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Impact of global crises on statistical systems

Trade collapse, data gaps and the impact of the financial crisis on official statistics

Note by the World Trade Organization

Summary

Global merchandise trade collapsed in the first quarter of 2009 at an unprecedented rate but not evenly across the globe. Demand for durable goods in developed countries declined with prices of oil and minerals falling drastically. Disruptions affecting trade finance and international supply chains were often quoted as a contributing factor to the steep fall of trade flows. While trade in transport and travel services also dropped, trade in other commercial services showed a higher resilience, slowing relatively less at the beginning (apart from financial services).

Many economists were taken by surprise at these developments while some had warned as early as 2003 that global imbalances may lead to a meltdown of the financial system. While the question of why economists were unable to forecast this global recession is open to discussion, the question that needs to be raised for statisticians is whether the relevant statistics have been provided.

I. Introduction

1. Global merchandise trade collapsed in the first quarter of 2009 at an unprecedented rate but not evenly across the globe. Demand for durable goods in developed countries declined with prices of oil and minerals falling drastically. Disruptions affecting trade finance and international supply chains were often quoted as a contributing factor to the steep fall of trade flows. While trade in transport and travel services also dropped, trade in other commercial services showed a higher resilience slowing relatively less at the beginning (apart from financial services).

2. Many economists were taken short by these developments while some had warned as early as 2003 that global imbalances may lead to a meltdown of the financial system.[1] While it may be discussed why economists' were short of forecasting this global recession, the question that needs to be raised for statisticians is whether the relevant statistics have been provided, that is:

(a) Do statistics describe economic reality adequately? Do statistics offer information that helps monitor the most relevant development of the economic situation,or are they mainly referring to past concepts about national and international economics?

(b) Did the crisis reveal data gaps that indicate structural weaknesses of statistical systems?

(c) If there are information gaps, how should these be addressed? Should non-official sources help to fill this gap?

(d) On the other hand, if statistics did have the right data sets, did it fail "to...explain these in terms that the people can understand"[2]? In other words, is there a need to turn statistics into knowledge for an improved decision-making of politicians?

3. These questions will be discussed further in the context of the World Trade Organization's (WTO's) ongoing monitoring and surveillance of trade developments.

A. More details - the need for disaggregated data

1. Implementation of statistical frameworks

4. Media and policy makers use expressions such as global value chains, vertical trade, trade in intermediates, intra-firm trade or trade costs. Economists speak of trade in tasks and the "new" new trade theory.[3] Analysts of these aspects turn to statisticians to receive information on the impact of international supply chains on trade flows, trade in intermediate goods, the size of intra-firm trade (which is mostly based on anecdotal evidence), or the impact of the crisis on export processing zones, etc. Information on trade flows by mode of transport and preference schemes are additional topics that demand constant attention. Because the crisis was not affecting all sectors identically, it increased the appetite of users for more disaggregated data to identify the impacts at firm or product level.

[1] See Toxische Wissenschaft? – Zur Verantwortung der Oekonomen für die gegenwärtige Krise, A. Heise, in Wirtschaftsdienst, Zeitschrift für Wirtschaftspolitik, 12.2009., and The Dollar Crisis, R. Duncan, 2003.

[2] United Nations Economic Commission for Europe (UNECE), Making Data Meaningful, Part 2, p. 3.

[3] See WTO "World Trade Report: Trade in a Globalizing World", 2008.

5. World merchandise trade statistics are based on the "crossing frontier" principle of customs for recording international transactions. That is, each crossing of the frontier, whether it be an intermediate good that is input into further processing or a final good for end-user consumption, is considered a trade flow.

6. Gross-recorded flows do not lend by themselves to the analysis of above mentioned analytical questions. For example, it is very difficult to establish an estimate of the size of intra-firm trade worldwide, in fact, in the literature only anecdotal evidence is floating putting it to a third of world trade flows in merchandise. Further, trade flows measured (or, better say, estimated) in value added terms to analyse what value is created in the country and which sector contributes to this creation requires linking of trade statistics with input-output tables. These input-output tables are not readily available on a cross-country comparable form and do not provide information at firm level.

7. The consequences of the revision of the Balance of Payments (BOP) relocating goods for processing to manufacturing services on inputs owned by others (from goods to services) are not yet fully known with respect to the discussion on value added. While net recording may contribute to a better analysis of value added, it is feared that this change may contribute to losing information on this phenomenon in some countries, in particular for the purpose of establishing suitable input-output tables. The options suggested are to produce two sets of input-output tables, or to keep on recording supply-use tables on a gross basis, and conciliate economic statistics with BOP conventions at a latter stage when establishing the national accounts.

8. As for analysing trade costs, measuring trade by mode of transport is crucial. In fact, the monitoring of trade flows according to trade in tasks is demanding a decomposition of trade flows by modes of transport. However, not many countries provide this information in a systematic way in their regular dissemination programmes. While the new International Merchandise Trade Statistics (IMTS) Manual 2010 is reinforcing some of the needs from a conceptual point of view by recommending recording of trade sent/received for processing, detailing trade flows by mode of transport, or recording trade between related parties, it is up to countries to implement the recommendations and collect the information.

9. However, many developing or transition countries are still struggling to fully implement the System of National Accounts (SNA) 1993, and these new issues may not receive their priority in data collection and dissemination programmes. The increased demand for this information, spelled out by information needs of users during the crisis, may stimulate and redirect statistical budgets into that direction to improve data availability for the analysis of these questions.

B. Data gaps - faster availability of analytically relevant data?

1. High-frequency data

10. During the crisis, the demand for high-frequency statistics on trade in goods and services, quarterly or monthly, comparable across countries, increased exponentially. Not only for the countries total exports and imports as a start, but also for their trade flows broken down by major trading partner and/or product for the analysis of regions and sectors. Related statistics such as industrial production, foreign trade prices, were equally in demand. These increased data needs seemed not to be matched by a respective international, freely available database.

11. As a response, the international statistics systems set up respective coordination mechanisms to identify data gaps, analyse availability, periodicity and timeliness of high frequency statistics in accessible and analytically useful formats[4]. Political pressure, for example from G20, helped to implement such initiatives[5].

12. Accessibility should however be complemented with improving data quality. Full implementation of international standards across countries (including the respective revisions of international classifications) of concepts and definitions of merchandise trade statistics, help to provide not only more frequent data (monthly), but also more detail in terms of products distributed by origin, and destination. Information on trade in constant prices was and still is more difficult to collect. However, in times of crisis it is even more relevant to separate price (exchange rate) movements from volume developments.

13. For trade in services, while current values for quarterly trade developments are available only for major countries, for most developing countries this information is absent. The lack of disaggregation is particularly acute in this sector as well as the absence of trade data by major partner country or in constant prices. While this is often compensated by the use of quantitative or key performance indicators to judge market developments, a widespread, up-to-date database comparable across countries is not available either.[6] Often, the information used is not produced in official statistics, such as data from business associations (on construction, professional services, etc.).

14. While high-frequency data requirements on merchandise trade statistics were partially satisfied by providing a new database on short-term statistics on WTO's website[7] which traces the countries monthly data releases online and collects the respective data, these requests were accompanied by demands for more detail. Trade flows are a global gross measure and the crisis revealed another structural weakness of the official statistics on trade.

2. Now - and forecasts - what is going to happen?

15. The press was not only looking for backward-measured indicators but also for estimates of current-year developments or forecasts covering a number of years. While this demand is not only linked to crisis' years, requests for it were increasing. While official statistics do provide backward-oriented statistics with a time lag, non-official sources more easily use preliminary data and alternative data sources to describe short-term developments.

3. Trade finance - what existed once is what is needed once again

16. Up until 2003, trade finance (trade credit and insured trade credit) statistics were published in the Joint Hub on External Debt Statistics of the International Monetary Fund (IMF), World Bank, the Bank for International Settlements (BIS) and the Organisation for Economic Co-operation and Development (OECD). Apparently, cost-quality ratios caused their discontinuation. At present, the only available source is the Berne Union of export credit agencies. It collects from its 100 members quarterly data on insured trade credits (perhaps 5 to 10% of total trade credits). This data is used by the *BIS* in its on-line database.

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[4] The Statistics Newsletter, Issue No. 46, October 2009.

[5] See for example the inter-agency database at http://www.principalglobalindicators.org

[6] The WTO has started such a database, however, this database is available for some 60 countries only and suffers of the lack of available indicators on a timely basis.

[7] See WTO Resources – trade and tariff statistics http://www.wto.org/english/res_e/statis_e/quarterly_world_exp_e.htm

17. Information on trade finance is crucial to analyse constraints affecting international trade. The international community has been progressively deprived of a comprehensive and reliable source of information on trade credit supply, despite its key role in trade operations. Most of short-term trade credit transactions are now lost in the "black hole" of inter-bank lending cross-border movements. The issue is therefore to provide again hard data on trade finance derived from balance of payments or from cross-border banking data generated by the BIS.

18. A very large share of international trade requires some form of credit, insurance or guarantee. This stems from the fact that international trade involves particular forms of commercial risk relative to domestic trade: payment risk,[8] risks related to the value of the expected payment linked to possible fluctuations of the exchange rate or the price of commodities, transportation risk. Exporters and importers are unwilling to bear such risk, which is traditionally assumed by banks.

19. The payment of international trade has historically relied on a relatively standard, securitized lending instrument – the letter of credit. Importers, which will eventually pay the exporter at delivery (at the earliest) ask their banks to extend a guarantee to pay the exporter's bank against specific documentation or a collateral. Against these, the exporter's bank will endorse the letter of credit as a guarantee of payment. In turn, they can extend lending to the exporter, for example in the form of working capital to produce the goods for export. Other instruments such as promissory notes and bank acceptances are recognized as similar securities involving an obligation to pay. Given the small likelihood of payment default on international trade operations, these securities are traded on the secondary market and are usually highly regarded by investors. According to the Bankers' Association on Trade and Finance (BAFT) and the International Chamber of Commerce's (ICC) banking commission, most trade credit flows, in particular letters of credit, are short-term, reflecting the one to three months' average delivery lead-times in international trade.

20. For a decade, with the fragmentation of the value-added process across countries through international supply-chain operations, multinational firms tried to speed up the payment and credit cycle at the various stages of the import and exports of parts and finished products. Instead of relying on documented credit, which involves a comprehensive check of documentation, firms asked their banks to handle their flows of receivables and payables across the value-chain process – and possibly net it out. This involved banks accepting to take-up the payment risk on behalf of their customers, by automatically rediscounting receivables against liquidity provided to their clients. With the large availability of liquidity internationally, so-called trade financing in "open account" developed rapidly. According to BAFT and ICC survey conducted during the peak of the crisis, letters of credit and open account financing represent a roughly equal share of trade credit provision (secured and unsecured lending), although these surveys are only qualitative in nature (there are no hard numbers).

21. A large part of the international statistical reporting system is relying on the definition of trade credit as being a letter of credit or a bank acceptance issued or endorsed by a bank (Balance of Payments Manual 5th and 6th editions (BPM5 and BPM6)). For that reason, data collected internationally are not reliable as it does not take into account open account trade financing. Besides, banks have poorly reported flows of letters of credit – and these flows are probably dissolved somewhere and aggregated to other inter-bank lending data (an endorsement of a letter of credit by the endorsing bank is counted as such).

[8] Payment risk, since almost none of international trade is paid cash.

22. There is also a longer-term segment to trade credit (2 to 5 years generally or plus), which involves investment goods and large equipment (aircrafts...). Such credit is most generally securitized and benefit from the coverage of trade credit insurance, which are either provided by private players (Llyods, Swiss-re, American International Group (AIG)) or national credit agencies (COFACE, US EXIMBANK).

23. A growing but still small proportion of short-term credit is also subject to trade insurance. The players indicated above are providing such short-term credit insurance at market rate (with no government guarantees).

24. There is a set of statistics for insured trade credit, collected by the professional association of export credit agencies, private or public-owned, the Berne Union. Outstanding amounts of insured credit are collected quarterly, but, according to the Berne Union Secretariat, account for a limited part of trade credit internationally, simply because it entails large costs, which adds up on the banking fees charged to importers and exporters for handling letters of credit or open account transactions. Insurance might account for less than 10% of world trade finance.

25. All in all, the state of existing statistics on trade finance is not satisfactory and was missed by analysts in the past years, both for the analysis of short-term and long-term trends of the markets. Collecting trade credit would be of considerable value for policy analysis.

26. In 2008, severe supply shortages for trade credit were identified by the WTO. Anecdotal evidence from trade finance providers indicated that liquidity constraints had reduced the ability of leading banks to finance trade, at a time when the secondary market for trade bills seized up. Similar problems on a smaller scale had been observed previously during the Asian crisis. Existing Balance of Payments data could not be used for analysis because they are not consolidated and not very comprehensive in coverage. To fill the information gap in 2008, the IMF and the International Chamber of Commerce conducted fairly costly global but partial market surveys. On this basis exceptional and extensive official liquidity support was made available for trade credit purposes.

27. Since 2005, for the Joint External Debt Hub, the BIS has provided quarterly data on trade credit insurance, compiled by the Berne Union. During the crisis, the WTO analyzed these data, but found that they were not comprehensive enough to proxy accurately banks' total provision of trade credit. The concern is that during crisis times, exporters' risk aversion rises, shifting the boundary between insured and un-insured trade credit to the advantage of the former, thus obscuring the possible extent of a liquidity squeeze in the data reported by the Berne Union.

28. The WTO proposal therefore was to ask central banks to slightly expand their reporting to the BIS banking statistics to provide an "of-which" item on short-term bank credit related to trade financing. This is seen as providing superior information at much lower cost than would be possible with a continuation of ad hoc surveys. [9]

29. Reporting of this sub-item could be envisaged either in the *locational* (by residence) or in the *consolidated* banking statistics. Technically, the costs to the BIS are similar and rather low for both solutions. According to the WTO, major international banks are showing willingness to supply data on a regular basis. Including this reporting into an existing regular reporting system would also seem to be the most cost-efficient solution for banks. Since trade credit will gain a specific risk weighting in regulatory reporting, exact definitions and internal reporting systems should be available without additional cost.

[9] At the time of writing, signals indicate a reintroduction of this statistical programme.

Moving from ad-hoc crisis surveys to regular reporting would also provide time series as benchmarks for qualitative surveys and a clear background for analytical research.

(a) The advantage of reporting in the *locational* system is the currency breakdown of the data. Short-term fluctuations due to exchange rate movements could be corrected and changes in the currency denomination of trade finance could be monitored.

(b) The advantage of reporting a trade credit sub-item in the *consolidated* statistics are:

(i) The provision of trade credit by consolidated bank groups (by country) could be monitored;

(ii) Short-term bank credits are already reported, so an of-which on "trade-related" short-term credit would fit naturally into this reporting system, as could additional information on trade credit commitments;

(iii) Since trade and credit data are both reported in United States dollars (USD), temporary currency fluctuations would cancel out in the ratio. Comparative measures of economic activity are also reported in USD.

C. Official statistics and non-official data sources

30. Private data sources become more important during crisis times. In the absence of official data and under the pressure of time, users (journalists as well as politicians) turn to private data sources to find real-time information. As for some domains no information was available (trade finance), private data sources stepped in to report the latest data, for example, by either carrying out surveys or collecting national data through fast access (e.g. monthly trade statistics by country, partner, and product distribution). Although these statistics are reported by national authorities, there is either a considerable time lag as to their processing by international organizations, or there is no comprehensive database that helps disseminating these flows. Private databases close this gap as their business model allows getting fast access to the data and subsequent processing and dissemination through payment.

31. For example, up-to-date trade flows by origin and destination could be found in private databases, while sources of data on international transportation could be gathered from business sources (port authorities or chambers of commerce). A similar situation occurred for the trading environment.

32. In some instances, non-official data providers (chambers of commerce or similar business organizations) are the only source for information of great relevance for monitoring the international economic context. For example, data on the shipping cost on specific maritime routes – a very pro-cyclical indicator often used to nowcast the strength of international trade – are only available through non-official sources. Similarly, most key financial indicators, starting with stock exchange indexes, are produced by non-official statisticians.

33. Private databases have also been collecting material on protectionist measures. For trade finance, survey-based data of the International Chamber of Commerce (ICC) and the Bankers Association on Finance and Trade helped to provide estimates. More recently, the ICC in collaboration with Society for Worldwide Interbank Financial Telecommunication (SWIFT) collected information on letters of credit -- although SWIFT data come at a fee.

That is, in a situation where operators had to take quick decisions, non-official data sources had to fill the gaps left by official statistics.[10]

34. During the last crisis, official statistics initiated a number of efforts to close the gap from an official statistics side. Examples are the Global Impact and Vulnerability Alert System (GIVAS) (United Nations/Department of Economic and Social Affairs) which was put in place to build up a mechanism that helped disseminating high-frequency data from various organizations. The strategy was to focus on systemic countries (risk analysis) to be able to provide early warnings.

D. Turn statistics into knowledge

35. Sometimes, the limiting factor for decision makers is not the lack of data, but the over-supply of seemingly correlated indicators that blur the underlying trend. Because economic factors are of increasing complexity and should be approached from a multi-faceted angle, turning this mass of data into knowledge is a critical issue.

36. It is important to make official statistics a robust system that can incorporate multi-dimensional changes in a constantly developing societal and economic environment, and extract meaningful and understandable signals out of them. An example of such a systemic arrangement of economic statistics that emerged after the Great Depression of the 1930s is the System of National Accounts. Boiling-down production, consumption, investment and trade data into a single indicator, the Gross Domestic Product, provided decision makers with an easy to use and easy to understand indicator of the national economic cycle. The irruption of globalization into the everyday life of most economic agents, be they producers or consumers, call for a similar effort to extract similar "signals" out of the international economy statistics. It is not the place here to tackle such a challenging task, but a couple of examples could be identified from international trade.

37. First, take into consideration that modern business models spread production over several countries. Through international supply chains, trade in tasks has been progressively substituting trade in goods, at least for manufactures. Measuring the domestic content of trade is now an urgent priority to understand exactly what is at stake when national authorities review their national trade policy. Similarly, national actors participating directly or indirectly in these global supply chains have in general different characteristics in respect of firm size, labour qualification, remunerations than the rest of the population. Present economic statistics do not allow to easily identify all these characteristics in an easy way. For example, a large share of the value added incorporated in manufacture exports from developed countries originates in fact in their services sector, considered usually as non-tradable. We recommend therefore the construction of some kind of "satellite account" of the exporting sectors, similar to the "tourism satellite accounts" to put and relate into a single place all the relevant information dealing with the international trade activity and their domestic actors.

38. Another aspect is the development of messages or "factual story lines" built on existing statistics to assess developments of economies and support analysis. "Evidence-based decision-making" is crucial as D.J. Johnston, Secretary-General of the OECD points out.[11] Current statistical dissemination practices centre around providing data in interactive databases or spreadsheets. While it is useful to summarise data available across

[10] For a more detailed discussion of non-official data sources in imputations, see Escaith, H., Use of non-official data in imputations/estimations made by international organization, Committee for the Coordination of Statistical Activities (CCSA), September 2009.

[11] OECD Observer, No. 246-247, December 2004-January 2005.

international agencies in a single database, interpreting these data in a context for a laymen to understand is of utmost importance. Given advances in technology, statistics producers may go the extra mile in complementing their statistics by providing "stories" alongside.

39. In this context, it may even be of assistance to form global public-private partnerships to develop tools that help visualise underlying trends and patterns in statistics. OECD's example with the National Center for Visual Analytics (NCVA) Research Institute of Sweden is an impressive case in question. In turn, media can play its own improved role to communicate such stories to the broad public in general.