



TRAINFORTRADE

Strengthening knowledge and skills through innovative approaches for sustainable economic development

Module 5

Dissemination and analysis

Participants Manual

Training Course on International Merchandise Trade Statistics (IMTS)



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Forward

E-learning course on international merchandise trade statistics

International trade in goods are an increasingly important part of global commerce. International Merchandise Trade Statistics (IMTS) play a vital part in monitoring, analysing and projecting macroeconomic developments in individual economies and the world economy. IMTS are well developed and international standards have been defined in the IMTS 2010 to harmonize standards and practices. However, many measurement issues and comparability problems remain. Increasingly the important phenomenon of globalization, entailing the internationalization of production and sales and new forms of delivering goods and services to customers across countries, new developments in information and communication technologies and the growing importance of e-commerce requires new approaches and poses new methodological challenges.

The objective of this e-learning course on IMTS is to provide more easily accessible and rather complete training material for those involved in the collection, compilation, analysis and dissemination of IMTS.

The main goals are to enhance statisticians' ability to apply the most recent internationally agreed recommendations on IMTS, define best possible data sources, set up adequate collection systems, and enhance statistics compilation processes. Furthermore, the course would communicate the importance of quality, metadata, timely dissemination, and links to economic analysis and national policy objectives. The training would guide trainees on how to better use the internationally available guidance, especially the IMTS Concepts and Definitions 2010 and the related Compilers Manual.

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The training package has been drafted by Romesh Paul, with the collaboration of: Steve Mac Feely, Mark Assaf, Dominique Chantrel, Aylwin Zabula, Sanja Blazevic, Yumiko Mochizuki, Flavine Creppy, Andreas Maurer, Barbara D'Andrea, Mercedes Ninez Piezas-Jerbi, Christophe Degain, Markie Muryawan, and Nancy Snyder.

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1. INTRODUCTION

International trade is defined, in the Balance of Payments as in the System of National Accounts, as the whole set of international transactions in items that are outcomes of production activities. The term “international merchandise trade statistics” (IMTS) refers to a specialized multipurpose domain of official statistics concerned with the provision of data on the movements of goods between countries and areas.

This module on ‘Dissemination and Analysis’ describes the dissemination of data (printed and/or online), maintenance of a timely release schedule, visualization of trade data, creation of a story for publication to check for relevance and keeping abreast with related, current and emerging economic and dissemination trends.

This module is based on the recommendations contained in chapter X of ‘IMTS: Concepts and Definitions 2010’ (IMTS 2010), on dissemination, as well as on chapter XXVI of ‘IMTS: Compilers Manual’ (IMTS 2010-CM), on dissemination. The UNECE guide on ‘Making data meaningful’ has also been used when developing sections of this module.

IMTS 2010 highlights the importance of countries’ adherence to the United Nations Fundamental Principles of Official Statistics which state, inter alia, that:

- a. Official statistics “provide an indispensable element in the information system of a democratic society, serving the Government, the economy and the public”;
- b. These statistics should be “made available on an impartial basis by official statistical agencies to honour citizens’ entitlement to public information”;
- c. The statistical agencies should “facilitate a correct interpretation of the data” and therefore have “to present information according to scientific standards on the sources, methods and procedures of the statistics”;
- d. The statistical agencies “are entitled to comment on erroneous interpretation and misuse of statistics”.

In the light of these Principles, trade statistics should be made available on an impartial basis by official statistical agencies to honour the entitlement of citizens to public information. The dissemination of data and metadata, therefore, should be treated as an integral part of the national programme of trade statistics and carried out with great care and attention to the needs of users, while at the same time ensuring adequate confidentiality of data providers.

2. IMTS 2010 RECOMMENDATIONS

IMTS 2010 New recommendations

Dissemination (chap. X)

52. Confidentiality rules: Use passive confidentiality as much as possible, unless the use of active confidentiality is already the established, desired and accepted practice (para. 10.3) *New recommendation*

53. Reporting of confidential information: Report information deemed confidential in full detail at the next higher level of commodity and/or partner aggregation that adequately protects confidentiality (para. 10.3) *Unchanged*

54. Data dissemination timetable: Announce in advance the precise dates at which the statistics will be released and revised (para. 10.5) *Updated recommendation*

55. Publication of provisional estimates: Explore the possibility of publishing provisional estimates soon after the end of the reference period (para. 10.8) *New encouragement*

56. Revision policy: Develop a revision policy that is synchronized with the release calendar (para. 10.11) *Updated encouragement*

57. Data dissemination: Treat all users equally and disseminate data without preference to any national or international user group. Choose the dissemination format that best suits user needs (para. 10.13) *New recommendation*

3. CONFIDENTIALITY

Statistical confidentiality

In general, statistical confidentiality is applied to protect against the disclosure of information about individual natural or legal persons, and is necessary in order to gain and keep the trust of both those required to provide data and those using the statistical information. Legal provisions governing statistical confidentiality at the national level are set forth in countries' statistical laws or other supplementary governmental regulations and are, as a rule, consistent with the principle 6 of the United Nations Fundamental Principles of Official Statistics (see <https://unstats.un.org/unsd/dnss/gp/fundprinciples.aspx>). It is recognized, however, that statistical confidentiality needs to be balanced against the need for public information in cases where the application of statistical confidentiality would limit or make it impossible to provide sufficient or meaningful information, and that the ways statistical confidentiality is applied may differ from one statistical domain to another.

Confidentiality rules for international merchandise trade statistics

The customs and other documentation upon which trade statistics are based is often designed for use for non-statistical purposes, such as clearing goods into and out of the country, and contains detailed information about individual transactions. Such information, even when aggregated by commodity and partner may, potentially, disclose some information about individual traders. For trade statistics, it is common practice that trade data are made confidential only when the trader so requests and the statistical authority finds the request justified based on confidentiality rules. This approach to confidentiality is called "passive confidentiality" as opposed to "active confidentiality", which aims to systematically prevent the identification of any statistical unit in the disseminated data, thereby disclosing individual information. In view of the high demand for detailed trade statistics and the burden and potential difficulties of applying active confidentiality to trade statistics, it is recommended that passive confidentiality be applied as much as possible unless the use of active confidentiality is already the established, desired and accepted practice. It is further recommended that in suppressing data due to confidentiality, any information deemed confidential (suppressed) be reported in full detail at the next higher level of commodity and/or partner aggregation that adequately protects confidentiality. Countries may develop other measures that can serve the same purpose of protecting confidentiality, while making information available to the best possible extent.

Statistical confidentiality versus user needs

Statistical confidentiality refers to the protection of information of individual statistical units and should be distinguished from other forms of confidentiality under which information is not disseminated based on considerations such as national security concerns. It is good practice for compilers of international merchandise trade statistics to always strive for a full coverage of all trade transactions that are within the scope of IMTS while applying appropriate methods to keep certain information confidential. IMTS 2010 (para. 10.2) recognizes the need both for statistical confidentiality and for balancing it against the demand for public information in cases where the application of statistical confidentiality would limit or make it impossible to provide sufficient or meaningful information. It is also good practice to disseminate, along with the data, a quantitative indicator of the quantity of goods subject to confidentiality.

Development and implementation of confidentiality rules

IMTS 2010 (para. 10.3) recommends that passive confidentiality be applied as much as possible, i.e., that data be treated as confidential only at the trader's request and when the statistical authority finds the request justified based on the confidentiality rules, unless the use of active confidentiality is already the established, desired and accepted practice. It is further recommended that in suppressing data due to confidentiality, any information deemed confidential (suppressed) be reported in full detail at the next higher level of commodity and/or partner aggregation that adequately protects confidentiality. However, the implementation of these recommendations on statistical confidentiality also depends to a large extent on each country's legislation and the general confidentiality policy adopted by its statistical system. An important challenge in the implementation of confidentiality rules is to ensure that confidentiality is applied across all the different classifications in which data are disseminated while preserving

the goal of maximizing information.

Informing about confidentiality rules

It is good practice for all countries to develop and publish an overview of their confidentiality rules with respect to international merchandise trade data in order that data reporters may be assured that their right to confidentiality is guaranteed, while data users may be informed about certain data limitations, thereby enabling them to use the data more appropriately. It is also good practice to provide users with details on what part of the data are affected most by the application of confidentiality rules and on the magnitude of this effect.

Example 1

Treatment of confidentiality in Germany

Passive confidentiality in foreign trade statistics is regulated by European law. Importers and exporters submitting Intrastat/customs declarations in Germany can submit a request for confidentiality, at which point the Federal Statistical Office examines whether the application of confidentiality is justified or not. Two criteria are relevant for establishing confidentiality: the maximum number of parties responsible for providing the information (traders, importers or exporters) and the so-called “p% rule”. The first criterion is applicable if there are three or more providers of statistical information (PSI) involved. The p% rule involves calculating the difference between total value and the second largest value: if the difference exceeds the largest value by less than p%, then one PSI is dominating; the value of p% is determined by the Federal Statistical Office.

The request for confidentiality is granted if the above criteria are met in a majority of the 12 preceding reporting months. In cases of doubt, the decision is always made in favour of confidentiality. “Primary confidentiality” is implemented both by partner countries (with the result that specific or all countries are suppressed, flagged as confidential and summed up under the position “confidential countries”) and by commodity codes (with the result that specific codes are suppressed, flagged as confidential and summed up under a specific code number within chapter 99). Each confidential commodity code (or partner country) needs a counterpart (“secondary confidentiality”). Otherwise, confidential values could be recalculated through the results in higher commodity levels or the results in other classifications (e.g., SITC). The aim of finding a suitable counterpart is to protect data with a minimum loss of information. It is desirable to find a nearby counterpart to a confidential commodity code. The next step is to determine whether the counterpart commodity code also ensures that confidentiality is maintained throughout all other classifications used in foreign trade statistics (e.g., SITC, CPA). Confidentiality of data is always granted for the current and the following years. After expiration of this term, companies have to submit a new application. Otherwise, the data are published again. Data once marked as confidential are kept confidential forever. Data on exports and imports of military arms are generally kept confidential.

Example 2

Disclosure control in Canada

Statistics Canada is prohibited by law from releasing any data that would divulge information obtained under the Statistics Act that relates to any identifiable person, business or organization without the prior knowledge or the consent in writing of that person, business or organization. Various confidentiality rules are applied to all data that are released or published so as to prevent the publication or disclosure of any information deemed confidential. If necessary, data are suppressed to prevent direct or residual disclosure of identifiable information.

4. DATA DISSEMINATION TIMETABLE

Data-dissemination timetable

In producing statistical information, there is usually a trade-off between the timeliness with which the information is prepared and the accuracy and level of detail of the published data. Developing and adhering to an appropriate data-compilation and release schedule is therefore crucial for maintaining good relations between the producers of international merchandise trade statistics and the user community. It is recommended that countries announce in advance the precise dates at which those statistics will be released and revised. This advance release calendar should be posted before the beginning of each year on the website of the national agency responsible for the dissemination of official trade statistics.

Important considerations that should be taken into account in determining the compilation and release schedule of international merchandise trade statistics include:

- a. User requirements, such as the requirements of policymakers, the business community and the general public;
- b. Timing of the collection of initial data by customs administrations and other source agencies;
- c. The extent and timing of data revisions of the major data sources;
- d. Modes of data dissemination (press release, online access or hard copy).

Timeliness

Timeliness is the length of time between the event (the end of the reference period) and the availability of statistical information about that event. The timeliness of the release of monthly, quarterly and annual international merchandise trade data varies greatly from country to country, mainly reflecting different perspectives on the timeliness-reliability-accuracy trade-off but also reflecting differences in available resources and the efficiency and effectiveness of the statistical production process. Since processing customs declarations in most countries is automated and the records relevant to statistics are edited and consolidated on a monthly basis, countries are encouraged to issue their first releases of data as follows:

- a. Monthly totals of exports and imports within 45 days after the end of the month, at least by major trading partners and basic commodity breakdown;
- b. Quarterly data within 60 days after the end of the quarter;
- c. Annual data within 90 days after the end of the year.

In view of the importance of the timeliness of totals of exports and imports, countries are encouraged to explore the possibility of publishing their provisional estimates soon after the end of the reference period. Such estimates, by definition, would be based on relatively limited data content and would be replaced by more accurate but less timely figures at a later date.

Advance release calendar

IMTS 2010 (para. 10.5) further recommends that

- a. Countries announce in advance the precise dates at which those statistics will be released and revised; and
- b. This advance release calendar is posted before the beginning of each year on the website of the national agency responsible for the dissemination of the official trade statistics.

While implementing those recommendations and encouragements, it is good practice to make clear the dates on which the provisional estimates and the final data (no longer subject to regular revision) will become available. Also, it is good practice to inform users about availability of such calendars using all appropriate means of communication.

Coherence of monthly, quarterly and annual data

If countries use additional information for the compilation of annual international merchandise trade statistics, the data for the fourth quarter (or for the twelfth month) need to be compiled and disseminated in their own right and should not be derived as the difference between the annual totals and the sum for the first three quarters (or 11 months) in order to provide undistorted data for all months and quarters. Countries are encouraged to disseminate all revised monthly, quarterly and annual data to ensure the consistency of data available to users.

Dealing with the trade-off between timeliness, reliability and accuracy

In producing data, there is usually a trade-off between the timeliness, on the one hand, and the reliability, accuracy and level of detail of the published data, on the other hand. Recognizing this trade-off, IMTS 2010 (paras. 10.5-10.6) encourages countries, while making relevant decisions, to take into consideration a number of factors such as user requirements, timing of the collection of initial data by the customs administrations and other source agencies, extent and timing of data revisions of the major data sources, and modes of data dissemination. It is good practice to discuss this trade-off explicitly with major user groups, in order that an understanding may be reached on the best solution, and to make this understanding publicly available.

Early dissemination of provisional estimates

To improve the timeliness in the dissemination of international merchandise trade statistics, it is a good practice to publish, on a regular basis, the provisional estimates of total exports and imports, as well as of trade by major commodities and partners, soon after the end of the reference period. Such estimates, by their very nature, would be based on relatively limited data content and replaced at a later date by more accurate, but less timely figures. However, compilers and users must be aware of the trade-off between quality (size of revisions) and timeliness (e.g., it is generally not a good practice to frequently publish large revisions (IMTS 2010, paras. 10.10-10.12)). Quality aspects need to be taken into account when deciding on the frequency of publication.

5. REVISION POLICY

Data revisions

Revisions are an essential part of country practices in the compilation of international merchandise trade statistics. Their production is a consequence of the trade-off between the timeliness of published data and their reliability, accuracy and comprehensiveness. To resolve those issues, many countries compile provisional data that are later revised when new and more accurate information becomes available. Such a practice is encouraged if countries can ensure consistency between provisional and final data. Although, in general, repeated revisions may be perceived as reflecting negatively on the reliability of official international merchandise trade data, the attempt to avoid them by producing accurate but very untimely data will ultimately fail to satisfy user needs. It is important to emphasize that the revisions of international merchandise trade data are produced for the benefit of users in order to provide them with data that are as timely and accurate as possible. The revisions affect both annual and short-term international merchandise trade statistics but they are often more significant for short-term data.

Reasons for revisions of data

Reasons for revisions can be classified in many ways. In general, two types of revisions are differentiated:

- a. Routine, normal or concurrent revisions that are part of the regular statistical production process and aim to incorporate new or updated data or correct data or compilation errors; and
- b. Major or special revisions that are not part of the regular revision schedule and are conducted in order to incorporate major changes in concepts, definitions, classifications and changes in data sources.

For normal statistical data revisions, countries are encouraged to develop a revision policy that is synchronized with the release calendar. Statistical offices may decide to carry out a special revision, in addition to the normal statistical data revisions, for the purpose of reassessing data or investigating in depth some new economic structures. Such revisions are carried out at longer, irregular intervals of time. Often, they may require changes in the time series going as far back as the beginning of the series to retain methodological consistency. Such revisions should be subject to prior notification to users to explain why they are necessary and provide information on the possible impact of such revisions on data.

Revision policy

Countries are encouraged to develop a revision policy that is well designed, carefully managed, transparent and well coordinated with other areas of statistics, and hence allows users to cope with revisions in a systematic manner. The absence of coordination and planning of revisions is considered a quality problem by users. Essential features of a well established revision policy are a predetermined release and revision schedule, reasonable stability from year to year, openness, information on reasons and effects, easy access of users to sufficiently long time series of revised data, and adequate documentation of revisions in the statistical publications and databases. A sound revision policy is recognized as an important aspect of good governance in statistics, because it will not only help the national users of the data but also promote international consistency.

Features of a good revision policy

Recognizing that data revisions are an essential part of country practices, IMTS 2010 (paras. 10.10–10.11) encourages countries to develop a revision policy that is well designed, carefully managed, transparent and well coordinated with other areas of statistics and hence allows users to cope with revisions in a systematic manner. The following are some good practices in relation to the revision policy (see IMTS 2010, para. 10.12):

- a. Availability of a detailed description of the revision policy on the responsible agency's website;
- b. Reasonable stability of timing of the revisions from year to year;
- c. Predetermined timing of revisions (clearly reflected in the data release calendar);

- d. Prior notification to users whenever a revision requires changes in the time series going as far back as the beginning of the series to retain methodological consistency, explanation for the reasons for the revision and provision of information on its possible impact on the data;
- e. Easy access to sufficiently long time-series of revised data;
- f. Dissemination of all revised monthly, quarterly and annual data so as to ensure consistency of all data available to users, including seasonally adjusted data and indices;
- g. Adequate documentation of revisions in the statistical publications and databases;
- h. Coordination of the revision policy with non-customs data providers, which might be the origin of large revisions;
- i. Establishment of a vintage database to measure the size of revisions and generate quality indicators.
- j. Country experiences in setting up and implementing a good revision policy are described below.

Example 3**Revision policy of the Philippines**

The figures for the previous month are revised to include documents that were submitted late and were not included before the cut-off date, i.e., for exports 10 days after the reference month and for imports 25 days after the reference month. The revised monthly figures are reflected in the next month's press release. Processing, cleaning, and updating of data files to produce final tabulations are carried out for exports 5 to 7 days after the press release date, and for imports 5 to 10 days after the press release date. Revisions are also due to:

- (a) Consistency between FOB values and volume, both in gross weight in kilos and quantity.
- (b) Validation of values to ensure credibility and accuracy of the final figures.
- (c) Adjustments due to scope and coverage.

Example 4**Revision policy of Canada**

In general, merchandise trade data are revised on an on-going basis for each month of the current year. Current-year revisions are reflected in both the customs- and BOP-based data. The previous year's customs data are revised with the release of the data for the January and February reference months as well as on a quarterly basis. The previous two years of customs-based data are revised annually and released in February with the data for the December reference month. The previous year's BOP-based data are revised with the release of the January, February and March reference months. Revisions to BOP-based data for the previous three years are released annually in June with the data for the April reference month. Factors influencing revisions include late receipt of import and export documentation, incorrect information on customs forms, replacement of estimates produced for the energy sector with actual figures, changes in classification of merchandise based on more current information, and changes to seasonal adjustment factors.

6. DATA DISSEMINATION

Importance of dissemination

The availability of official statistics in general and statistics of international merchandise trade in particular is one of the cornerstones of public confidence in good government, as such statistics can inform debate and decision-making both by Governments and by the wider community. In this context, IMTS 2010 highlights the importance of countries' adherence to the United Nations Fundamental Principles of Official Statistics.

In the light of these Principles, the dissemination of trade data and metadata is an integral part of the national programme of trade statistics and should be carried out with great care and attention to the needs of users, while at the same time ensuring adequate confidentiality of data providers.

Communication strategy

Increasingly, organizations and individuals recognize the importance of using statistical findings to make evidence-based decisions. For many citizens, the news media provide their only exposure to official statistics. Therefore, it is critical that the statistical organization communicates effectively with the media to achieve three important dissemination objectives:

- To inform the general public about the latest releases of official statistics and reports on the social, economic and general conditions of the country;
- To demonstrate the relevance of statistical information to both the general public and to public and private-sector organizations and businesses to inform decision-making throughout society more effectively;
- To increase public awareness of and support for statistical programmes and services.

The extent to which the NSO can communicate effectively with and through the media has a large impact on how well it can achieve these objectives. Thus, it is in the best interest of the NSO to build a strong working relationship with the media, to make it easy for journalists to report on statistical information in an accurate, timely and informative manner, and to take steps to increase media coverage as a way of reaching the broader society with important statistical information.

Diversity of user groups and needs

A key to the usefulness of trade statistics is its broad dissemination. Trade statistics are compiled to serve the needs of many users, including Governments, the business community, the mass media, non-governmental organizations (NGOs), compilers of other economic statistics such as balance of payments and national accounts, various regional, supranational and international organizations, researchers and the public at large. The uses of trade data are numerous and range from the development of national, regional and international trade and general economic policies to market analysis, determination of the economic characteristics of traders, infrastructure planning and provision of input into the system of national accounts and balance-of-payments statistics.

Special data requests

Regular data dissemination should satisfy most, if not all, user needs. However, some users might have special needs which would require highly complex data extraction, which they themselves might not be able to perform. It is a good practice to offer such users premium data extraction services on a fee basis. Countries should ensure that users are made fully aware of all available options for obtaining the required data.

Factors to consider in data and metadata dissemination

Compilers of international merchandise trade statistics are advised to consider the following factors in designing and implementing data and metadata dissemination strategies. Each of these factors will be subsequently discussed:

- a. Variables to be made available;
- b. Timeliness of data and metadata dissemination;

- c. Coherence between disseminated data sets;
- d. Statistical confidentiality;
- e. Revision policy;
- f. Groups of users and their specific needs;
- g. Formats and means of dissemination.

Data dissemination strategy

A key to the usefulness of trade statistics is its broad dissemination. It is recommended that all users are treated equally and data are disseminated without preference to any national or international user group. Data can be disseminated both electronically and in paper publications. It is recommended that countries choose the dissemination format that best suits their user needs. In view of the diversity of user groups it is good practice to adopt several formats and means of dissemination to ensure that data and metadata are effectively delivered. For example, press releases of international merchandise trade statistics aimed at the general public have to be disseminated in ways that facilitate re-dissemination by mass media, while more comprehensive or detailed statistics intended for researchers need to be disseminated through online databases, with hard-copy publications used as reference material. It is further recommended that international merchandise trade statistics be accessed through the electronic dissemination databases maintained by the responsible agency. Regular data dissemination should satisfy most if not all user needs. It is advisable that countries ensure that users are clearly made aware of the procedures and options for obtaining required data.

Dissemination of metadata

Provision of adequate metadata and quality assessment of international merchandise trade statistics are as important to users as the provision of data itself. Countries are encouraged to follow the recommendations provided in IMTS 2010 chapter 9 above on data quality and metadata for international merchandise trade statistics, and to develop and disseminate metadata in accordance with the recommendations provided. Countries may wish to consider developing different levels of detail of metadata so as to facilitate its access and use.

International reporting

Countries are encouraged to cooperate with international, supranational and regional organizations to identify and apply the most efficient ways of international dissemination of their trade statistics and related metadata. In this context, countries may wish to review the Statistical Data and Metadata Exchange (SDMX) format for possible use in the exchange and sharing of their data.

Use of different means of dissemination

News release

The news release is the fundamental tool for presenting information to the media. It provides interesting and newsworthy information in a concise, ready-to-use format. Its primary goal is to convince a reporter that you've got a story worth pursuing. Some media outlets - particularly smaller publications and websites - may simply republish news releases. Most will devote time and energy to pursuing a story about the particular information or event.

The statistical organization should ensure that the subject matter of the news release is timely and newsworthy, that the information provided is factual and accurate, and that the release is written in clear and easy-to-understand language.

But even with the best news release, there is no guarantee that it will be picked up by the media. News organizations may have other themes on their agenda or they may decide that the news release is not newsworthy.

Statistical organizations may have different names for a news release: "News Release", "Press Release" or "First

Release” are common terms. Shorter releases on metadata, which provide background material, or those announcing an upcoming event may be called a “Media Advisory,” “News Bulletin,” “Tip Sheet,” or “Note to Editors.” Finally, to convey more in-depth information to the media, some organizations will issue a “Backgrounder” or “Fact Sheet”, generally longer and more detailed than a normal news release.

Regardless of terminology, be consistent in naming your release of new and interesting data; do not use multiple names for essentially the same news content. The media should immediately recognize the label on a package of potential interest to them.

News releases are written for journalists who are usually working under time pressure. As a result, the release should be tailored to their needs. Some guidelines follow.

Contributors – writers and reviewers

Creating and distributing a news release normally involves contributors from different parts of the organization, each with a distinct role in researching, writing, reviewing and validating a news release. The three main roles are:

- Subject-matter specialists - Subject-matter experts who analyse data, identify main trends, check for accuracy, and draw conclusions, providing the basic content of a news release.
- Press Office - Communications professionals who look at the newsworthiness, language, style and readability of the news release; arrange for translation, if needed; connect to the media and journalists; and transmit the release.
- Organization leadership - The hierarchy or senior management of the organization, who validate a release and ensure that it is in line with the mission and strategic objectives of the organization.

The division of tasks between those three main contributors may vary across statistical organizations. In some cases, subject-matter specialists have been trained to write up their own material and are able to create a more or less final news release that the Press Office disseminates to the media. At the other end of the scale, communications professionals from the Press Office may write all releases in a journalistic style, on the basis of information obtained from statisticians.

Generally, best practice is that subject-matter experts and communications professionals collaborate to develop a factual, informative, well-written release, which is then reviewed and approved by the management.

Use of social media

It is also a good practice to use social media as an additional tool to reach trade statistics users, in particular journalists. Committing to and engaging in social media requires:

Developing and presenting the business case;

Getting commitment from senior management (partnering with senior management affords a wider perspective on organization operations and goals, and also of unidentified risks, ranging from perception to exposure or disclosure);

Establishing a working group of internal stakeholders (the group of program areas who will benefit from increased media exposure can outline and coordinate required procedures and guidelines to achieve a corporate voice and to establish pilot projects for approval from senior management);

Conducting pilot projects to measure success, risks, and resource requirements;

Partnering Information Technology with the Communications department on matters of infrastructure and security has proven to be successful in achieving social media goals through a close, collaborative, web management relationship that aligns technology and branding.

Redesigning paper publications

It is good practice to periodically redesign paper publications in order to make use of innovative means of data and metadata presentation and better reflect user demands. In this connection, countries are advised that it is no longer necessary to issue paper publications in an old fashioned way containing a set of tables or providing very detailed data on trade in respect of particular commodity groups and partners. A better practice is to focus such publications on the main features of a country’s external trade, and present data in a more user-friendly way by resorting to enhanced visual elements, such as colour charts and by adding more analytical information.

Example 5**Set of possible data and structural metadata items to be disseminated**

Variables	Possible values
Reference period	E.g., identification of year for annual data, identification of year and month for monthly data, etc.
Trade flow	Exports, re-exports, imports, or re-imports
Commodity or commodity aggregate	Six-digit HS commodity code, four-digit HS heading, HS Chapter, etc.
Commodity classification	E.g., HS 2012, HS 2007, etc.
Country of last known destination (for exports)	E.g., ISO alpha-3 country code
Country of origin (for imports)	E.g., ISO alpha-3 country code
Country of consignment (both for exports and imports)	E.g., ISO alpha-3 country code
Mode of transport	E.g., air, water, land and their subdivisions
FOB value	Monetary value
CIF value	Monetary value
Currency unit	E.g., national currency, United States dollars, etc.
Quantity (net weight)	Physical quantity (in kilograms)
Supplementary quantity	Physical quantity (in supplementary unit of measurement)
Supplementary unit of measurement	E.g., litres, etc.
Custom procedure code (or applicable transaction code)	Code of the customs procedure applied to individual transactions by customs; any applied procedure or transaction code if customs procedure codes are not available or if additional codes are used

Example 6

Dissemination matrix - aggregated data and structural metadata

Trade flow	Reference period	Country of last known destination	Country of origin	Country of consignment	Mode of transport	Value, FOB	Value, CIF	Currency
Exports	R	R		E	R	R	R	R
Re-exports	R	R		E	R	R	R	R
Imports	R		R	R	R	E		R
Reimports	R		R	R	R	E		R

R:

E:

Example 7

Dissemination matrix - detailed data and structural metadata

Trade flow	Reference period	Commodity code	Country of last known destination	Country of origin	Country of consignment	Mode of transport	Value, FOB	Value, CIF	Currency	Quantity (net weight)	Supplementary quantity	Supplementary quantity unit	Customs procedure code
Exports	R	R	R		E	R	R	R	R	R	R	R	E
Re-exports	R	R	R		E	R	R	R	R	R	R	R	E
Imports	R	R		R	R	R	E		R	R	R	R	E
Reimports	R	R		R	R	R	E		R	R	R	R	E

Central role of electronic databases

IMTS 2010 (para. 10.13) recommends that the official country trade statistics be made available to users through the electronic databases maintained by the responsible agency. It is good practice to ensure that such databases:

- a. Allow free and equal access to all users to any data record considered part of official trade statistics;
- b. Contain an extensive metadata and knowledge base;
- c. Allow users to query the entire database through a user-friendly interface, and to download query results in the commonly used electronic data formats (such as comma-delimited text files), thereby reducing the need for personalized handling of most data requests and greatly enhancing the efficiency of data dissemination.

Example 8

The central role of electronic databases for data dissemination: the case of Brazil

The System of Analysis of Foreign Trade Information, AliceWeb2, is the most important means of disseminating Brazil's foreign trade statistics. It was released in 2001 with the aim of modernizing the means of access to and the systematic dissemination of statistical data on Brazil's exports and imports. In August 2011, the Secretariat of Foreign Trade in the Ministry of Development, Industry and Foreign Trade (MDIC/SECEX) updated the system, incorporating advances in information technology and the experience gained in the 10 years following its launch, and also adding additional variables and periods. Access is free after registration. There are currently over 200,000 registered users from 144 countries. The system is available in English, Portuguese and Spanish.

AliceWeb2 disseminates detailed information on Brazil's international merchandise trade up to the eight-digit level of the Mercosur Common Nomenclature (NCM) by partner country and economic bloc, by State and municipality, port of loading and unloading, and mode of transport. It provides the trade balance by any of the variables on a monthly basis, and according to the desired periods. The system also enables the generation of files for download in Excel and ASCII format (txt structured) and allows automatic transmission to an email account. The data, which are updated monthly, are obtained from the Integrated Foreign Trade System (SISCOMEX), which manages Brazil's foreign trade. Data are available as of January 1989 (there are about three terabytes of data), either by month or accumulated.

Trade information is expressed in United States dollars in terms of FOB (free on board) and net kilogram. When the search includes a commodity, quantity and average prices are also provided. The following information is available, both for exports and for imports: Goods at all levels of the Harmonized System (two-, four-, six- or eight-digit level of the NCM)

- Countries of destination or origin
- Economic blocks of destination or origin
- Member State producers and importers
- Municipalities' exporters and importers
- Ports of loading and unloading
- Mode of transport

Others system features are:

- Auto-fill function in the search for commodity codes
- Up to six concurrent periods of monthly and/or accumulated data
- Basket products: selection of several NCM, simultaneously
- General total: monthly series of one or more variables combined
- Trade Balance: monthly export and import trade by variable
- Auxiliary tables: all codes/names of the variables used in the system

7. DATA ANALYSIS

Analysing international merchandise trade statistics

A key to the usefulness of trade statistics is its broad dissemination. Trade statistics are compiled to serve the needs of many users, including Governments, the business community, the mass media, non-governmental organizations (NGOs), compilers of other economic statistics such as balance of payments and national accounts, various regional, supranational and international organizations, researchers and the public at large. The uses of trade data are numerous and range from the development of national, regional and international trade and general economic policies to market analysis, determination of the economic characteristics of traders, infrastructure planning and provision of input into the system of national accounts and balance-of-payments statistics.

Changes in user needs, including increased demand for more detailed and timely data for market access negotiations and trade policy purposes, market research by the business community and economic analysis (e.g., linking industry and trade data) led to evolutions in dissemination and analysis of international trade data, which have been taken into account in the new revision of recommendations for IMTS.

User support to ensure correct interpretation of data

While statistics can be used acceptably and interpreted in many different ways, it is important to maintain trust in, and the credibility of, official trade statistics. Hence, it is good practice for the responsible statistical agency to prevent obviously erroneous interpretation of the data, and to undertake the necessary corrective actions if such faulty interpretations are detected (for instance, by conducting press conferences, providing press releases and writing letters to the editors of publications where misinterpretations have been detected). One good practice for preventing misinterpretation of data is to give special attention to establishing direct contacts with other government agencies, international organizations and universities, as these are users of foreign trade statistics whose analyses have a major impact on public policy and public opinion.

Outreach activities

It is good practice to conduct regular outreach activities aimed at helping users to better understand data and put them to the most effective use, including efforts to improve the statistical literacy of users and to prevent misinterpretation, for example, within the context of a broad public relations strategy designed to deepen the general public's understanding of the importance of statistics. The following outreach activities can be encouraged: conduct of seminars focused on specific user groups; provision of tutorials and user guides explaining how to find data on the dissemination website; organization of press conferences and including contact information in press releases to assist users in the correct interpretation of the statistics; enabling user groups to participate in annual conferences, book fairs and other suitable events; and launching of awareness campaigns, e.g., a "national statistics day/week/month".

Linking business and trade statistics

Linking and integrating trade and business statistics is important for data-compilation and analytical purposes. A major development in economics statistics in recent years has been the establishment and use of national business registers that allow not only the conduct of business surveys but also the linkage of information from different data sources, potentially leading to significant efficiency and quality gains in data collection. Also, the integration of data from different sources provides new information for many analytical purposes that would not otherwise exist. One application is the analysis of trade by enterprise characteristics, which, for example, allows the impact of globalization on businesses to be examined.

Countries are encouraged to integrate their trade register with their business register and to take steps towards establishing an integrated system of economics statistics for data compilation and analysis.

Use of SITC for research and analysis purposes

Majority of countries and international organizations continued to use SITC for various purposes, such as the study

of long-term trends in international merchandise trade and the aggregation of traded commodities into classes more suitable for economic analysis. It is recommended that, in addition to HS, countries can use SITC for the dissemination and analysis of trade statistics according to user requirements.

In macroeconomic research and analysis, SITC is further aggregated into two broad commodity groups: primary commodities, precious stones and non-monetary gold; and manufactured goods. This is done to monitor the economic development of a country which normally starts by exporting mainly primary commodities, then moves up into commodities with higher value added (manufactured goods). However, for some countries with a high proportion of fuels exports in their total trade, it is necessary to exclude fuels in the analysis, in order to better monitor real economic development. In addition to those two broad groups, more detailed groups are created owing to special analytical interests, such as iron and steel (as an indication of construction activities), agricultural raw materials (normally used as intermediate inputs in various industries) and textile fibres, yarn, fabrics and clothing (important manufactured goods exported by developing economies).

Need for trade statistics by partner country

Trade statistics by partner country, both for the total value of trade in goods and for the value and quantity of trade in individual commodities, are of significant analytical value. They are used for a number of purposes, including the analysis of economic trends and regional trade patterns; the calculation of trade shares; market analysis; business decisions; trade policy monitoring and negotiations; the compilation of national accounts; balance of payments; and checking the accuracy and reliability of trade data. Trade-by-partner statistics are frequently used by analysts to estimate imports and exports of a country that does not report trade data (or does so only after substantial delay).

The recording of imports by country of origin and country of consumption has the advantage of showing the direct relationship between the producing country (the country in which goods originate) and the country where goods are actually used. The information about goods origin is regarded as indispensable for matters of trade policy and negotiations, for administering import quotas or differential tariffs and for related economic analysis. The WTO Agreement on Rules of Origin, which is obligatory for all WTO members, emphasizes the importance of such information in the context of application for most-favoured-nation treatment, anti-dumping and countervailing duties, safeguard measures, origin-marking requirements, quantitative restrictions and quotas. The Agreement specifically provides that the WTO rules of origin, after their adoption, will “include rules used for government procurement and trade statistics”.

For the calculation of trade balances in the context of the analysis of international merchandise trade statistics, it is recommended to use imports by country of origin and exports by country of last known destination. For specific purposes such as balance of payments, reconciliation studies, etc., trade balances using a different partner attribution may be used.

Further detailed information on treatment of partner country is available in IMTS 2010-CM chapter XVI.

Need for external trade indices

Many users need more information than trade values by country or by commodity, and require information on prices and volumes as well. In particular, business analysts and economists use international trade indices for analysis and research in respect of such questions as the causes of the real-economy effects that price changes have on trade. The information on the development of prices and volumes is generally presented in the form of indices. It is recommended that all countries produce and publish, on a monthly, quarterly and annual basis, both volume (quantum) indices and either price or unit-value indices for their total imports and exports. Countries are also encouraged to calculate and publish such indices for commodity groups of particular importance to countries at least quarterly and annually.

Price and unit value indices

Two kinds of indices may be produced to reflect prices for imports and exports: unit-value indices that are based primarily on customs documents and export/import price indices that are based on survey data. Both approaches have strengths and weaknesses. Although price indices are generally preferred on methodological grounds, in practice countries may not have the resources available to compile that information. Many countries compile only

unit-value indices, while others compile and use both price and unit-value indices in a complementary manner. Further detailed information on external trade indices is available in IMTS 2010-CM chapter XXVIII.

Need for seasonally adjusted data

Monthly and quarterly data on international merchandise trade statistics are an important tool for economic policymaking, business cycle analysis, modelling and forecasting. However, they are often characterized by seasonal fluctuations and other calendar or trading-day effects, which mask other characteristics of the data which are of interest to analysts. Seasonal adjustment is a process of estimating and removing seasonal or calendar influences from a time series in order to achieve a better knowledge of the underlying behaviour. Removing the seasonal component allows for an easier comparison of long- and short-term movements across sectors and countries and further contributes to an understanding of the non-seasonal behaviour which is often of interest for economic policymaking, business cycle analysis, modelling and forecasting. Countries are encouraged to compile and publish, where appropriate, seasonally adjusted monthly and quarterly international merchandise trade data on a regular basis. Because national circumstances vary from one country to another, no preferred seasonal adjustment method is recommended. If seasonally adjusted data is published, it is recommended that information on the adjustment methods, data quality, etc. be provided by countries in their metadata. Further detailed information on seasonal adjustments techniques is available in IMTS 2010-CM chapter XXIX.

Making data meaningful

As a rule, it is fair to say that journalists and statisticians have little in common. Yet, journalists and national statistical organizations are virtually inseparable. Why? Because the general public is an important audience for the statistical organizations, and the news media are powerful tools for reaching this audience.

The challenge for a national statistical organization (NSO) is to help journalists understand the data. Tell them a story. Tell them about the world they live in. Tell them how their numbers help the public understand what they see around them as they drive to work every morning and watch the news on television every night.

What is a statistical story?

On their own, statistics are just numbers. They are everywhere in our life. Numbers appear in sports stories, reports on the economy, stock market updates, to name only a handful. To mean anything, their value to the person in the street must be brought to life.

A statistical story is one that doesn't just recite data in words. It tells a story about the data. Readers tend to recall ideas more easily than they do data. A statistical story conveys a message that tells readers what happened, who did it, when and where it happened, and hopefully, why and how it happened. A statistical story can:

- Provide general awareness/perspective/context;
- Inform debate on specific issues.

In journalistic terms, the number alone is not the story. A statistical story shows readers the significance, importance and relevance of the most current information. In other words, it answers the question: Why should my audience want to read about this?

Finally, a statistical story should contain material that is newsworthy. Ask yourself: Is the information sufficiently important and novel to attract coverage in the news media? The media may choose a different focus. But they have many other factors to consider when choosing a story line.

Thus, statistical story-telling is about:

- Catching the reader's attention with a headline or image;
- Providing the story behind the numbers in an easily understood, interesting and entertaining fashion;
- Encouraging journalists and others to consider how statistics might add impact to just about every story they have to tell.

Do you have a story?

First and foremost, you need a story to tell. You should think in terms of issues or themes, rather than a description of data. Specifically, you need to find meaning in the statistics. A technical report is not a story, nor is there a story in conducting a survey.

A story tells the reader briefly what you found and why it is important to the reader. Focus on how the findings affect people. If readers are able to relate the information to important events in their life, your article becomes a lot more interesting.

Statistical offices have an obligation to make the data they collect useful to the public. Stories get people interested in statistical information and help them to understand what the information means in their lives. After they read good statistical stories, people should feel wiser and informed, not confused.

Themes for statistical stories

Possible topics/themes for stories:

- Current interest (policy agenda, media coverage, etc.);
- Reference to everyday life (food prices, health, etc.);
- Reference to a particular group (teens, women, the elderly, etc.);
- Personal experiences (transportation, education, etc.);
- Holidays (Independence Day, Christmas, etc.);
- Current events (statistics on a topic frequently in the news);
- Calendar themes (spring, summer, etc.);
- New findings;
- A regular series ("This is the way we live now", "Spotlight on xxxx", etc.).

Visualization of statistics

We have all heard the old adage: "a picture is worth a thousand words". One of the best techniques for understanding data is to visualize the numbers as a picture. This can make it far easier to see a pattern or it can expose patterns that might otherwise have been concealed.

You can visualize data in many different ways, from simple bar charts to more complex scatterplots, thematic maps and animated population pyramids. There is also no shortage of technical help: books have been written on visualizing data; there are scores of websites devoted to the subject; and there is a wide range of software and downloadable programs available for every purpose.

Checklist for developing good data visualizations

When producing visual presentations, you should think about:

- The target group: different forms of presentation may be needed for different audiences (e.g. business or academia, specialists or the general population).
- The role of the graphic in the overall presentation: analysing the big picture or focusing attention on key points may require different types of visual presentations.
- How and where the message will be presented: a long, detailed analysis or a quick slideshow.
- Contextual issues that may distort understanding: expert or novice data user.
- Whether textual analysis or a data table would be a better solution.
- Accessibility considerations:
 - Provide text alternatives for non-text elements such as charts and images.

- Don't rely on colour alone. If you remove the colour, is the presentation still understandable? Do colour combinations have sufficient contrast? Do the colours work for the colour blind (red/green)?
- Ensure that time-sensitive content can be controlled by the user (e.g. pausing of animated graphics).
- Consistency across data visualizations: ensure that elements within visualizations are designed consistently and use common conventions where possible (e.g. blue to represent water on a map).
- Size, duration and complexity: Is your presentation easy to understand? Is it too much for the audience to grasp at a given session?
- Possibility of misinterpretation: test your presentation out on colleagues, friends or some people from your target group to see if they get the intended messages.

Tables

Good tables are an integral part of your package, whether this is a news release, an analytical article or a research paper. Using tables effectively helps minimize the number of data values in your text. It also eliminates the need to discuss less significant variables that are not essential to the story line.

In her book on writing about numbers, Miller (2004) gives the following guidelines on how to design good tables:

- Make it easy for your audience to find and understand numbers within your tables.
- Design both the layout and the labelling of your tables in a straightforward and unobtrusive fashion, so the attention is on the substantive points to be conveyed by your data, rather than on the structure of the table.

Charts

Statistics can often be better understood when they are presented in a chart than in a table. A chart is a visual representation of statistical data, in which the data are represented by symbols such as bars or lines. It is a very effective visual tool, as it displays data quickly and easily, facilitates comparison and can reveal trends and relationships within the data.

A chart generally takes the form of a one- or two-dimensional figure, such as a bar chart or a line chart. Although there are three-dimensional charts available, they are usually considered too complex to be easily understood.

Charts can be used to illustrate patterns in a large amount of data or to communicate a key finding or message. You should consider using charts if you want to show:

- Comparison: How much? Which item is bigger or smaller?
- Changes over time: How does a variable evolve?
- Frequency distribution: How are the items distributed? What are the differences?
- Correlation: Are two variables linked?
- Relative share of a whole: How does one item compare to the total?

Checklist for designing a good chart

If you decide that a chart is the most appropriate way to present your data, then no matter what type of chart you use, you need to keep the following three guidelines in mind:

1. Define your target audience: What do they know about the issue?
2. Determine the message you want to communicate: What do the data show? Is there more than one message?
3. Determine the nature of your message: Do you want to compare items, show time trends or analyse relationships in your data?

A good chart:

- Grabs the reader's attention;

- Presents the information simply, clearly and accurately;
- Does not mislead;
- Displays the data in a concentrated way (e.g. one line chart instead of many pie charts); facilitates data comparison and highlights trends and differences;
- Illustrates messages, themes or storylines in the accompanying text.

Maps

Geographic information is an integral part of all statistical data. Geographic areas have boundaries, names and other information that make it possible to locate them on the ground and relate statistical information to them. This spatial relationship is particularly important for census data.

Maps are the most efficient tools to visualize spatial patterns. When carefully designed and presented, they are more than just decorative features in a statistical presentation. They can help people identify and highlight distributions and patterns that might not be apparent from tables and charts.

If “a picture is worth a thousand words”, then “a map is worth a thousand numbers”. In our visual era, maps are a powerful information medium. They serve as valuable decision-making tools for experts, politicians and the general public, and meet a growing demand for information in all parts of society.

Using maps in statistics

Maps can be very useful both in the preparation of censuses and surveys and in the analysis and reporting of results. You should consider using maps if you want to:

- Show the geographical location and spatial distribution of your data;
- Compare different areas;
- Summarize a large volume of data and reduce their complexity;
- Communicate a clear message;
- Validate your findings;
- Attract people’s attention;
- Store spatial information in a geographical information system.

Checklist for designing a good map

Mapmaking is a mixture of art, science and technology. It is a complex task, as there are unlimited possibilities for organizing the layout.

With the growth of Web 2.0 technologies, many interactive mapping tools are available online that allow users to upload their data and retrieve thematic maps instantly. The production of thematic maps has become much cheaper and faster, but it does not automatically result in well-designed maps that communicate your message accurately.

To design a good map, you need to consider the following four guidelines:

1. Define your target audience: How and in which context will the map be used? Are there any accessibility constraints?
2. Determine the message you want to communicate: What do the data show? Is there more than one message?
3. Determine the nature of your data: How many variables should be mapped? Is there a time dimension?
4. Determine the appropriate mapping technique, colours and symbols: What is the nature of your data (quantitative or qualitative, absolute or relative values)? Is there any technical constraint (e.g. format or black and white reproduction)? What are the conventions for colours or classifications?

A good map:

- Is simple and easily understood;
- Has a clear and objective message;
- Gives an accurate representation of the data and does not mislead;
- Attracts the reader's attention to the most important information;
- Is well presented and attractive;
- Fits the output format and your audience;
- Can stand by itself without further explanations;
- Is accessible to colour-blind persons.

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HOW TO CONTACT US

Human Resources Development
Section/TrainForTrade
Knowledge Development Branch
Division on Technology and Logistics
United Nations Conference on Trade
and Development
Palais des Nations,
8-14, Av. de la Paix,
1211 Geneva 10, Switzerland

T: +41 22 917 5512

F: +41 22 917 0050

E-mail: trainfortrade@unctad.org

Web: tft.unctad.org



UNITED NATIONS
UNCTAD