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

Andreas Maurer, Hubert Escaith and Marc Auboin[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 cited 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 more resilience (apart from financial services).

Many economists were caught short by these developments, while some had warned as early as 2003 that global imbalances might lead to a meltdown of the financial system.[2] While we may ask why economists failed to forecast this global recession, the question for statisticians is whether relevant statistics have been provided, that is:

1. Do statistics **describe economic reality adequately?** Do statistics offer information that helps monitor the most recent economic developments?
2. Did the crisis reveal **data gaps** that indicate structural weaknesses of statistical systems?
3. If there are gaps, how should these be addressed? Should **non-official sources** be used to fill this gap?
4. On the other hand, if the right data sets were compiled, did statistics fail "to...explain these in terms that the people can understand"?[3] Is there a **need to turn statistics into knowledge** for an improved decision-making of politicians?

These questions will be discussed further in the context of the WTO's ongoing monitoring and surveillance of trade developments.

1. More details – the need for disaggregated data

Implementation of statistical frameworks

Media and policymakers 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.[4] 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 or the impact of the crisis on export processing zones, etc. Trade flows by mode of transport and the use of preference schemes are additional topics that demand

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1 This paper represents the opinion of the authors; it is not meant to represent the position or opinion of the WTO or its Members, nor the official position of any staff member.

2 Heise, A (2009) and Duncan, R (2003).

3 UNECE (2009), p 3.

4 WTO (2008).

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.

World merchandise trade statistics are based on the "crossing borders" principle of customs for recording international transactions. That is, each crossing of the border, 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. Intermediates may cross several borders before being included in a good for final consumption in the destination country. Thus, trade flows are a global gross measure, and the crisis revealed this structural weakness of the official statistics on trade as regards their economic interpretation.

Gross recorded flows do not lend themselves to the analysis of the 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 provided, putting it at a third of world trade flows in merchandise. Further, measuring (or, better say, estimating) trade flows 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 in a cross-country comparable form; in addition, sectoral averages may not provide adequate information for the type of firms more actively engaged in export activities (an issue related to firm heterogeneity).

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 to reconcile economic statistics with BOP conventions at a later stage, when establishing the national accounts.

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 IMTS2010 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.

However, many developing or transition countries are still struggling to fully implement the SNA 1993, and these new issues may not receive priority in data collection and dissemination programmes. The increased demand for this information, resulting from the information needs of users during the crisis, may change the priorities of statistics budgets, emphasizing the importance of improving data availability for the analysis of these questions.

2. Data gaps – faster availability of analytically relevant data?

High-frequency data

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 and foreign trade prices, were equally in demand.

There did not seem to be a freely available international database that could meet these data needs

In response, the international statistics systems set up coordination mechanisms to identify data gaps and analyse availability, periodicity and timeliness of high-frequency statistics in accessible and analytically useful formats.[5] Political pressure, for example from the G20, helped to implement such initiatives.[6]

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 helps 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.[7]

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.[8] Often, information not produced in the official statistics framework – such as that obtained from business associations (construction, professional services, etc) – is used.

While high-frequency data requirements on merchandise trade statistics were partially satisfied by providing a new database on short-term merchandise trade statistics on the WTO's website[9] – the WTO traces countries' monthly data releases online and collects the respective data – requests were often accompanied by demands for more detail.

Now- and forecasts – what is going to happen?

The press is looking not only for indicators measuring backward developments but also for estimates of the current-year development or even forecasts covering a number of years. While this demand is not linked only to the crisis years, requests are increasing. Whereas 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.

Trade finance – what existed once is what is needed once again

Up until 2003, some trade finance (trade credit and insured trade credit) statistics were published in the Joint Hub on External Debt Statistics of the IMF, the World Bank, the BIS and the OECD. Cost-quality ratios seem to have caused their discontinuation. At present, the only available source is the Berne Union of export credit agencies. It collects from its

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5 OECD (2009).

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

7 Silver, Mick (2010).

8 The WTO has started such a database for around 90 countries.

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

100 members quarterly data on insured trade credits (perhaps 5 to 10% of total trade credits). These data are used by the BIS in its online database.

Information on trade finance is crucial for the analysis of constraints affecting international trade; however, the international community has no comprehensive and reliable source of information on trade credit supply, despite its key role in trade operations. Most short-term trade credit transactions are now lost in the "black hole" of interbank lending cross-border movements. The issue is therefore to provide hard data on trade finance derived from balance of payments or from cross-border banking data generated by the BIS.

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,[10] 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.

The payment of international trade has historically relied on a relatively standard, securitised 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 collateral. Against these, the exporter's bank will endorse the letter of credit as a guarantee of payment. In turn, importers 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 recognised 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.

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 export 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, the so-called trade financing in "open account" developed rapidly. According to a BAFT and ICC survey, conducted during the peak of the crisis, letters of credit and open account financing represented roughly equal shares of trade credit provision (secured and unsecured lending), although these surveys were only qualitative in nature (there are no hard numbers).

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 (BPM5 and BPM6). For that reason, data collected internationally do 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 interbank lending data (an endorsement of a letter of credit by the endorsing bank is counted as such).

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

There is also a longer-term segment to trade credit (two to five years or more, generally), which involves investment goods and large equipment (eg aircraft, ships). Such credit is most generally securitised and benefits from the coverage of trade credit insurance, which is provided either by private players (Lloyds, Swiss Re, AIG) or by national credit agencies (Coface, US Ex-Im Bank).

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 rates (with no government guarantees). Statistics on insured trade credit are collected by the professional association of export credit agencies, both privately and publicly owned, the Berne Union. Outstanding amounts of insured credit are collected quarterly, but, according to the Berne Union Secretariat, account only for a limited part of trade credit internationally. Insured trade credits entail large costs, which add to the banking fees charged to importers and exporters for handling letters of credit or open account transactions. This insurance might account for less than 10% of world trade finance.

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

In 2008, severe supply shortages of 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 were 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.

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 uninsured 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.

The WTO proposal therefore was to ask central banks to slightly expand their reporting in the BIS banking statistics by providing 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.[11]

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 in 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. 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.

[11] At the time of writing, discussion on a possible reintroduction of this statistical programme is under way.

- 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.
- The advantages of reporting a trade credit sub-item in the *consolidated* statistics are:
  - The provision of trade credit by consolidated bank groups (by country) could be monitored.
  - 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 would additional information on trade credit commitments.
  - Since trade and credit data are both reported in USD, temporary currency fluctuations would cancel out in the ratio. Comparative measures of economic activity are also reported in USD.

3. Official statistics and non-official data sources

Non-official 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 non-official (private) data sources to find real-time information. As for some domains where 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 (eg monthly trade statistics by country, partner and product distribution). Although some of these statistics may be reported by national authorities, there is either a considerable time lag as to their processing by international organisations, or there is no comprehensive database that helps disseminate these data. Private databases close this gap as their business model through payment allows getting fast access to the source data with timely subsequent processing and dissemination.

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

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

Private databases have also been collecting material on protectionist measures. For trade finance, survey-based data of the ICC and the BAFT helped to provide estimates. More recently, the ICC, in collaboration with SWIFT, collected information on letters of credit – although SWIFT data come at a cost. 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.[12]

[12] For a more detailed discussion of non-official data sources in imputations, see Escaith, H (2009).

During the last crisis, official statistics agencies initiated a number of efforts to close the gaps. Examples are GIVAS (UN/DESA), which was put in place to build up a mechanism that helped disseminate high-frequency data from various organisations. The strategy is to focus on systemic countries (risk analysis) to be able to provide early warnings.

4. Turn statistics into knowledge

Sometimes, the limiting factor for decision-makers is not the lack of data, but the supply of indicators that blur the underlying trend. Because economic factors are of increasing complexity and should be approached from a multifaceted angle, turning this mass of data into knowledge is a critical issue. That is, it is not only important to adapt statistics or their interpretation in the context of economic developments, but also to combine data in integrated accounts to derive "knowledge". This is not the place to tackle such a challenging task, but a couple of examples could be identified from international trade.

First, take into consideration that modern business models spread production over several countries. Through international supply chains, trade in intermediate products has increased. 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 qualifications and remunerations than the rest of the enterprise population. The present economic statistics do not allow us to identify all these characteristics easily. For example, a large share of the value added incorporated in manufacture exports of developed countries originates in fact in their services sector, considered usually as non-tradable.

Second, official statistics as a robust system should incorporate multidimensional 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 or integrated accounts 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, calls for a similar effort to extract similar "signals" out of the international economy statistics. 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 in a single place all relevant information dealing with international trade activity and its domestic actors.

An additional 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 DJ Johnston, Secretary-General of the OECD, points out.[13] Current statistical dissemination practices centre around providing data in interactive databases or spreadsheets. While it is useful to summarise data available across international agencies in a single database, interpreting these data in a context that a layman can understand is of utmost importance. Given advances in technology, statistics producers may go the extra mile in complementing their statistics by providing "stories" alongside. In turn, the media can play their own role in communicating such stories to the broad general public.

[13] OECD (2004).

References

Duncan, R (2003), *The Dollar Crisis*, Wiley.

Escaith, H (2009), "Use of non-official data in imputations/estimations made by international organizations", Committee for the Coordination of Statistical Activities, internal document, September.

Heise, A (2009), Toxische Wissenschaft? – Zur Verantwortung der Ökonomen für die gegenwärtige Krise, in: *Wirtschaftsdienst, Zeitschrift für Wirtschaftspolitik*, December.

OECD (2004), *Observer*, No. 246-247, December 2004–January 2005.

OECD (2009), *The Statistics Newsletter*, Issue No. 46, October.

Silver, Mick (2010), "Accurate Trade Data Key to Understanding Depth of Crisis", *IMF Survey Online*, 10 March.

UNECE (2009), *Making Data Meaningful, Part 2, A Guide to Presenting Statistics*, United Nations.

WTO (2008), "Trade in a Globalizing World", *World Trade Report 2008*.