

Statistics used by the BIS in monitoring and research of the economic and financial crises

A note presented by Gert Schnabel¹ at the "International Seminar on Timeliness, Methodology and Comparability of Rapid Estimates of Economic Trends"
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It is both an honour and a pleasure to give a short presentation on the work undertaken in the Monetary and Economic Department (MED) of the Bank for International Settlements in conjunction with the eruption and consequences of the financial crisis in August 2007. The topic of this seminar is of particular relevance, and I foresee that the outcome will prove a valuable point.

Naturally, the BIS has a focus on data that are relevant for the community of central banks; its function is to promote cooperation of central banks in basically all areas where central banks consider this important. It acts as a bank but also – and this is what the presentation is about – as a center of economic research, as well as a secretariat, which monitors economic developments and provides direct input for central bank governors and senior officials.

The crisis has not only enhanced the demand for timely and comparable data both concerning more timely availability of already monitored series, but has also led to a shift in the focus of data to be looked at. This point is valid for the monitoring, as well as the research activities – arguably – failure of past economic models has opened new areas of research fields.

Within MED, the financial market crises has triggered an adjustment in business direction, with a special focus placed on various aspects of the financial crisis with the aim to get a better understanding of its unfolding dynamics and of its longer-term implications for the financial system and policy framework. This work includes, in particular: (a) an intensified monitoring, (b) an intensified policy-oriented analysis.

This short note will cover three topics: (i) the monitoring of financial and macroeconomic indicators; (ii) some recent research initiatives within the research units and, (iii) data sources and one timeliness issue.

Monitoring

1. Financial institutions are taking steps to improve their risk measurement and risk management system, although some would say that it is in a sense too late as the risky behaviour of the past probably will not be seen again for years to come. Central banks, have in some cases taken extraordinary measures to provide liquidity to domestic money markets; they have also helped to liquidify banks' assets; they have acted as lender of last resort to distressed financial institutions and finally have helped to facilitate cross-border liquidity management of banks through swap lines between central banks.

Against this background, monitoring financial market and financial institutions at the BIS comprises on a daily basis of:

- a. graphing and tabling of standard financial market indicators like money market rates, policy rates, FX swaps spreads, equity indices (eg banks and life assurance companies) and with increasing importance CDS spreads.

On a regular, but less frequent basis, monitoring of:

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- i. Central bank balance sheets with their open market and credit operations with the focus of maturity, collateralisation, currency used and bidding behaviour in central bank auctions;
- ii. credit markets developments (sovereign bond markets with the analysis of yields and volatility);
- iii. information on Central bank decisions (interest rate decisions, new tools etc);
- iv. information on bank rescue packages (collection of factual information on a continuous and timely basis);
- v. information on sources of banks' and other financial institutions' performances;
- vi. timely –monthly - information on cross-border flows of bonds and equities;
- vii. other financial market news.

The purpose of this exercise is to try to have a broader or more comprehensive picture of all the events that have taken place since the onset of the crises.

2. In the area of macroeconomic monitoring, the baseline set of series looked at has not really changed.

- Real GDP, capacity utilisation, industrial production, world trade, commodity markets/prices, transportation costs, consumer/producer prices, unit labour costs, unemployment rates, housing indicators, exchange rates (spot and effective) and foreign exchange reserves are the main indicators followed on a continuous basis (ie corresponding commented graphs and tables are provided to CB officials and BIS management upon request).
- Within the set of macroeconomic indicators, survey data – like the Purchasing Managers' indices, consumer and business confidence indicators – gain more and more importance to monitor output and demand and tend to be used more frequently than official production and order indices given their timeliness and possible leading indicator properties. Worth being mentioned is also the current focus on and search for monthly data on inventories, which are not available for many countries
- Forecasts on major economic variables (eg Consensus forecasts) have always been monitored but their relative importance among in the set of indicators has – arguably – increased in times of uncertainty and volatility
- In general, following the - perhaps stronger than expected/hoped - impact of the financial turmoil on the real side of the economy, we currently see within the BIS a stronger focus on monitoring of short-term macroeconomic statistics including trade (given the currently fastest drop in trade since World War II)
- The coverage of the monitored countries is global; and includes major advanced and emerging countries

Research

It is highly probable that due to the current financial crisis and the severe synchronised economic downturn, historical data will prove to be a poor reference for the future. Future business cycles will certainly be different. Given these general considerations, various projects directly related to the crisis are underway or *will* be undertaken.

1. As an example, a project on "*The market reaction to bank rescue packages*" has recently been done. The paper reviews the market reaction to government rescue packages announced in six countries between October 2008 and January 2009 using an event study methodology. The study distinguishes the impact on creditors as seen in the movement of CDS spreads from the impact on shareholders as seen in the reaction of bank stock equity prices. The authors examined both the reaction of the overall banking sector to the announcement of rescue packages and the reaction of individual banks to targeted policy interventions. Government actions prevented distress at key banks, and benefitted creditors at the expense of shareholders. Despite a brief positive reaction, bank stock equity prices continued to fall following the announcements suggesting investors did not view this event as a buying opportunity. The stock prices of banks receiving support, significantly underperformed banks *not*

receiving support. Creditors reacted more positively, with CDS spreads narrowing on the announcements and then continuing to narrow in four out of six countries with no distinction between banks receiving support and those not receiving support.

2. One of the outcomes of the Autumn 2008 events was a collapse in consumer durable spending in the industrialised market economies that quickly spread in late 2008 to the emerging world as trade volumes fell and capital flows reversed. Various other projects are thus in the pipeline that should examine the timeline, policy responses and impacts across Asia and partly based on BIS banking statistics looking at the sudden stops and monetary policy responses in Asia. As the easy credit conditions were an important factor of this crisis the macroeconomic causes and consequences of credit crunch and some global costs of the crisis are further interesting fields of research. Finally as the monitoring of Central bank balance sheets is another important aspect, a study group already examined how central banks adapted their liquidity operations in response to the emergency of money market tensions in early August 2007 and how effective those responses were. In all of these mentioned projects, it is turning out that a wide range of standard macroeconomic and monetary aggregates, BIS international banking statistics, global factors dates and characteristics of banking crises will be needed.
3. In the area of financial markets, work has been done on “Global financial imbalances” and on “Credit and liquidity risk” where daily CDS spreads, equity prices, property prices, macroeconomic indicators, as well as again, BIS international banking statistics were used. As the banks were at the centre of the financial system, future work will focus on a revision or an update of work done on some early banking warning indicators, on an analysis of potential sources of vulnerabilities of the banking sector and on some comparison between the Nordic banking crisis, its lessons, and the current banking crisis. For all these projects sufficiently long time series of banks’ balance sheet data, consistent credit and monetary aggregates and comprehensive data on the rating and pricing of structured products (consistent time series, information on all tranches of a product, etc) will be needed.
4. For the Committee on the Global Financial System (CGFS) various reports were already produced and published last year, which highlighted a number of risks, including short-term risks associated with the unwanted expansion of arranger banks’ balance sheets due to undistributed leveraged loans, medium-term risk resulting from the refinancing needs of highly leveraged corporations and long-term risks for the availability of leveraged finance. While emphasising that credit rating information should support, not replace, investor due diligence, one report provides a number of specific recommendations on how the information provided on ratings of structured finance products could be improved.

Data sources used

For the *standard financial market data*, timely daily series are needed and in terms of sources most of this information can be found on Financial Reuters (Datastream) and Bloomberg. Markit (CDS), Bureau van Dijk Bankscope (Bank balance sheets), Morgan Stanley, Moody’s and others, offer specific datasets used by the BIS for monitoring and research purposes with different needed frequencies. Regarding timely bank balance sheet information we have to tap Bloomberg in a time-consuming (ie bank per bank) way to identify the sources of banks’ losses in a timely way.

For the *macroeconomic indicators*, national statistical offices, international organisations (like IMF, OECD) and central banks are the most important providers, but commercial data providers (Datastream, Bloomberg, Consensus forecasts) are as important as well especially in terms of timeliness and convenient download possibilities (Datastream offers an Excel add in). Monthly or quarterly data are mainly needed.

In addition we, naturally, draw a lot on statistics provided by central banks, for example, information on central bank balance sheets and on the statistics that the BIS aggregates compiles itself, mainly based on data reported by central banks ie consolidated and locational cross-border statistics.

It should be highlighted that, for the BIS, whose research and monitoring output is always targeted at cross-country or global developments, it is particularly useful to have harmonised/comparable definitions across countries, in order to be able to aggregate data in a meaningful way and respectively allow appropriate cross-country comparisons.

The issue of timeliness; an example

Finally, I would like to give an example of our practice which somehow highlights the importance of timely data during the crisis and at the same time highlights the risk of enforcing timeliness at the expense of quality.

Since early 2006, the BIS has decided to publish on its own website, calculated effective exchange rates, (nominal (NEER), and real (REER)), which were calculated and used before, only for internal purposes. This methodology can be found on the BIS website. Until early 2009, the BIS published, its advance REER monthly estimate soon after the end of the month for its basket of 54 countries, but *before* the release of CPI data for most countries. To address the CPI data unavailability, the BIS used an extrapolation method assuming a random walk for the 12-month CPI growth rate, (ie the extrapolation method was based on the most recently available 12-month CPI growth rate data).

An empirical question naturally arises about the accuracy of the assumption of a random walk. Statistical tests suggested, however, that this assumption was not too far off especially in an environment with low volatility and low inflation rates. However, end-2007 the economic environment changed with a general increase in consumer price inflation and the extrapolation technique for the CPI gave way to wrong signals for some countries. Tests with various different extrapolation techniques were undertaken, but it turned out that the best result was simply to delay the release date by two weeks, as it would allow some CPI data for the a large number of countries.

In the Annex, some additional BIS specific statistical issues are listed with some directly connected with this seminar. Please see page that follows:

Annex

Data and data gaps are identified and addressed through different channels:

- (i) in cooperation with central banks bilaterally or through special Task Forces of the respective Basel-based groups;
- (ii) in the regular meetings of the Experts on International Financial Statistics and of the Data Bank Experts;
- (iii) at meetings organised by the Irving Fisher Committee on Central Bank Statistics;
- (iv) through various international groups of which the BIS is formally member (Inter Agency Group on Economic and Financial Statistics, Inter Agency Task Force on Finance Statistics, Working Group on Securities Databases, SDMX);
- (v) at various international statistical meetings at which the BIS is represented (e.g. at the IMF, OECD and ECB);
- (vi) through contacts with researchers and statisticians at central banks, international organisations, market participants and universities.

The following projects are currently underway to identify and address data gaps:

- (i) review of the OTC derivative statistics and credit risk transfer statistics by a CGFS Task Force – a report is expected by June 2009 with implementation for the semi-annual survey of OTC derivatives and triennial survey of fx and derivate markets by the end of 2009;
- (ii) the publication of the Handbook on Securities Statistics in May and its implementation for the BIS international and domestic debt securities statistics by early 2010;
- (iii) meetings of the Irving Fisher Committee on Central Bank Statistics in August (Durban), including to further discuss data gaps related to the financial crises;
- (iv) contributions to meetings of the Inter Agency Group on Economic and Financial Statistics in June and November 2009, at which data gaps will be further discussed;
- (v) the regular meetings of the BIS Data Bank Experts and of the Experts on International Financial Statistics at which gaps in existing data or new datasets are to be discussed;
- (vi) joint work with the IMF as a follow-up to FSB/G20 recommendations on identifying and addressing possible data gaps;