on filling all fields on the declarations and with constraints on value-quantity ratios, the remark seems

[7] In this area our work on statistical testing of dispersion and multi-modality of unit values could be of help. We suggest – first of all – using log-transformed data for the testing procedure to reduce the skew of the distribution of unit value or price data. Then, we advocate (1) an outlier identification procedure based on the box plots of the log-transformed data, (2) the assessment of variance and skew using several parametric and non-parametric measures, and (3) the assessment of a multi-modality index based on the histogram of the data. For each of these measures limits can be set which will jointly define an acceptance / rejection test.

exaggerated. In fact, the environment in most customs offices may be more controlled than what can be expected from enterprise employees who have to complete a price survey.

Chapter 4 (para 4.5) states that "*Customs, the statistical office, or another agency process copies of the customs documents to compile statistics on foreign trade*". We would prefer to rephrase this sentence to "*Customs, the statistical office, or another agency compile statistics on foreign trade on the basis of electronic copies of the customs declarations.*"

The term "shipping quantity" used in paragraph 4.6 implies "gross weight". We would prefer just to use the term "quantity" since "net weight" is required for customs declarations.

Paragraph 4.11 states that "*among the problems faced by statistical agencies using customs data are the delays in receiving it because the customs administration is slow to process declarations.*" As mentioned, this statement is outdated. Nowadays Customs administrations are mostly computerized and customs declarations are captured electronically.

Paragraph 4.12 contains the sentence "A second more thorough validation is done by the customs office later, in a computerized system, to verify the customs operations." Again this sentence implies that capture of customs declaration in the first instance is done on paper. This is in most countries and for most declarations no longer the case. See http://www.asycuda.org for more detailed information on computerization of customs operations.

Annex 2c: Concepts and Definitions

The United Nations Statistical Commission recommendations of international merchandise trade statistics are based largely on regulations set by the World Customs Organization and by the World Trade Organization. One of the main reasons for merchandise trade statisticians to stay in line with those regulations is to allow production of detailed merchandise trade statistics from customs data. Some concepts proposed under SNA and BOP (like change of ownership and residency) do not match customs regulations and therefore detailed data cannot be adequately obtained in accordance with those principles. The point made here is that any reference in the Manual to adjust detailed customs data to comply with change-of-ownership concepts can often not be substantiated since there is no adequate registration of residency or ownership on a customs declaration. Surveys of commodity prices at imports and at exports could face similar problems depending on whether customs-related importing firms are completing the surveys.

Further, producing FOB values from CIF values on the import side could turn out to be rather difficult to do in practice. Chapter 2 (para 2.39) and Chapter 3 (para 3.3)

emphasize FOB prices for both imports and exports. This may be difficult to obtain for import prices based on unit values.

Also in Chapter 2 (para 2.41, for instance) and in Chapter 3 (para 3.2 and 3.3), it is stressed that prices should be recorded at the time of change of ownership between resident and non-resident. This may be difficult to obtain on both accounts, namely it may be unclear if change of ownership took place, and it may be unclear if the transaction was done between a resident and a non-resident.

In Chapter 3 (para 3.6) the Manual states *"However, the IMTS makes a distinction between statistical value and customs valuation of goods where the statistical value is simply the value assigned to the goods by the compiler. Because it leaves the basis of recording and valuation up to the compiler of trade statistics, practice could vary from country to country while remaining consistent with the IMTS"*. It seems that the author of Chapter 3 did not read beyond the introductory paragraph of Valuation or otherwise completely misunderstands the text of IMTS in this Chapter. The fact is that the statistical value of exported and imported goods is defined in paragraph 116 on page 17 of the IMTS, Rev.2, and on page 90 of the Compiler Manual. The correct interpretation is that the statistical value differs from the customs value in such a way that compilers make adjustments "**to promote the comparability of international merchandise trade statistics**" (para 116, Chapter IV. Valuation). The data compilers are encouraged to use additional sources to make sure that imported goods are correctly valued at CIF and exported goods are correctly valued at FOB. Paragraph 3.6 in the Manual needs to be revised.

The end of paragraph 3.8 (page 3-4) states, that "*if these statistics were consistently compiled by all countries, a large fraction of trade could be measured on an SNA accrual basis, to a closer approximation*". This sentence falsely implies in this paragraph that trade is always done directly between two countries. In practice, trade may involve a sequence of stop-overs through other countries, which makes any bilateral analysis between country of origin and country of final destination very difficult. Paragraph 3.9 acknowledges this and addresses this issue in a somewhat academic way. The problem remains that in many cases the exporter will not know at the time of exportation where the final destination of the goods will be.

Section C (Coverage) of Chapter 3 causes confusion. If with the term "merchandise trade" in fact IMTS was meant, then all of paragraphs 3.16 to 3.20 are incorrect and need to be completely rewritten, since IMTS is not based on change of ownership, but on the basis of crossing the border (with a few exceptions). If the BPM5 term of General merchandise was meant, then we would like to make the following comments. (1) Please indicate the distinction between the terms General merchandise and IMTS; and (2) Rewrite paragraphs 3.16 to 3.20 comparing General merchandise with IMTS and not with customs data. IMTS compilers make already adjustments to the basic customs data which are partly in line with what is sought after by General merchandise. For detailed discussion of the differences between IMTS, SNA and BOP see IMTS Compiler Manual, Chapter 14, and Annex E, page 70.

Paragraph 4.7 of Chapter 4 is completely incorrect. Customs declarations record the goods that enter or leave the customs territory of a country, since that is the only territory to which customs law applies. The difference between General Trade System and Special Trade System can be found in Chapter II of IMTS, Concepts and Definitions, and Chapter 6 of the Compilers Manual.

Annex 2d: Strategies for the measurement of external price indexes

The Preface rephrases part of the 1981 UN Manual on page 5 (paragraph 3) where *"a case was made [..] for the careful handling of unit value data from customs authorities to narrow down the definitions of the commodities involved to such an extent as to provide workable definitions for separate unit value strata. Such refinements were to be based on analyses of the distributions of unit values (specifically with regard to multi-modal distributions) and/or breakdowns of transactions into separate strata of unit values by say "size" and country of origin/ destination. There may well be cases where this is to the benefit of XMPI compilation, but these are considered to be exceptions and the survey price approach generally preferable"*.

As mentioned in Annex 1, Chapter 5 contradicts this passage and shows a much more positive and balances approach towards the use of unit values based on customs data, which we support.

To stress the point, I will copy part of Annex 1 also here, namely the following. In paragraph 5.15 it is stated that *the first phase in setting up a compilation system for exports and imports goods prices is to identify the elementary items whose prices will be tracked by the index. The logic of this process is to begin with evaluating the data already available from customs sources.*

The author of this Chapter makes at this point very clear that one has to start and evaluate the unit values before resorting to the use of price surveys. This is a practical approach which is much more in agreement with the line of thinking of current XMPI compilers, and which is much different from the picture given to the reader in the introductory paragraphs. It has been the same more practical line of thinking which was advocated in the Strategies Manual.

To complete the line of thought, paragraph 5.15 continues with *the objective is to test whether each goods elementary aggregate defined by the detailed customs commodity code and destination or source country comprises a single elementary item. If so, because the unit value can be used as a price, a price relative can be formed from them directly and no further collections are required.*