IRVING FISHER COMMITTEE
ON CENTRAL-BANK STATISTICS

# *ifc Bulletin*

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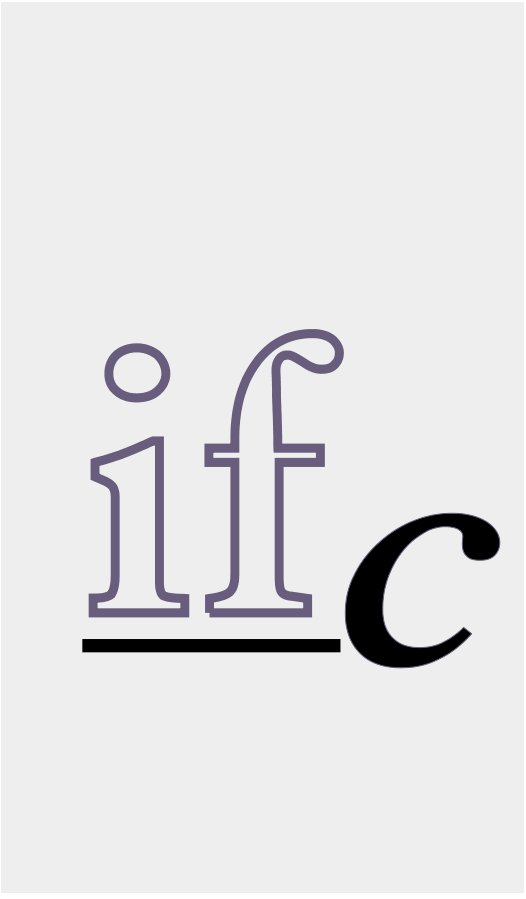

**The Irving Fisher Committee is part of the International Statistical Institute**

## Contents

# *ifc Bulletin*

**No 9 – July 2001**


## Contents

## What is the IFC?

The Irving Fisher Committee (IFC) is a forum for discussion of statistical issues that are of interest to central banks. The Committee, which derives its name from the great American economist and statistician Irving Fisher, is part of the International Statistical Institute (ISI).

## Objectives

By providing a forum for discussion, the IFC aims at:

- participating in the discussion on adapting statistical systems to changing requirements;
- promoting the adoption of international statistical standards and methodologies;
- sharing experience on the development of new statistics and the implementation of new methods of collecting, compiling and disseminating statistical information;
- exchanging views between central bankers and academics on statistical methods and techniques;
- facilitating personal contacts between central-bank statisticians.

## Strategy

To achieve its objectives, the IFC organizes conferences at which papers are presented. These conferences take place both inside and outside the framework of the ISI's biennial sessions. The conferences are supported by the publication of the IFC Bulletin, in which conference papers are reproduced.

## What kind of topics are discussed?

Any kind of theoretical or practical statistical subject that has a relationship with the activities of central banks can be considered for discussion. The subjects will mostly be in the area of monetary, financial and balance of payments statistics.

## Membership and Structure

In principle, the IFC has no personal members. Central banks and other institutions interested in statistical systems and statistical techniques that have a bearing on the collection, compilation and distribution of central-bank statistics can become members by simple application. So far, more than 60 central banks and a number of other institutions have applied for membership. Members are entitled to appoint delegates to participate in the IFC's activities and to contribute to its conferences by presenting papers.

The prime decision-taking body is the assembly of members' delegates at the "administrative meetings" that are organized within the framework of the ISI biennial sessions. Here the IFC's strategy is determined. At these meetings an Executive Body is elected, which is charged with the committee's day-to-day business and with the preparation of the "administrative meetings". Likewise, at the "administrative meetings" topics are proposed for future conferences, and a Programme Committee is elected to choose from these topics and to organize the conferences.

## A Short History

The Irving Fisher Committee (IFC) was established on the initiative of a number of central banks statisticians who were attending the ISI Corporate Members Meeting at the 1995 ISI Session in Beijing.

In 1997, during the 51st ISI Session in Istanbul, the IFC held its inaugural meeting. Inside the framework of the Istanbul Conference the IFC organized several sessions, on a variety of subjects. At the administrative meeting an Executive Body was established and it was decided to start publishing the IFC Bulletin devoted to the activities of the IFC.

In Helsinki, at the 52nd ISI Session, the IFC presented a programme comprising an invited papers session and a contributed papers session on "Globalisation of Markets and Cross-Border Holdings of Financial Assets", and a contributed papers session on "The Central Banks' Function in the Field of Statistics". Furthermore, the Committee held, in co-operation with the IAOS, a session on "How to measure deregulation". At the administrative meeting, decisions were taken about the IFC's future strategy. A new Executive Body was elected and a Programme Committee was instituted.

## IFC Bulletin

The IFC Bulletin is the official periodical of the Irving Fisher Committee. The Bulletin contains articles and the text of papers presented within the framework of the ISI Conferences. It also sees as its task the recording of interesting events concerning Fisher's life. Institutions and individuals active in the field of central bank statistics can subscribe to the Bulletin free of charge.

# Programme of the IFC Conference

### Time schedule of meetings

As indicated in Information Bulletin No 2 on the 53rd Session of the ISI, the Invited Papers Session and the Administrative Meeting will take place on 23 and 24 August respectively:

| | |
|---|---|
| Invited Papers Session No 30<br>"Financial Stability Statistics" | Thursday, 23 August 2001, 15:45 – 18:00 |
| Administrative Meeting Irving Fisher Committee | Friday, 24 August 2001, 11:45 – 13.15 |

When this issue of the IFC Bulletin went to press (end of June) no information was available on the time schedule of Contributed Papers Sessions. It was announced in a recent ISI Newsletter that this tiem schedule will be published not earlier than at the end of July.
The IFC Executive Body has requested the ISI Programme Coordinating Committee to cluster all meetings of the Irving Fisher Committee in the first week

We advise you to regularly visit the Web site of the conference *(http://www.nso.go.kr/isi2001)* to acquire the necessary information in time.

Any important new information will also be published in the section "Latest News" of the IFC Web site *(http://www.ifcommittee.org)*.

### Preparation of IFC Administrative Meeting

A joint meeting of the IFC Executive Body and the IFC Programme Committee will take place on Thursday, 23 August, during lunch time (exact location in Seoul to be announced later). The purpose is to identify possible courses of the IFC's future strategy and organisation, for discussion at the IFC Administrative Meeting on Friday, 24 August. The following subjects will be on the agenda:

1. The programme of the independent IFC Conference in 2002 (the provisional programme of this conference can be found on page 52);
2. The programme of the IFC Conference within the framework of the ISI Session in Berlin, in 2003;
3. The composition of the Executive Body and the Programme Committee in the period August 2001-August 2003;
4. The relationship with the ISI and the identification of the IFC's main orientation (scientific matters, methodology, policy issues).
5. The scope of the IFC Bulletin and the IFC Web site.

Any persons who expect to be in a position to contribute to this discussion are encouraged to contact the IFC Chairman.

### Publication of Conference Papers in IFC Bulletin

This issue of the IFC Bulletin is entirely devoted to the Seoul Conference. Papers for this conference have been reproduced in the version made available to the Editor. Revised or more comprehensive versions, as well as comments by discussants, may be published in the next issue (September 2001). These documents must be put at the Editor's disposal – preferably by e-mail – immediately after the conference, at the latest.

Fisher's **Short Stories on Wealth**
will be continued in the next issue of the Bulletin.

# Programme of the IFC Conference within the framework of the 53rd ISI Session

Seoul, 22-29 August 2001

*Invited Papers Session No 30*

## "Financial Stability Statistics"

23 August, 15:45 – 18:00

General theme:
**Recent Developments in Statistical Requirements for Financial Stability, and their Use**

Organiser: Philip Turnbull (Bank of England)
Chair: Philip Turnbull (Bank of England)

Session 1: ***The Perspective of International Organisations***
Paper: Paul van den Bergh (BIS) and Charles Enoch (IMF)

Session 2: ***The Perspective of a Central Bank of a Developed Country***
Paper: Sarah Wharmby (Bank of England)

Session 3: ***Monitoring Statistics for Financial Stability of a Small and Open Economy***
Paper: Sunny Yung (Hong Kong Monetary Authority)

Discussants: Jean-Marc Israël (ECB)
Federico Signorini (Banca d'Italia)

*Contributed Papers Session No 153*

## "The Measurement of External Debt and External Reserves"

Organiser: Carol S. Carson (IMF)
Chair: Carol S. Carson (IMF)

Papers: Paul van den Bergh and Carol S. Carson
*"Introduction and Update in the Field"*

Daniel O. Boamah (Central Bank of Barbados)
*"The Measurement of Foreign Reserves: Three Carribean Examples"*

Petr Vojtisek (Czech National Bank)
*"The Measurement of External Debt and Reserves: The Czech Experience"*

Jean-Marc Israël (ECB)
*"Compilation of External Debt and External Reserve Statistics"*

Elena Pak (Central Bank of Russia)
*"The Measurement of External Debt and External Reserves: The Russian Federation's Experience"*

*Contributed Papers Session No 152*

## "Collection of Financial Data from Companies: Statistics and International Accounting Standards"

Organiser: Satoru Hagino (IMF)
Chair: Józef Olenski (National Bank of Poland)

Papers: Satoru Hagino (IMF)
*"New Monetary and Financial Statistics Manual and International Accounting Standards"*

Susan Hume McIntosh (Board of Governors of the Federal Reserve)
*"Accounting for Stock Options in the United States"*

Ghislain Poullet (National Bank of Belgium)
*"The Non-Resident Qestion and National Statistics".*

Kiyohito Utsunomiya, Satoru Hagino and Teppei Nagano (Bank of Japan)
*"Treatment of Retirement Benefits and Stock Options in National Accounting"*

Chris Wright (Bank of England)
*"Measuring the Service Earnings of Financial Intermediaries – The role of the Balance-sheet in the production process"*

*Contributed Papers Session No 154*

## "The Relationship between Central Banks and Statistical Institutes"

Organiser: Bart Meganck
Chair: Mediyamere Radipotsane (Bank of Botswana)

Papers: Gregor Bajtay (National Bank of Slovakia)
*"The Relationship between the National Bank of Slovakia and the Statistical Office of the Slovak Republic"*

Orlando Caliço (Banco de Portugal)
*"The Relationship between the Banco de Portugal and the Instituto Nacional de Estatistica – Recent Experience"*

Bart Meganck (Eurostat)
*"Cooperation between Central Banks and Statistical Offices at Supranational Level"*

Eva-Maria Nesvadba and Aurel Schubert (Oesterreichische Nationalbank)

Józef Olenski (National Bank of Poland)
*"How to Square the circle of Official Statistics – Towards new Partnership of Central Banks and National Statistical Offices"*

Mediyamere Radipotsane (Bank of Botswana)
*"The Relationship between Central Banks and Statistical Institutes – Botswana's Case"*

# Financial Stability Statistics

## *Invited Papers*

# Recent Developments in Statistical Requirements for Financial Stability, and in their Use

## The Perspective of International Organisations

*Paul Van den Bergh (BIS)*
*Charles Enoch (IMF)*

### 1. The perspective of the Bank for International Settlements

Recent episodes of financial turmoil in international financial markets have underlined the importance of adequate information on key elements of domestic and international financial markets that allow financial market authorities and market participants to assess the potential vulnerabilities of the environment they oversee or operate in. The central banking community working through the BIS has been active in collecting and publishing statistics on international financial markets for a number of decades. Though the development of a comprehensive set of statistics on cross-border banking activities was originally driven by concerns related to monetary stability, the joint central bank exercise was subsequently adapted to shed light on the vulnerability of the international banking system. Moreover, over time, additional data were collected on international securities markets as well as foreign exchange and derivatives markets. Continuous efforts are being made to improve these statistics by extending their coverage, reliability and timeliness. The BIS provides a forum for ongoing international cooperation to improve the transparency of the international financial system. Central bank statistical cooperation is an important element in this context and is closely related to the activities of the various Basel-based groups with respect to financial stability.

#### *From monetary stability to financial stability indicators*

The origin of BIS activities in the field of international financial statistics goes back to the mid-sixties and the emergence of the so-called euro-currency markets that had sprung up to circumvent domestic regulations. The key policy concern which gave rise to the joint data collection exercise by the central banks of the Group of Ten under the aegis of the BIS was the need to monitor the rapid growth of these markets and its possible monetary implications. In the context of deregulation of domestic financial systems and capital flows in the seventies and eighties this concern abated, but in its place came others, notably the rise in the indebtedness of many developing coun-

tries to international banks in the early eighties. While this build-up was visible in the existing banking statistics collected and published by the BIS, as far as individual borrowing countries were concerned, it was not possible to evaluate the exposures of national lending banking systems to those countries. The need for such information therefore led to the reporting of banking data on a fully consolidated basis.[1]

As a result of the increasing role of the international securities markets in global financial intermediation, the BIS was mandated in the mid-eighties to collect and publish statistics on these markets on the basis of commercial databases and information available to individual central banks. In the nineties the BIS also became increasingly involved in the coordination of the joint surveys which central banks carried out on a regular basis of activities in global foreign exchange markets. Moreover, as derivatives markets expanded in the wake of financial innovation in this period, central banks asked the BIS to become active in the collection and publication of international data on exchange-traded and over-the-counter derivative transactions.

The evolution of BIS activities with respect to international financial statistics can thus be seen to reflect the evolving central bank concerns relating to monetary and financial stability in the context of world-wide financial market deregulation, innovation and globalisation. Experience of particular periods of monetary and financial instability have led central banks, other financial market authorities and international organisations to reassess the usefulness of the BIS international financial statistics[2] and to make recommendations for further improvements and extensions. It should also be noted that BIS data have, in a number of cases, proven to be useful for other purposes, for instance with respect to improving domestic monetary and balance of payment statistics and to measuring and monitoring developing countries foreign debt.[3] This has also at times led to specific proposals for enhancing the BIS statistics.

### *Ongoing international cooperation to improve transparency of international financial markets*

In the context of ongoing efforts to improve the transparency of international financial markets various efforts are being made to improve the BIS statistics and to promote their use. One project currently underway relates to the expansion of the consolidated banking statistics to identify banks country exposure on a so-called ultimate risk basis by reallocating risk to the country in which the ultimate guarantor of a financial claim resides. A more comprehensive reporting of risk exposures, including off-balance sheet positions relating, for instance, to banks derivatives transactions, is also being envisaged.[4] With respect to securities markets, the possibility is being explored to create a global database on individual securities. A study is also being carried out to explain gaps between the external debt statistics of emerging markets on an international creditor basis and those published by the emerging market countries themselves on the basis of domestic debtor data. Finally, continuous efforts are being made to improving the dissemination and use of the BIS statistics by financial market authorities and market participants.[5]

All these activities are closely related to, and guided by, the work of the various international committees and expert groups working at the BIS. For instance, the Committee on the Global Financial System of the G10 central banks plays a key role in reaching consensus on priorities to improve the BIS statistics. With respect to international banking data, the Basel Committee on Banking Supervision is regularly consulted on analytical issues and ensures the support from banking supervisors in major financial centres to collect adequate and up-to-date statistical information from internationally active banks. The recently established Financial Stability Forum has also formulated a number of recommendations to enhance statistics on international financial markets and capital flows which are being taken into account by the BIS and other international institutions, particularly the IMF, in their statistical work.

1 *A maturity breakdown of cross-border banking claims was also introduced at that time.*

2 *Following the Asian Debt Crisis, the IMF, OECD, World Bank and BIS pooled their respective statistics to collectively publish data on countries' foreign indebtedness. In most cases, debt to foreign banks, as captured in the BIS statistics, is the largest component. Moreover, given that the BIS banking data provide a maturity breakdown for bank claims, it has been possible to estimate the short-term component of a country's foreign debt (ie, with a residual maturity of less than one year).*

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4 *Methodologies for data collection and compilation are being developed. The plan is to have these statistics available by 2004.*

5 *Guidelines on BIS international financial statistics are regularly updated and published. Efforts are also made to make the data available in user-friendly form through the BIS website.*

One of the major underlying objectives of the various Basel-based groups is to strengthen financial stability through transparency and market discipline. Increased public disclosure plays a key role in this and should, over time, lead to better quantitative and qualitative information on the activities and risk profiles of individual institutions as well as market infrastructures such as payment, settlement and trading systems. With respect to the functioning of domestic and international financial markets, it can be expected that the BIS statistics on banking, securities, foreign exchange and derivatives markets will be complemented over time by improved aggregate information on liquidity, leverage and position taking in these markets.

## 2. The development of macroprudential indicators

Following the financial crises of the 1990s, there was considerable interest in a new international financial architecture to contain the risks of such crises in the future. A major component of this new architecture was heightened emphasis on better disclosure of information about the financial sector, and about the economy more generally. Within this component, a central element has been the development of a new set of data: that on macroprudential indicators (MPIs). It has been the focus of a major project conducted jointly by the Monetary and Exchange Affairs (MAE) and the Statistics (STA) Departments of the Fund to identify and provide guidance on the compilation of a set of MPIs.

In summer 2000 the IMF conducted an extensive survey of its member countries on their views on the usefulness of particular MPIs, and the extent to which MPIs were being compiled and disseminated. Around 60 MPIs, identified in earlier work.[1], were explicitly listed in the survey. The survey was sent to the member s central bank, with a request that the central bank pass it on as appropriate to regulatory authorities and to MPI users.

The response to the survey far exceeded expectations, with around 130 members providing answers[2]. The material in these responses will provide a mine for researchers in this area to analyze for some time to come. Interestingly, responses were received from all but two of the subscribers to the IMF s Special Data Dissemination Standard (SDDS) the data standard established in 1996 following the 1994 Mexican crisis and designed to enhance data transparency for those countries participating, or intending shortly to participate, in international financial markets. [3]

Respondents were asked in the survey to assess how useful they considered the identified indicators. They rated many very useful or useful . Those most considered very useful or useful included bank capitalization and profitability, and the level of nonperforming loans. There was in general little difference between industrial and developing countries in identifying particular indicators as important, although developed countries identified asset prices, including property prices, as important, while developing countries focused more on foreign exchange market factors, such as banks net open positions.

One way to take the work forward is to identify those indicators considered very useful or useful by the highest number of respondents, and to denote them as core MPIs, i.e. those which countries should make the greatest efforts to compile and on which further work should have the highest priority. On this basis a core group of around 30 indicators may be identified they are listed in Table One.

This of course is not the only possible methodology. The early warning indicators literature has sought analytically or econometrically to link developments in particular indicators to subsequent crises. Unfortunately, results have not been consistent, but seem to have been largely dependent on the models adopted by the various authors. The approach of using the results of the survey makes no pretensions as to analytic originality, but aims to reflect the revealed preferences of the actual practitioners of financial sector supervision.

There remain numerous issues before much of this list can be deemed fully operational. Table One shows also the extent to which the selected MPIs are at present compiled or disseminated[4]. Clearly there are still many gaps. For some of these indicators no primary data are even compiled by the official sector in most countries: the issue arises whether official sectors should branch out into these areas, or should rely on identifying private sector sources, if indeed such exist, to provide the information. Moreover, where an indicator exists, there may be wide cross country heterogene-

1 *This work is reported in "Macroprudential Indicators of Financial System Soundness" by a team led by Owen Evans, Alfredo Leone, Mahinder Gill and Paul Hilbers, (2000) IMF Occasional Paper no. 192.*

2 *Those from the CFA franc zone were submitted on behalf of their member countries by the regional central banks.*

3 *By April 2001, 48 countries had subscribed to the SDDS.*

4 *This table reflects the outcome of the survey; it is not a set of Fund-recommended* indicators. *Other work under way is likely to complement the survey results to generate a "core" set of recommended indicators.*

ity in how it is measured. Bank profitability, for instance, depends critically on treatment of nonperforming loans, which varies widely as a concept across countries. One conclusion is that renewed efforts are needed to achieve international standards to make the development of MPIs more meaningful.

Additional issues arise with regard to aggregation. It is not clear that simple aggregation will generate the information that is needed. Thus measures of dispersion which are likely to involve choices between multiple presentations may be necessary elements for making MPIs useful. And there has been as yet little work on identifying trigger points that should prompt concern and remedial action.

In short, it is clear that policy-makers in most countries view MPIs as an important tool for the management of their financial systems. One can identify a set of around 30 of these indicators on which most attention should probably focus. Much work remains before all these 30 indicators can be produced to any degree of international comparability, and before one can be confident as to the optimal way of measuring them or analyzing developments in them. Nevertheless, compilation and dissemination of those indicators that are available, together with clear explanations as to how they are derived, can be an important next step in bringing MPIs to bear in assisting the understanding and management of financial sector vulnerabilities.

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**Table 1 Compilation of High-Priority MPIs, All Countries and SDDS Subscribers**

| MPI | All Countries | | SDDS Subscribers | |
|---|---|---|---|---|
| | Number compiling components of MPIs | Percentage compiling components of MPIs | Number compiling components of MPIs | Percentage compiling components of MPIs |
| **Group I MPIs (Average usefulness ratings of 3.5 and above)** | | | | |
| 1.1 Basle Capital Adequacy Ratio | 79 | 85% | 36 | 75% |
| 2.4 Distribution of loans, by sector | 68 | 73% | 35 | 73% |
| 2.5 Distribution of credit extended, by sector | 53 | 57% | 26 | 54% |
| 2.8 Ratio of total large loans to own funds | 52 | 56% | 25 | 52% |
| 2.9 Ratio of gross nonperforming loans to total assets | 80 | 86% | 38 | 79% |
| 2.10 Ratio of nonperforming loans net of provisions to total assets | 70 | 75% | 33 | 69% |
| 3.2 Ratios of profits to period-average assets (ROA) | 75 | 81% | 36 | 75% |
| 3.3 Ratios of profits to period-average equity (ROE) | 74 | 80% | 36 | 75% |
| 3.4 Ratio of net interest income to total income | 82 | 88% | 39 | 81% |
| 3.8 Spread between reference lending and deposit rates | 53 | 57% | 25 | 52% |
| 4.3 Ratio of liquid assets to total assets | 75 | 81% | 34 | 71% |
| 4.4 Ratio of liquid assets to liquid liabilities | 72 | 77% | 33 | 69% |
| **Group II MPIs (Average usefulness ratings of 3.0 to 3.4)** | | | | |
| 1.2 Distribution of capital adequacy ratios (Number of institutions within specified capital adequacy ratio ranges) | 21 | 23% | 11 | 23% |
| 1.3 Leverage ratio (Ratio of on-balance-sheet assets to own funds) | 77 | 83% | 39 | 81% |
| 2.1 Distribution of on-balance-sheet assets, by Basle risk-weight category | 77 | 83% | 36 | 75% |
| 2.4a Loans for investment in commercial real estate | 41 | 44% | 28 | 58% |
| 24.b Loans for investment in residential real estate | 51 | 55% | 27 | 56% |
| 2.6 Distribution of credit extended, by country or region | 48 | 52% | 32 | 67% |
| 2.11 Ratio of corporate debt to own funds (Debt-equity ratio) | 34 | 37% | 22 | 46% |
| 2.12 Ratio of corporate profits to equity | 39 | 42% | 22 | 46% |
| 2.13 Corporate net foreign currency exposure | 18 | 19% | 6 | 13% |
| 2.15 Ratio of household total debt to GDP | 33 | 35% | 24 | 50% |
| 3.5 Ratio of trading and foreign exchange gains/losses to toal income | 64 | 69% | 37 | 77% |
| 3.6 Ratio of operating costs to net interest income | 81 | 87% | 40 | 83% |
| 3.9 Share of assets of the three largest depository corporationsin total assets of depository corporations | 67 | 72% | 34 | 71% |
| 4.10 Ratio of customer deposits to total (noninterbank) loans | 79 | 85% | 38 | 79% |
| 4.11 Ratio of customer foreign currency deposits to total (noninterbank) foreign currency loans | 69 | 74% | 33 | 69% |
| 5.1 Ratio of gross foreign currency assets to own funds | 72 | 77% | 34 | 71% |
| 5.2 Ratio of net foreign currency position to own funds | 50 | 54% | 24 | 50% |

Note: The denominator is 93 in the second column; 48 in the fourth column.

# Recent Developments in Statistical Requirements for Financial Stability, and in their Use

## The Perspective of a Central Bank of a Developed Country

*Sarah Wharmby (Bank of England)*

The Asian financial crisis of the late 1990s provided a catalyst for central bankers to undertake further, more detailed research on threats to global financial stability. In the field of statistics, the debate has centred on the question of how financial stability can and should be measured, prompting a re-examination of the scope and use of statistics in this area.

At an international level, there have been numerous initiatives both to expand the range of statistics collected and to develop new data frameworks to monitor financial stability; e.g. the initiatives taken by the BIS and IMF described in the previous article.[1] Along with many other central banks, the Bank of England has contributed to this work and welcomes these efforts to create common frameworks for statistics. At the national level, the Bank has applied some of the concepts and measures suggested by this work specifically to assess the risks faced by London as a financial centre. This article describes the experience of the Bank of England in bringing together currently available datasets to produce a framework of statistical measures and indicators aimed at ranking and monitoring some of the potential risks to the stability of the UK financial system.

### 1 The problem of defining and measuring financial stability

Financial stability is a vast subject area, which is hard to define accurately. It relies on the efficient functioning of many different markets, instruments, institutions and regulations, all of which are constantly evolving. London's role as a leading international financial centre stems from its involvement in these diverse areas and in financial innovation more generally. This central role also means that there are many possible channels through which shocks could affect London, and therefore financial stability in the UK. It is one of the Bank of England's three core purposes to "maintain the stability of the financial system… through monitoring developments in the financial system both at home and abroad, including the links between individual institutions and between financial markets; and through analysing the health of the domestic and international economy."[2]

The complexity of the global financial system means that there is no single indicator that can be used to assess whether a financial system is stable. Instead there is a wide array of concepts that need to be considered to form an overall picture of the health of a financial system. Statistics provide one of the main sources of information to support this task. However, many of the concepts involved in the assessment of financial stability are not clearly defined, which makes compiling easily understandable and relevant statistics problematic. Also, such a potentially broad remit makes it very difficult to decide what to measure, when, and how. There has therefore been a drive to use statistics, not only in the evaluation of specific financial stability issues, but also to provide a broad overview of financial systems. The aim of this latter research is to highlight potential problems, identifying where attention and resources should be focussed, and acting as a trigger for further research into those areas.

### 2 Macro-prudential indicators (MPIs)

Using the IMF survey as a starting point, the Bank of England has begun to compile time-series of several indicators for use in our own financial stability assessment. Creating these data series raised a number of issues, which will probably be of relevance to others attempting similar work; some are described below.

1 *Van den Bergh and Enoch (2001 ISI paper).*

2 *Bank of England, Annual Report 2000.*

The initial set of MPIs developed at the Bank draws on a mixture of the two main types of banking data collected in the UK: statistical data and supervisory data. These two datasets were developed for different purposes, which has implications for both the compilation of MPIs, and their subsequent interpretation.

The statistical returns were initially designed to be aggregated for National Accounts, Balance of Payments and monetary policy purposes.[1] Therefore UK statistical data are generally available on a standardised basis, covering business conducted within the borders of the UK.

Supervisory forms, on the other hand, are collected for use by the FSA (Financial Services Authority), and were developed with the aim of accurately reflecting the business of individual organisations of interest to supervisors, not for aggregation. While a broad range of data is available, there are problems for the statistician in terms of the coverage and completeness of the datasets. Supervisory agreements between European countries mean that not all banks in the UK are required to complete FSA forms. For those that do, the nature of a particular submission is dependent on both the structure of the specific banking group and any bilateral agreements that have been made with supervisors over the years. As a consequence, not all data items are completed by the full banking population, leading to gaps in data coverage for certain instruments. Also, banks are permitted to submit their FSA returns for non-standardised reporting dates. These differing arrangements make it very difficult to compile comprehensive time-series for MPIs. It is possible to aggregate the data at any one point in time, noting the coverage of the series at that point, but to make these aggregations consistent over time, taking into account the various changes which occur from period to period, is a very complex task.

There is no doubt that the initial compilation of MPIs, involving confronting the above issues, was a valuable learning process. The first series released within the Bank contain numerous caveats about the quality and reliability of the aggregated data. It is essential that users are made fully aware of such limitations in the techniques used to compile MPIs. But it is equally important that they realise that these do not prevent MPIs' use as an analytical tool.

MPIs use a long run of data to identify general trends in series that are believed to be key measures of the health of a financial system. They can then be used to highlight any divergence or sudden change in these trends. However, it is the fact that the trend has changed, rather than necessarily the magnitude or direction of the change, which is of interest. MPIs should not be viewed as a proxy for official statistics, and as such a divergence from the trend should not immediately be interpreted as evidence of an emerging risk to financial stability. However, it should be seen as trigger for further thought and investigation. It may indicate a problem with the data aggregation, a general development in the market, or it could be indicative of a genuine source of instability in the system. As long as users are aware of how to interpret the information conveyed, MPIs can be a useful tool for providing early indications of problems or for informing further long-term financial stability analysis.

## 3 Concepts of Country Risk

The UK financial markets are highly internationalised with almost half of UK registered banks' business being conducted cross-border. This provides many channels by which shocks from other countries could potentially affect the stability of the UK financial system, and leads central bankers and regulators in the UK to be particularly interested in the exposure of the UK financial system to other economies. Country risk data is available from the BIS international banking series, to which the Bank of England contributes along with many other countries. These datasets provide coverage of a banking system's external positions with different countries on a number of different bases. This allows exposure to be calculated in different ways but also raises the important question of exactly what is meant by "exposure" in this context.

*Should the business of branches and subsidiaries of non-resident owned banks be included in the calculation?* These institutions are an integral part of the overall UK banking system, and as such any risk they are exposed to will be expected to feed through into the system. However, a major concern for UK financial stability analysis is often the risk faced by UK-owned banks only, particularly from the point of view of a lender of last resort. Table 1 shows the exposure of the UK banking system to a selection of countries based on different definitions of exposure. Column (1) is based on all banks operating in the UK, and column (2) on UK-owned banks operating in the UK. It is clear that the definition chosen has a large effect on the perceived exposure of the system. Neither measure is right or wrong. The difference between the series simply highlights the fact that

1 *Hamilton (1999)*

different nationalities of bank have different lending patterns. Knowing how these patterns vary can in itself be a useful financial stability tool.

*Should the activities of non-resident branches and subsidiaries of UK banking groups be included as well?* Although this activity is not conducted in the UK, it can still have implications for UK financial stability as it has the potential to affect the health of the UK parent company. This coverage is available from the consolidated dataset, the respective figures being shown in column (3) of table 1. Once again, these figures show the scale by which this coverage change can affect the exposure figure.

*What definition of risk should be used?* In line with BIS requirements, the Bank of England collects data on risk transfers, which take into account arrangements whereby residents of another country effectively guarantee the repayment of a claim. The Bank of England uses this data to make adjustments to the immediate counterparty data collected to give a measure of exposure by ultimate risk[1], which the Bank of England has published since September 1999 and is shown in column (4). The use of ultimate risk rather than immediate counterparty data can have a significant effect on the UK's exposure to certain countries.

**Table 1 Definitions of UK exposure, 2000 Q3 data - selected countries only[2]**

| US$ millions | Locational data | | Consolidated data | |
|---|---|---|---|---|
| Claims vis-à-vis: | All UK based banks (1) | UK-owned banks (2) | Immediate counterparty (3) | Ultimate risk (4) |
| Germany | 213 644 | 24 433 | 34 335 | 70 013 |
| Switzerland | 125 791 | 4 299 | 6 213 | 21 622 |
| Cayman Islands | 70 831 | 11 243 | 16 971 | 2 754 |
| Russia | 4 691 | 458 | 634 | 164 |
| Argentina | 4 741 | 1 480 | 6 868 | 5 408 |
| Brazil | 7 220 | 4 014 | 5 288 | 6 613 |
| South Korea | 8 872 | 2 607 | 5 007 | 4 768 |
| **All countries** | **1 967 392** | **369 413** | **522 598** | **526 389** |

Looking at these different measures together can give a very clear picture of the exposure of the UK banking system to other economies, providing not only a quantification of the risk involved, but also an indication of which section of the UK financial system is conducting the business. However, it is not always the absolute value of the exposure to a particular country that is of interest. Instead it is the relative size of the exposure that is important. Research at the Bank of England has created a ranking for the financial stability risk of the UK economy by taking a measure of exposure for each country and linking it with a probability of default.[3] This ranking exercise can be used to focus work on the countries where a potential problem could have the largest effect on the UK financial system.

The initial phase of this work was limited to looking at UK-owned banks on a consolidated, immediate counterparty basis. However, the variation between the measures of exposure used in table 1 demonstrates that this ranking could change significantly if the exercise was conducted using a different exposure definition. The use of indicators in an absolute fashion, or in isolation, can provide a distorted and simplified view of the financial system. Therefore, users of financial stability indicators must be aware of the limitations of each indicator, and look at them in conjunction with other available indicators to establish a complete picture of the situation.

1 *Exposure by ultimate risk = total cross border claims and non-UK offices' non-local currency claims on local residents + net non-UK offices' local currency claims on local residents - outward risk transfers + inward risk transfers - portfolio investments.*

2 *These countries have been chosen to highlight the differences between the various datasets.*

3 *See Buckle et al (2000).*

## 4 Further considerations for future work

There are many routes through which risk can be transmitted other than those previously described. As a result, the above analysis does not necessarily represent the full exposure of the UK financial system to any particular shock. This paper does not attempt to cover these potential transmission channels in depth, but they include:

- certain activity in international derivative markets, which is not currently captured in the data, but can be used to transfer risk from one country to another,
- feed through effects arising from the interlinkages of a branch of a crisis country institution operating in the UK market,
- third country effects, whereby a shock in one country will have knock on effects into a second country, which may then default on its debt to the UK as a result.

Currently available data can be used to begin to address some of these issues, but the examples demonstrate that it will never be possible ex ante to produce a fully comprehensive framework for analysing threats to the stability of the UK financial system. They also highlight the fact that, as a major international financial centre, the UK is affected as much by events in the rest of the world and international markets as by domestic events. The Bank is therefore interested in the development of statistics at an international level as well as at the domestic level, which will help improve the quality of analysis possible in this area. This includes the further development of the MPI framework in both the UK and other countries, which could eventually help in analysing the increasing global aspects of financial stability work.

## 5 Conclusion

Analysis of potential threats to financial stability is a large and rapidly developing area that is placing new demands on the central banks of both developing and developed countries. Risks can arise within domestic or international markets, and be rapidly transmitted globally. Statistics have traditionally been drawn on to address specific issues, but are now increasingly being utilised to develop a structure within which the vast array of financial stability issues can be prioritised according to impact and likelihood. This ensures that the most important are given the most attention at the right time. It is this latter role for statistics that is likely to be called on increasingly in the future, building and developing some of the methodologies outlined in this paper.

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## Résumé

*L'analyse des menaces potentielles pour la stabilité financière est un domaine qui se développe de façon très étendue et rapidement qui impose de nouvelles exigences aux banques centrales des pays en voie de développement et industrialisés. Cet article décrit l'expérience de la Banque d'Angleterre dans le regroupement des fichiers actuellement disponibles pour créer un cadre de mesures statistiques et des indicateurs destinés à classer et à surveiller certains des risques potentiels à la stabilité du système financier du Royaume-Uni.*

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# Recent Developments in Statistical Requirements for Financial Stability, and in their Use

# Monitoring Statistics for Financial Stability of a Small and Open Economy

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The financial crises in 1997/98 brought to surface a number of deficiencies in the global financial system. Inadequate transparency, both on a market-wide level as well as on individual firm basis, is one of the most cited weaknesses, along with poor counterparty risk management of banks and aggressive trading behaviour of some hedge funds and proprietary desks of financial institutions. This paper will focus on issues related to transparency of financial markets from the perspective of a small and open economy. First, it reviews the inadequacy of data availability at the time of the financial crisis in 1997/98 and the subsequent improvements made by the international financial community and national authorities. Despite the improvements, there remain concerns about the effectiveness of monitoring financial market stability for small and open economies. The second part of the paper goes through these concerns in more detail. Finally, it looks at the how authorities in Asia to strengthen their domestic and regional efforts to improve their monitoring of statistics for financial stability.

## Data availability during the 1997/98 financial turmoil

There are several categories of data that are relevant to financial stability. The most common type is *macroeconomic data* such as GDP, balance of payments account, inflation, fiscal data etc. The second type is *vulnerability indicators*, such as the Macroprudential Indicators (MPIs) currently being developed by the IMF and some measures of exchange market pressure. The third type is *financial data* and they can be further divided into two broad categories: price data and quantity data.

### *Macroeconomic Data*

At the time of the 1997/98 financial turmoil, the availability of macroeconomic data is relatively satisfactory, except for the following two areas:

- Foreign exchange reserves - the provision of some important off-balance sheet information, such as derivative transaction and undrawn credit facilities, was not a common practice. At that time, there was no international consensus to make the disclosure of such information a mandatory requirement.
- External debt there was a lack of reliable measures of the total outstanding debt incurred by an economy and the maturity breakdown of the debt. Another problem associated with external debt was that most such data were compiled on a resident basis, rather than on ultimate risk basis. For example, the debt of a Hong Kong subsidiary of a US bank was regarded as a debt incurred by Hong Kong, not the US.

In order to address these concerns, the IMF has made several enhancements to its Special Data Dissemination Standards (SDDS) to include external debt as a mandatory disclosure requirement. It also successfully developed a reserves template that requires SDDS subscribing economies to disclose essential off-balance sheet information. Progressing almost in parallel is the improvement in the BIS international banking statistics, where data are now compiled on an ultimate risk basis, with an expansion of geographic coverage and shorter time lag.

### *Vulnerability Indicator*

The development of vulnerability indicators has received renewed interest in the academic circle, especially in the aftermath of the Tequila crisis in 1995. These indicators have their unique attraction because they are forward-looking and have predictive power over the possibility of a financial crisis emerging. However, it was not a common practice for the authorities or the private sector to seriously make use of these indicators during the course of the 19997/98 crises. A major reason for the lackluster response from users was that the reliability of these indicators remains in doubt. These indicators are clearly providing better insight than pure guesswork but they sometimes fail to predict actual crises and often issue false alarms.[1] The problems are manifold. The heterogeneous nature of financial crises and economy-specific factors are making it difficult to develop a comprehensive set of vulnerability indicators for wide application. Nevertheless, it is encouraging to see that the IMF is devoting efforts into the development of the MPIs and I am eagerly waiting for their recommendations.

### *Financial Data*

With regard to financial data, they can be further divided into price data and quantity data. At the time of the crises, price data, such as exchange rates, equity prices and bond yields are available almost real time in most financial markets, even in less sophisticated ones. However, the availability of quantity information was less satisfactory. It was less common for national economies to produce such statistics in a frequent and timely manner. At the international level, the quarterly international banking statistics and the BIS-led triennial central bank survey on foreign exchange market activities were among the more respectable sets of quantity financial data that were made available, but they were subject to the limitations of long time lag and low frequency.

While price data are useful measures of prevailing market trends and investor sentiments, they are not sufficient for monitoring financial stability, at least for the following reasons:

- First, these data often contain noise, making it difficult for market participants and the authorities to make objective and accurate interpretation.
- Secondly, the analysis of price data is sometimes complicated by the lack of information on market liquidity. Even the bid-ask spread alone would not be sufficient to reflect the liquidity condition. The implication for a large price fluctuation under liquid market condition would be very different from that when market liquidity dried up.
- Thirdly, market data do not contain sufficient information for measuring market concentration risk associated with large position taking.

Improvements in the quality and timeliness of quantity financial data, such as transaction and position data, so far have been slow compared with that of other statistics. This is the concern that is especially relevant to small and open economies, which will be covered in greater detail in the following section.

## The concerns of small and open economies

The above observations reflected the general plight of many emerging market economies in Asia, and in particular Hong Kong. The experience of the 1997/98 financial turmoil in Asia demonstrated that the lack of reliable and timely quantity data to measure liquidity risk and concentration risk in financial markets was a major limitation for market participants and the authorities to better understand market dynamics and make informed investment decisions and policy responses.

During a financial crisis, the foreign exchange market is always the pressure point and monitoring activities in this market gives useful insights on financial stability of the economy. This is especially helpful to small and open economies. These economies are very much inclined toward having their financial markets integrated with the global system, but they are also worried about the potentially huge volatility that might come along with market liberalization. One particular concern for these economies is the possibility of large individual financial institutions taking a dominating position in particular currencies or markets and either intentionally or inadvertently causing large price movements.

1 See Hawkins and Klau (2000) for a comprehensive overview of the development of these indicators and Berg (1999) for a critical review of the usefulness of these indicators.

Improving the monitoring of liquidity and concentration risks in the foreign exchange market would enable market participants as well as the authorities to better assess: (i) the risks associated with high concentration; (ii) the likelihood of a loss of liquidity under extreme market conditions; and (iii) the potential contagion effect of extreme exchange rate movements.

The disclosure of quantity information by market participants should work in two ways. First, it should contain the essential elements that would allow the financial position of significant market participants to be assessed objectively, such as their degree of leverage and their exposures to specific markets or currencies. This could help counterparties, for example the banks extending credit to them and the customers using their services, to make decisions based on rational analysis. Secondly, the information should also include data that will enable aggregate market positions and their concentration to be assessed. This could help regulators to ensure systemic stability by taking the appropriate response to manage any potential systemic risk that might arise. The two types of quantity information should be made available at least on a quarterly basis, and preferably on a monthly basis.

With regard to the disclosure by key market participants, a number of efforts are underway to improve transparency of risk-taking by individual financial institutions. The most notable one is the Multidisciplinary Working Group on Enhanced Disclosure, which has just completed a study on the feasibility of disclosing more information by financial intermediaries. The information include, inter alia, intra-period and end-period VAR of certain broad risk/asset classes, such as equity, currency and fixed income instrument etc., undertaken by a financial institution. However, these information will not be detailed enough to enable any meaningful assessment of the risk taken in specific instrument or currency.

The development in the collection and compilation of aggregate position data in foreign exchange markets has been less than satisfactory. There was a fierce debate over the feasibility of producing such data. The arguments against the provision of such data can be broadly summarized as below:

- long time lag if data are compiled on a global basis;
- doubtful data quality because of window dressing by data suppliers; and
- potential loss of proprietary information;

The first two arguments highlight the generic limitations of position data and they are equally applicable to any statistical data of similar nature, including statistics on external debt and international bank credits. Users have to be cautious in the analysis and interpretation of the statistics. However, in my opinion, these arguments do not possess sufficiently strong ground to reject the usefulness of such data. With regard to the concern over the potential loss of proprietary information, it has become apparent that the private sector, or at least some of the key market participants, are unwilling to voluntarily share the information, even at the aggregate level. They believe that position data are the sort of proprietary information upon which financial institutions generate profits and the leakage of such information would seriously undermine their competitive advantage in the market. The possibility of a mandatory disclosure requirement for such data is rather remote because some major financial centers do not have sufficient political support to enact the required legislation. A statistical gap has thus been left open in the production of aggregate position data in the foreign exchange market.

### Strengthening domestic and regional monitoring framework

While international efforts may not have fully addressed the concerns of small and open economies, there remains keen interest from national authorities in the region to search for a more robust monitoring framework for financial stability. The requirement to report foreign exchange activities is quite common amongst emerging market economies in Asia. These reporting regimes are subject to the same limitation, that is, they cannot be applied to extra-territorial entities. As a result, these economies have to rely on domestic financial institutions to report their counterparty positions in domestic currencies as a means to monitor potential risks arising from financial markets in general and foreign exchange market in particular.

The lack of an effective framework to monitor concentration and liquidity risks in a global and/or regional context has prompted many small economies in Asia, including Singapore, Malaysia, Thailand and Indonesia, to impose restrictions on the access to their domestic currencies by non-residents. These restrictive measures are unlikely to be removed until an effective monitoring framework is developed. Strengthening the provision and monitoring of statistics for financial stability is certainly an unfinished task and it will continue to carry a high priority in the policy agenda for central banks and other authorities in the region.

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## Abstract

*This paper has reviewed the inadequacies of data available for the purpose of monitoring financial system stability. While encouraging progress has been made on the provision of better quality and more timely macroeconomic data, the development of indicators of vulnerability and forex exchange market stress is less satisfactory. The information gap is particular relevant to small and open economies, whose currencies are more vulnerable to speculative attack. Short of any effective monitoring tools in the forex markets in the global context, many economies in Asia, notably Singapore, Malaysia, Thailand and more recently Indonesia are adopting domestic measures to limit the access to their domestic currencies by non-residents. These measures are unlikely to be removed before the information gap has been resolved.*

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# The Measurement of External Debt and External Reserves

## *Contributed Papers*

# The Measurement of Foreign Reserves: Three Caribbean Examples

*Daniel O. Boamah (Central Bank of Barbados)*

### 1 Introduction

Foreign exchange reserves are financial instruments at the disposal of monetary authorities for the primary purpose of financing international payments imbalances. Foreign assets in most countries are decomposed into two broad components: those of monetary authorities and those of commercial banks. The former usually comprise holdings of monetary gold, claims on non-residents, special drawing rights (SDR), reserve position in the Fund and the use of Fund Credit. Whether or not a foreign asset should be included in a country's foreign reserves is dictated by two internationally accepted criteria: 'effective control' and 'availability'. The monetary authorities should not only have 'effective control' over the asset but it should also 'be available' to meet a balance of payments (BOP) need.

This paper seeks to document and discuss the various approaches to the measurement of foreign reserves in Barbados, Jamaica and Trinidad and Tobago. It also examines trends in the identified reserve measures, assesses how they conform to BOP accounting procedures and discusses their suitability or otherwise for measuring reserve adequacy in the three countries.

### 2 Concepts and Measurements

The Central Banks of Barbados, Jamaica and Trinidad and Tobago have used slightly different approaches to identify reserve assets over time. Nevertheless, the underlying concept of what constitute foreign reserves has not differed markedly. Published documents of international reserves of the three countries broadly identify the following:

1 the net international reserves (NIR) position of the Central Bank, representing gross foreign reserves less outstanding short-term liabilities of the bank and any credit advanced by the International Monetary Fund (IMF);
2 the net official reserves (NOR) position which represents the Central Bank's NIR position, the central government's foreign reserves and those of public agencies controlled by the monetary authorities.
3 the net foreign position (NFP) of the country as a whole, representing the net official reserves position plus the net foreign position of the commercial banking system.

In Barbados, the Central Bank continued to include the balances due from the Caricom Multilateral Clearing Facility (CMCF), which became bankrupt in 1983, among its published assets, even though the bankruptcy rendered about 75% of the Bank's foreign assets illiquid. However, for its own internal monitoring purposes, it netted out both its short-term foreign liabilities and the CMCF balances and called the remainder *available reserves*. This series was solely for internal use and was not published.

Trinidad and Tobago has operated under a regime of freely floating exchange rate since 1993. Unlike Barbados, its definition of external assets excluded all loans made to its Caribbean neighbours who are members of the Caribbean Economic Community (Caricom), on the grounds that such loans were unavailable to the country for BOP purposes. Also, with that country's change from fixed to floating exchange rate regime in 1993, changes in the net foreign position of the commercial banks were no longer reckoned as suitable for financing payment imbalances but as part of net capital movements. Jamaica has also operated under a regime of floating exchange rate since 1991, but unlike Trinidad and Tobago (and Barbados), its definition of net foreign position of the country excludes the Central Bank's medium-term liabilities.

Estimates of the NIR, NOR and NFP were made for the period 1981 to 1999. They were positive for Barbados and Trinidad and Tobago. For Jamaica, however, all the three measures were consistently negative from 1981 until 1993.

## 3 Conformity of the Identified Reserve Measures to BOP Accounting Procedures

As measures of foreign exchange reserves, the NIR and NOR concepts in Jamaica and Trinidad and Tobago appear to conform to the two internationally accepted criteria of effective control by the monetary authorities and availability for balance of payments purposes. In Barbados, however, since the reported series of all three aggregates include the largely unavailable CMCF balances, they violate the availability criteria.

The NFP aggregates for Jamaica and Trinidad and Tobago adequately conform to the two criteria up to the periods when they moved from fixed to floating exchange rate regimes. With the change in exchange rate regimes, the net foreign position of commercial banks was no longer suitable for balance of payments purposes.

It should be stressed, though, that to the extent that the NFP series in Jamaica exclude the country's central bank's medium-term liabilities (which by definition should be available for financing any balance of payments imbalances), it provides a rather poor measure of any imbalances from that country's international transactions.

## 4 Adequacy of the Reserve Measures for BOP Purposes

A country's demand for foreign reserves for balance of payments purposes is determined by a number of factors, including more importantly, the degree of openness of its economy and the variability in the size of its payments imbalances.

Import reserve cover ratios (IRRs) were calculated for the three countries, using the NOR, NFP and GOR (gross official reserves) measures. The IRRs represent the number of months worth of imports that could be paid for from a given stock of reserves.

The GOR measure, which represents the amount of reserves available for transactions at each point in time, is included to emphasise the point that the gross concept of reserves is the more relevant measure when it comes to assessing adequacy of reserves for transaction purposes, since both the NOR and NFP measures could be negative for a prolonged period, as data from Jamaica attest to.

For the period 1981-1999, Trinidad and Tobago had the highest import cover ratios, averaging 5.6 months under GOR measure, compared with 3.2 months for Barbados. Although the import cover ratios for Barbados were generally lower than those for Trinidad and Tobago, they were relatively more stable, with a standard derivation of 0.73 (with GOR) compared with 5.57 for Trinidad and Tobago.

The Jamaican data underscores the importance of using the gross concept of reserves rather than the net concept when measuring reserve adequacy. The average import cover ratio was a negative 2.7 months under the NOR measure but was a positive 2.0 months under the gross concept. Unlike Trinidad and Tobago, Jamaica maintained a higher level of import cover ratio during the period of floating exchange rate (2.54 months) than under the period of fixed exchange rate (1.53 months). That may be due more to the exigencies of the period rather than the result of a deliberate policy. Jamaica experienced extreme balance of payments problems in the period immediately preceding the shift to a floating exchange regime in 1991.

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# Compilation of External Debt and International Reserves Statistics for the Euro Area

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The euro area has existed since 1 January 1999 and is the largest economic and monetary union so far. For the conduct of the monetary policy, statistics should relate to the economic territory composed of the 12 Member States (11 from the euro area inception[1] plus Greece from 1 January 2001). At the same time, and so long as economic (in particular fiscal) policy is still driven at the national level, national statistics are also needed. In the framework of the IMF Special Data Dissemination Standard (SDDS) to which 11 euro area Member States have subscribed, external debt statistics should be disseminated on a quarterly basis (within a quarter after the end of the reference period) as from March 2003 and monthly international reserves detailed stocks are compulsory from April 2000. Although the SDDS requirements do not impose direct obligations with regard to *the compilation and dissemination of euro area statistics*, the Directorate General Statistics of the ECB intends to conform to this (new) standard to the greatest extent possible for euro area statistics.

As a contribution to the session on "The Measurement of External Debt and Reserves" this paper elaborates on the main features related to the data output required from the euro area Member States with a view to compiling and disseminating timely and reliable data for the euro area as a whole.

## External debt statistics

The Board of Executive Directors of the International Monetary Fund (IMF) agreed in December 1998 and in March 2000 on refinements to the SDDS. As a result, the IMF's Board introduced (i) the international investment position (i.i.p.) as a compulsory category of the SDDS, with a timeliness of six months (later extended to nine months), to be compiled for the first time for data referring to end-2001; and (ii) a separate SDDS data category for external debt. With regard to external debt statistics, these should be consistent with the components and concepts of the i.i.p. liabilities. Accordingly, data should be compiled in accordance with the IMF's Balance of Payments Manual, 5th edition (BPM5). Data should also be broken down into sectors (general government, monetary authorities, banks, other sectors), by (original) maturity – short-term and long-term, and by instrument. In addition, dissemination of further information is encouraged, such as:

- debt service payment schedule, in which the principal and interest components are separately identified, twice yearly, for the first four quarters and two semesters ahead, with a lag of one quarter;
- a domestic/foreign currency breakdown.

Sharing the views expressed in the Draft Guide on External Debt Statistics prepared by the IMF and the Inter-Agency Task Force on Finance Statistics (of which the ECB is a member), the ECB considers that for industrialised countries/regions, such as the euro area, the dissemination of external liabilities (debt) is meaningful only in conjunction with data on external assets, as many of the debt positions, especially the very short-term ones, are offset by corresponding assets. Therefore, the approach of using the liabilities side of the i.i.p. for the compilation of external debt statistics was, in principle, regarded as useful by the ECB.

However, this will only be possible when participating Member States' data are provided to the ECB in a form permitting the external assets and liabilities of the euro area to be compiled separately, which is not currently the case. Owing to the difficulty for most Member States of making correct geographical breakdowns with the tools currently in use, mainly affecting portfolio investment stocks on the liabilities side, thus making it impossible to have a proper intra/extra euro area allocation of stocks, the euro area i.i.p. is, at present, compiled on a **net** basis, relying on the aggregation of net national data (i.e. addition of euro area Member States' national net positions vis-à-vis the rest of the world including positions vis-à-vis other euro area Member States, assum-

1 *Belgium, Germany, Spain, France, Ireland, Italy, Luxembourg, the Netherlands, Austria, Portugal and Finland.*

ing that intra-euro area positions cancel each other out). A full implementation of a separate compilation of external assets and liabilities end-year positions in all instruments is planned from end-September 2002 onwards (for data referring to end-2001).

As the compilation of a euro area i.i.p. on a quarterly or semi-annual basis was not regarded as a priority by the majority of Member States, the ECB will start compiling quarterly i.i.p./external debt figures by accumulating quarterly b.o.p. flows to the latest real stock data available. In addition, the ECB is unlikely to be in a position to compile the extensions encouraged, such as the debt service payments schedule, since not all Member States are likely to compile such extensions.

## External reserves

Since April 1999, the ECB has required and published monthly data on the stock of international reserves held by the Eurosystem, i.e. the ECB and the now 12 participating National Central Banks (NCBs). The definition of the Eurosystem's international reserves, which was approved by the Governing Council of the ECB in March 1999, is consistent with the guidelines outlined in the BPM5. The international reserves of the euro area consist of the Eurosystem's reserve assets, i.e. the ECB's reserve assets ("pooled reserves") and the reserve assets held by the NCBs of the participating Member States ("unpooled reserve assets").

### *Definition*

Reserve assets (i) must be under the effective control of the relevant monetary authority, whether the ECB or the NCBs of the participating Member States; and (ii) refer to highly liquid, marketable and creditworthy foreign (non-euro) currency-denominated claims on non-residents of the euro area – plus gold, Special Drawing Rights (SDRs) and the reserve positions in the IMF of the participating NCBs.

This definition expressly precludes foreign currency claims on residents of the euro area from being regarded as reserve assets either at the national or at the euro area level.

Although governments may hold working balances in foreign currencies, foreign exchange positions of central governments and/or Treasuries are not included in the reserve assets definition for the euro area, in accordance with the institutional arrangements in the Treaty establishing the European Community. Reserve assets data are compiled on the basis of the information provided by the accounting or operations departments of both the ECB and the participating NCBs .

### *Gross and Net Reserves: the concept of Foreign Currency Liquidity*

As such, reserve assets are presented on a *gross basis* without any netting-off of reserve-related liabilities as these should remain the central indicator of a country's ability to meet its foreign exchange obligations. The only exception relates to the sub-category of financial derivatives, which are recorded on a net basis.

However, against the background of the Asian crisis, the concepts of "*usable reserves"* and the more general concept of *"foreign currency liquidity"*, have gained importance. In this respect, the data purely based on the concept of gross international reserves may be supplemented with information about (i) encumbrances on reserves (i.e. the so-called reserve-related liabilities) and (ii) foreign currency assets and liabilities vis-à-vis euro-area residents. This complementary information is indeed an important indicator of a country's ability to meet its foreign exchange obligations.

Following this reasoning, the ECB compiles and publishes each month on its website both Eurosystem and ECB data on international reserves and other related assets and liabilities, in line with the template entitled "International reserves and foreign currency liquidity", which was set out in early 2000 in the IMF's SDDS. This information covers not only data on official gross reserve assets of the ECB and the participating NCBs, but also covers other foreign currency assets readily available upon demand but not included in the category of official reserve assets, on the one hand, and predetermined and contingent short-term liabilities denominated in foreign currency, on the other hand. These other foreign currency assets mainly encompass foreign currency claims on residents of the euro area and claims not liquid enough to be considered as reserve assets. Regarding the predetermined and contingent short-term liabilities, they comprise financial instruments denominated in foreign currency that will, respectively, may, give rise to outflows of foreign currency over the twelve months ahead. This additional information is deemed relevant for assessing risk exposure in foreign exchange.

Regarding the underlying methodology applied for the compilation of the Template, it conforms to the guidelines provided by the IMF, with the exception of the treatment of claims arising from reverse repos vis-à-vis NCBs or private financial institutions, which are classified under currency and deposits instead of under other reserve assets.

### *Valuation principles for Eurosystem International Reserves Statistics*

Instruments included in reserve assets are valued on the basis of market prices by using (i) the prevailing market prices at the time when the *transaction* takes place for transactions and (ii) the closing mid-market prices at the end of the appropriate period for *positions*. Gold is valued at the closing market price prevailing at the end of the reference period. Contingent and predetermined reserve-related short-term liabilities are presented at nominal values.

### *Particular methodological aspects of Eurosystem International Reserves Statistics*

Holdings of monetary gold remain unchanged in all reversible gold transactions (gold swaps, repos, loans and deposits) as they are recorded following the 'collateralised loan' approach.

Foreign-currency-denominated repo transactions (including repos, securities lending and sell-buy-back transactions) are treated as collateralised loans in line with international statistical standards.

Finally, asset and liability positions in financial derivatives falling into the category of official reserve assets are netted out and classified under the Reserve assets/Other claims residual category. Assets and liabilities are not recorded separately.

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# The Measurement of External Debt and International Reserves – The Russian Federation's Experience[1]

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One of the most important problems, widely affecting the development of the Russian economy, is the problem of external debt. In particular,a large external debt exerts a significant influence on the level of international reserves of the country.

When making decisions in the sphere of economic policy this factor should be considered. These decisions are based on the analysis of the statistical data. Here arises the problem of obtaining reliable data on external debt and international reserves and its role is increasing rapidly.

The problem of measurement of external debt and international reserves is nowadays of paramount importance to the Central Bank of Russian Federation (CBR).

The CBR presents data on transactions related to external debt and international reserves in a range of balance of payments publications since 1993. The development of a comprehensive database on external debt and the creation of appropriate presentation forms of published information is considered as the next important step.

### *International reserves*

An extensive database on gold and currency reserves of the CBR, that make out more then 95 per cent of gross international reserves of the country, has been worked up by the Balance of Payments Department. The underlying principle of the database is the transaction reporting system that gives the ability of obtaining all kinds of information. The data is published on a regular basis (every five days) that enables to monitor the level of international reserves efficiently.

### *External Debt*

The database containing debt of individual borrowers has been developed to a large extent. The data is classified by the following sectors:

- General government, including federal and local governments
- Banks
- Nonfinancial enterprises

The first step that the CBR made in order to obtain information requested for the balance of payments and international investment position was collecting the data on external transactions of *resident banks*. For these purposes a special report form has been worked out by our Department.

The report form for banks was introduced in 1993. Since then the database has been developed in two directions: improvements have been made in the report form and a special data processing system has been developed, in scope of which the maximum coverage of banks can be achieved.

The last updated version of the report form has been applied since 1998. It follows all the methodological principles given in BOP standards. The framework of the report form gives the ability to classify assets and liabilities of banks in details (by financial instruments, maturity, debtor/creditor etc.). Also methodological guidance for banks has been expanded as a result of experience in cooperation between compilers and reporters. The banks with large-scale external transactions submit reports on a monthly basis. The other banks submit reports on a quarterly basis.

As for collection of data on *General government external debt* the Balance of Payments Department compounds information obtained from different sources.

The Ministry of Finance provides the CBR with information on *Federal government external debt*.

The collection of information on *indebtedness of local governments* is based on reports that the residents should submit according to foreign exchange regulations. In order to borrow funds from

1 *The full version of the paper will include tables in slides demonstrating some of the report forms developed by the Balance of Payments Department as well as the forms of presenting the information.*

abroad (with maturity more than 180 days) the local governments must receive special permission from the CBR and submit reports to the Department for Foreign Exchange Regulations when external transactions occur.

However, the reporting data can not directly be put in the balance of payments and international investment position. They should be substantially processed in order to bring them in to line with the BOP methodological principles. For these purposes a special data processing system has been introduced.

In addition to reporting information since1998 our Department conducts a survey of local governments on a quarterly bases. Main descriptions of loan agreement (or bonded debt), such as country, maturity, currency etc. are reflected in forms worked out especially for this survey.

The data on *external debt of nonfinancial enterprises* is also obtained from two sources: from reports that enterprises submit to the CBR according to foreign exchange regulations and from a special sample enterprise survey conducted by the Balance of Payments Department on a quarterly basis.

The work carried out by our Department, results in regular publications of the data on external debt of the country. The information is presented in a separate table and is published together with the report on the balance of payments of the Russian Federation.

At present much attention is paid to the improvement of the methods of calculating statistical information on General government external debt. The forms of presenting this information are also important. The Balance of Payments Department is developing a package of forms presenting the data on General government external debt. The tables have been constructed using different classifications that reflect in details the complicated structure of the debt and all related transactions.

Information of the abovementioned database affords the Department to make a reliable projection of external debt and international reserves considering also development of the country`s balance of payments. Besides, the "Data Template on International Reserves and Foreign Currency Liquidity", that is treated as a rather sound short-term forecast of international reserves, is under development.


## Résumé

### *Mesure de la dette extérieure et des réserves internationales*

*Un des problèmes qui influence le plus le développement de l'économie russe est celui de l'endettement extérieur. L`existence d`une base statistique correcte est une condition nécessaire pour l'analyse de l'influence exercée par la dette extérieure sur le niveau des réserves internationales du pays. La question de l'évaluation de la dette extérieure et des réserves internationales est de plus en plus importante, et la Banque centrale de la Fédération de Russie en fait une priorité.*

*Le Département de la balance des paiements de la Banque centrale de la Fédération de Russie accorde une attention considérable au perfectionnement de la base de données utilisée pour le calcul des indices de la dette extérieure et des réserves internationales. Des systèmes spécialisés de collecte et de traitement de l'information pour le calcul des réserves de la Banque centrale de la Fédération de Russie ont été créés, de même que des indices pour la classification de la dette extérieure suivant les secteurs (les administrations publiques, les établissements de crédit, les sociétés non financières).*

*La publication régulière de données sur l'endettement extérieur est le résultat de ce travail. L'information est présentée dans un tableau spécifique, publié en même temps que le rapport sur la balance des paiements de la Russie.*

*Un projet de présentation des données relatives à la dette extérieure au moyen de tableaux reprenant les différentes classifications est en cours.*

*La base de données permet aux experts du Département de faire des prévisions sur les réserves internationales, qui tiennent compte de l'influence exercée par le montant et la composition de la dette extérieure. Dans le cadre de ce travail, les principes exposés dans le "Data Template on International Reserves and Foreign Currency Liquidity", qui est considéré comme une prévision à court terme assez sure des réserves internationales, sont utilisés.*



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# The Measurement of External Debt and External Reserves The Case of the Czech Republic

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The Czech National Bank (CNB) is responsible in the Czech Republic for measuring external debt and external reserves and for compiling the balance of payments and the international investment position. The CNB is allowed to demand data on flows and on assets and liabilities for this purpose.

The information on external debt is available in three variables. The first is the international investment position, which includes all external liabilities. The second, external debt, represents liabilities excluding equity capital and equity securities. All this information is published quarterly. External debt is broken down as follows: by convertible and non-convertible currencies, by short-term and long-term debt according to original maturity, and by debtor and creditor sectors. Data are collected from the central bank, banks, brokers, government and non-financial institutions. The third variable is debt service. This covers liabilities longer than one year broken down by debtor and creditor sectors and by year. The data are collected from all banks and from selected non-financial institutions.

The data on external reserves are published monthly. Since April 2000 they have been published in accordance with the Special Data Dissemination Standards. The main sources are the balance sheet and central bank dealing.

The CNB uses the data on external debt and reserves for analytical purposes, especially in relative terms. The external debt and reserves figures are very important indicators of "external vulnerability". These indicators are broken down into four components:

## 1 Current account indicators

The current account indicators are:
*a) the current account deficit as a percentage of GDP,*
*b) the trade deficit as a percentage of GDP,*
*c) current account deficit financing by non-debt inflow (foreign direct investment).*

The trend and sensitive level are monitored. The sensitive level is considered to be 5% of GDP in the case of the current account and 10% in the case of the trade deficit. If the country is experiencing a current account deficit, full offsetting financing of the deficit by non-debt inflow is viewed as safe. In the Czech case, all indicators actually exceeded their sensitive levels during the period of greatest external imbalance and subsequent monetary turbulence in 1997. Since then, all three indicators have remained on the safe side of their sensitive levels, evidencing an improvement in the current account.

## 2 Debt indicators

***a) total debt as a percentage of GDP/exports***
The trend is monitored. For total debt, 40% of GDP is considered the sensitive level. Prior to 1998, the debt indicators had been increasing continuously, reflecting the role of foreign funds during the transition period and the increasing external imbalance. The ratio to both GDP and exports peaked above the sensitive level in 1997. Since 1998, the ratio to GDP has stabilised close to the sensitive level with a very moderate declining tendency. The ratio to exports has fallen rapidly owing to an increasing volume of exports.

***b) debt service as a percentage of GDP/exports***
The trend is monitored. The development of the debt service ratios is very similar to that for the total debt indicators. The small fluctuation in the slope of the curves reflects the repayment schedule.

A more concentrated volume of repayments represents an increase in the debt service ratio and a decline in the debt ratio in the period in question.

***c) international investment position***
The IIP shows more about the nation's liabilities than do the debt indicators. The IIP underwent significant changes during the transition period in the Czech Republic. A dominant factor has been inflow of foreign direct investment, which worsens the position. Nevertheless, foreign investors have made the most effective contribution to the restructuring of the supply side of the Czech economy.

## 3 Liquidity indicators

***a) coverage of highly mobile debt by international reserves***
Highly mobile debt represents debt service in the relevant year and short-term debt. The trend for this indicator is monitored. The international reserves currently more or less cover this debt in the Czech Republic. The ratio has been stable in recent years. This indicator did not increase so rapidly before the monetary turbulence. This might be explained by the exchange rate regime: under the fixed regime the central bank purchased foreign exchange during the period of strong capital inflow and created larger reserves.

***b) external reserves relative to three months' worth of imports of goods and services***
Three months' worth of imports of goods and services is considered the sensitive level. This period is usually necessary for arranging additional reserves. In the Czech Republic, the reserves have stood at four months' worth of imports over the last five years.

## 4 Other indicators

***a) ratio of external reserves to money supply***
The trend is monitored. External reserves represent one third of the money supply, with moderate fluctuations in recent years. This level was reached during the fixed exchange rate period.

***b) nominal and real effective exchange rate***
The trends are monitored. The effective exchange rates are calculated vis-à-vis 22 countries representing almost 90% of foreign trade. These variables indicate the tightness of the competitive environment for domestic undertakings compared with that abroad. There is a stable trend in the NEER and an appreciating trend in the REER. The underlying reason from the medium-term point of view has been the positive inflation differential. Nevertheless, over the past three years the changes in the REER have been due more to the NEER, since the differential is very modest.

Practical application of the indicators of external vulnerability, including debt and reserves, gives reasonable outcomes:

- all indicators worsened before the monetary turbulence, and those with a sensitive level exceeded that level;
- the reserves-related indicators reached their present level at the end of fixed exchange rate regime and since then have remained more or less steady;
- markets are more tolerant of a high indicator level – even if it is above the critical level – than they are of a deteriorating trend.

## Résumé

*L'allocution traite la mesure d'indicateurs extérieurs notamment pour les objectifs analytiques dans la Banque Nationale Tchèque. La plupart d'eux sont suivis dans l'expression relative. La dette extérieure et les réserves y jouent un rôle important. Lors de l'analyse le trend est suivi et quelques indicateurs sont comparés avec de niveaux sensibles de telle façon comment les marchés financiers les perçoivent. L'évolution des indicateurs mentionnés en République tchèque caractérise bien l'évolution réelle. Nombre de cas correspondent aussi avec une évolution spécifique dans la période de transformation.*

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# Collection of Financial Data from Companies – Statistics and International Accounting Standards

## *Contributed Papers*

## New Monetary and Financial Statistics Manual and International Accounting Standards

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This paper deals with differences between the methodologies in (1) the Fund's *Monetary and Financial Statistics Manual* (*MFSM*), published in 2000, and (2) "Draft Standard and Basis for Conclusions, Financial Instruments and Similar Items" (hereafter, Draft Standard) released in December 2000 by the Joint Working Group of Standard Setters (JWG) under the auspices of the International Accounting Standards Committee (IASC). The Draft Standard builds upon the IASC discussion paper, "Accounting Methods for Financial Assets and Financial Liabilities" (1997). The finalized version of the Draft Standard is expected to supercede IAS39 (current standard).

The *MFSM* and Draft Standard provide recommendations on the valuation of financial assets and liabilities for macroeconomic statistics and commercial accounting, respectively. The *MFSM* and Draft Standard recommend the valuation of most financial assets and liabilities on the basis of market prices or "fair values" (i.e., market-price approximations). However, the *MFSM* and Draft Standard differ in their recommendations for loan and deposit valuation. The *MFSM* recommends that loans be recorded at book value (i.e., historical cost plus accrued interest). Following the *MFSM* methodology, as soon as loans become tradable in secondary markets (and, therefore, have market prices or fair values), they should be reclassified as securities. The Draft Standard does not make this tradability distinction and, therefore, loans are not reclassified as securities if they are traded. The Draft Standard recommends that all loans and deposits be valued at market prices or fair values. The *MFSM* does not provide specific guidance on the valuation of deposits.

The fair-value methods in both the *MFSM* and the Draft Standard are based on present values—i.e., discounted values of future cash flows. The Draft Standard specifically recommends the use of credit-risk-adjusted discount rates in calculating the present values. For monetary policy and financial market analysis, fair-value and book-value data on loans and deposits have advantages and disadvantages. Fair-value data would reflect credit risks and interest-rate risk and would be consistent with the fair-value methods that are applied for securitized instruments and financial (credit) derivatives. Book-value data show the nominal amount of total financial obligations without imposing any of the estimation assumptions (e.g., discount-rate specifications and credit-risk adjustments) that are inherent in the fair-value method. Compilers in many countries would have difficulty in obtaining high-quality data on fair-valued loans and deposits.

A major issue for deposit valuation arises from the central role of the money supply and its deposit components for macroeconomic policy analysis. A framework for monetary policy analysis based on fair-value components of the money supply would need to be developed. Even so, monetary policy makers and analysts would still be expected to want book-valued data for use in more traditional analysis of the nominal and real money stock.

A choice between book value data and market/fair value data is not feasible, given the different data requirements for macroeconomic statistics and commercial accounting purposes. It is recommended that both types data be reported to compilers of monetary and financial statistics. Estimation of fair values for loans and deposits is inherently difficult, but should become easier with the development of detailed valuation formulas, databases, and well-specified estimation techniques that have been approved by supervisory agencies and regulators. Reporting of book-value data for the monetary and financial statistics is comparatively easy, given that such data are directly obtainable from existing information systems (primarily, general and subsidiary ledgers) and are already reported in nearly all countries. By definition, the compilation of book value data does not require the extensive use of estimation techniques.

Reporting of market/fair value for loans and deposits would be a useful augmentation of the data available for monetary policy and financial market analysis. The *MFSM* recommends the use of book-value data for loans and deposits in the compilation, at the macroeconomic level, of balance sheets for financial corporations. However, the *MFSM* also recommends that supplementary data be provided on expected loan losses. By subtracting expected loan losses from the book value data, 'realizable' values of loan portfolios (i.e., loans less expected loan losses) can be calculated. Adding fair-value data to the data sets already recommended in the *MFSM* will provide more information for thorough analysis of financial sector lending in the macroeconomic context. Similarly, reporting of market/fair value deposit data will be useful for policy purposes, if such data do not substitute for any of the book-value data that are needed. Such data would facilitate the development of new types of financial sector analysis, as well as reinforcing the existing types.

## References

International Monetary Fund, 2000, Monetary and Financial Statistics Manual.

International Accounting Standards Committee, 2001, Joint Working Group of Standard Setters, Draft Standard and Basis for Conclusions, Financial Instruments and Similar Items.

## Résumé

*Nouvelles propositions pour la comptabilité des instruments financiers ont des implications pour les statistique monétaires et financiers.*

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# Accounting for Stock Options in the United States

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The granting of stock options by companies in the United States has become an increasingly more significant form of employee compensation. According to estimates by the National Center for Employee Ownership, over the last decade the number of employees eligible for stock options has grown from about one million to somewhere between seven and ten million. Even more striking is the trend toward offering stock options to all employees in a firm, not just the top managers.

Compilers of U. S. national statistics are concerned that given the accounting rules for stock options, data on salaries and wages probably do not accurately represent workers' total compensation. The Bureau of Labor Statistics (BLS) recently completed phase one of a pilot study to collect data on the incidence of stock options granted during 1999. The survey found that 1.7 percent of all-private industry employees received stock options in 1999 and 2.4 percent of companies offered some form of stock options to their employees. Phase two will examine the feasibility of collecting cost data on stock options for use in BLS surveys.

Favorable U. S. accounting rules have helped fuel the growth of stock options. A stock option gives an employee the right to buy a certain number of shares in the company at a company-set grant price within a particular time period, often 10 years. The grant price is usually the market price at the time the options are granted. There is also a minimum time, known as the vesting period, before an employee can exercise the options. Stock options can be used as an alternative to cash compensation, and thus, the company does not have to record an expense at the time they are granted. Because an individual must stay employed with the company to exercise options, the granting of stock options is often seen as a way to keep key employees and reduce turnover.

Different corporate accounting rules and personal income tax consequences apply to the two types of stock options — incentive stock options (ISO) and nonqualified stock option (NSO) — available in the U. S. When an ISO is exercised, the entire gain on the sale of the stock is taxed only when the stock is sold and then at the more favorable long-term capital gain rates, assuming the employee is not subject to the alternative minimum tax. The employee must have held the stock for at least two years from the grant date and one year from the exercise date. In this case the employer would receive no tax deduction for the stock option transaction. If the employee does not meet required holding periods, then the gain is taxed as compensation, and the employer receives a wage deduction. ISOs have a cap of $100,000 (determined at grant time) on the amount of options that can be exercised in any year, up to a $1 million limit over 10 years.

The more common type of stock option is the nonqualified stock option (NSO), whose gain as of the exercise date is taxed as ordinary income, even if the employee decides to continue to hold the shares. The employer receives a deduction equal to the amount of income the employee must recognize. Although an NSO reduces the taxes paid by an employer, accounting rules do not require this deduction be taken on financial statements, which would lower reported net income.

However, companies must disclose in the financial notes of their annual reports information on stock options at the time of grant. The Financial Accounting Standards Board (FASB) has issued over the years three opinions on the accounting of stock options in financial statements. APB Opinion No. 25, issued in 1972, states that the intrinsic value of the option is measured as the difference between the exercise price and the fair market value of the stock when the option was granted. This difference, that in most cases is zero, is the compensation expense that must be recognized over the option's vesting period.

In 1995 FAS 123 was issued, but firms were still allowed to follow APB Opinion No. 25 if they chose. Under FAS 123 companies must determine a fair value of employee stock options at time of grant, using an option pricing model such as the Black-Scholes model, and reflect such value as a charge to earnings over the life of the option. The model must factor in the stock option's grant price, exercise price, expected life, volatility, and expected dividends, and the risk–free interest rate over the option's expected life.

As expected most firms opted to report under APB Opinion No. 25 since they could understate their true compensation costs and thus overstate profits. However, on March 31, 2000 FASB issued Interpretation No. 44 that tightened up the rules by requiring firms to recognize a compensation expense when they reprice stock options. Repricing of stock options is more common in an environment of declining stock prices.

These accounting rules and tax consequences have made the collection of consistent data concerning the treatment of stock options for U. S. national income and product accounts (NIPA) most difficult. The 1993 System of National Accounts does not give explicit guidance on stock options in the section on employee compensation. However, it is generally agreed that stock options have value and should be treated as compensation. The fact that NSOs and ISOs have different tax treatments should not affect in theory whether they are compensation. Also, the different accounting rules a firm can follow in reporting profits and expenses leads to inconsistent source data for compiling the NIPA.

Estimates for wages and salaries in the NIPA come from tabulations by the BLS for the unemployment insurance program (UI). UI data, derived from administrative tax records, are assumed to include the exercising of NSOs, but not the exercising of ISOs. The main source of data for corporate profits in the NIPA is tabulations of federal corporate income tax returns by the Internal Revenue Service (IRS). Stock options are not identified separately on tax forms, but the exercise of NSOs would trigger an expense deduction for corporations. However, these tax data are not incorporated into the NIPA until the second annual revision for a given year.

A further shortcoming of the data is that the value of the stock option is included only when the option is exercised, even though most agree the option had value at the time it was granted. The NIPA compilers agree, in theory, with this view and believe that some type of option–pricing model should be used to value the option, similar to the accounting recommendations of FAS-123. However, this preferred treatment can not be implemented at this time due to lack of source data.

In U. S. financial accounts, in any given period net equity issuance by nonfinancial corporations is affected by a buyback of shares in anticipation of stock options being exercised now or in future periods, as well as by new stock being issued when a stock option is exercised; the issuance value would be equal to the exercise price, not the market price. In addition, for the household sector a stock buyback would be recorded at market value, whereas an exercised option would be recorded at the exercise price. However, the exercise of the option would result in an instantaneous capital gain in equity holdings on the household sector balance sheet.

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## Résumé

*Les règles comptables et la législation fiscale compliquent l'enregistrement des stock options dans les comptes de revenu national et de produit et dans les comptes financiers des Etats-Unis.*

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# The Non-resident Question and National Statistics

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The expansion of multinational enterprises and the developments of the Economic and Monetary Union definitely have contributed to the intertwining of the national markets in Europe This will surely be reinforced with the generalisation of the Euro in the coming year. This phenomenon is even more apparent in a small open economy like Belgium.

For elaborating national statistics, the notion of non-resident is essential. This notion is clearly defined in some statistical areas such as the balance of payments whereas in other fields it is more implicit and may lead to some discrepancies. The purpose of this paper is to give a brief overview of the definitions and to draw the attention on the difficulties arising in the treatment of non-resident enterprises.

## Definition

In the balance of payments statistics, that precisely record the transactions (change of ownership) between residents and non-residents, the definition comes from the Manual of Balance of payments published by the International Monetary Fund.

*An institutional unit is considered as resident of a country if its centre of economic interest is located in the economical territory of the country.* The question of the enclaves is an other issue and the economical territory is supposed to be the geographical territory. The concept of economic interest is the core of the definition.

*An enterprise has an economic interest in a country when it exercises in this country activities of producing goods or services*. There must be a place of production in exploitation or intended to be exploited during a prolonged period According to this definition, a resident enterprise can be incorporated in the country or abroad or can be controlled by residents or non-residents. In case of production of goods, the place of production is easy to identify but it is not the same with some services and in particular with trading.

## Non-residents in the statistics

The payments statistics are usually based on the reporting of the financial intermediaries The latter have to distinguish between residents and non-residents using information coming from their customers or the administrative data. Foreign companies established abroad are clearly non-resident; the difficulties arise with the foreign companies making business in the covered country.

Two types of foreign companies working in a country have to be distinguished :
- those working through an *establishment* or local unit hiring workforces in the country
- those just using in the country an *accountant's office* or representative acting for them

For the balance of payments statistics and for the national accounts the establishments are considered as residents and they directly contribute to the economy of the country where they are located. On the other hand, the companies using accountant's offices are non-residents; the heavy business made on behalf of foreign companies have little impact on the local country except for some fees and services and the profit made is soon brought back. In the financial accounts, the assets and liabilities managed by an establishment are also recorded in the local country.

For the fiscal administration, the two main taxes on enterprises are the income tax and VAT. In most European countries, the foreign establishments are liable to income tax. The taxation is calculated on their operations in the country, unlike the national companies that are taxed on their whole operations. The enterprises passing through an accountant's office are not subject to income tax. For the VAT, the tax is due on defined transactions in the country no matter who is doing them. This means that both the foreign establishments and the accountant's offices are liable to VAT.

In external trade, the statistical regulations provide for the recording of flows of goods across the national borders Those flows are recorded even though there is no change of ownership (stock)

and regardless of the residence of the operators. This means for example, that the shipment by a American non-resident via an accountant 's office of merchandises from Brussels to an other non-resident in London will be included in the external trade of Belgium.

The part of this non-resident using accountant's office has grown very fast in Belgium. So, their turnover declared for the VAT has been multiplied by 2.5 in the last 5 years, reaching almost 10% of the total. In external trade, the growth was the same and their part in 2000 is 24% of the total of exports and 20% of imports.

## Corrections for the national concept

The integration of external trade statistics in the current account of the balance of payments and in the national accounts requires some corrections to be made on the trade for non-residents. Only those using an accountant's office must be corrected because exports and imports made by the establishments of foreign companies belong effectively to the local economy. Information from the VAT administration permits to classify the accountant's offices in two categories:

- the "*pure*" that is to say, the non-resident not having any trade in goods with the residents (nor buy nor sale)
- the "*mixed*" non-resident that trades goods with residents and non-residents.

The transactions of the *pures* were removed from the external trade statistics for integration in the national current account because there are no transactions between resident and non resident. For the *mixed,* it is not so simple and hypotheses have to be made on their behaviour. The imports by those non-residents are supposed to be directly sold to a resident with a profit margin and similarly, their exports are supposed to have been directly purchased from a resident at a price less their profit margin on export. So, the current balance is adjusted for the profit earned by non-resident that disturbs the national statistics.

The same argument also applies for the operation made abroad by national enterprises. That means that the imports or exports realised abroad through a foreign accountant's office have to be added to the external trade statistics to be booked in the balance of payments. Of course, the trade between the company and his accountant's office has to be neutralised because there is no change of ownership.

The use of accounts of resident enterprises must take account of the fact that these enterprises may have establishments abroad (the activity due to a foreign accountant's office is included in the accounts but has not to be corrected because it belongs to the national concept). For national statistics, the turnover, wages, investments,...realised in the foreign establishments have to be removed from the resident's data. As the geographical breakdown of the accounts is rarely available, extrapolations are made on the basis of the employment's data usually better known. For the financial accounts, the assets and liabilities of foreign establishments must also be eliminated but in this case extrapolation is riskier and thus often neglected.

## Reference

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System of National Accounts, 1993, IMF, Eurostat, OECD, UN and World Bank.

## Abstract

*The definition of non-resident is essential for elaborating the national statistics. The development of multinationals making business in other countries through establishments or accountants' offices disturbs the data usually collected. Some corrections are examined in order to achieve coherent national statistics.*

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# Treatment of Retirement Benefits and Stock Options in National Accounting

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In national accounting, there is a framework consisting of three accounts, flow, stock, and reconciliation. In this framework, income gains in the flow transactions are distinguished from holding gains. However, it is hard to make a clear distinction in some aspects. This paper focuses on retirement benefits and stock options whose treatments have been frequently discussed in business accounting and examines how they should be treated in national accounting.

Recently, in business accounting, liabilities related to compensation, such as actuarial liabilities of retirement benefits and stock options, has been principally evaluated at fair value and some of gains/losses arising from revaluation of these liabilities has been already included in compensation cost. As for retirement benefits, the change in value of actuarial liabilities of defined-benefit pension plans are recorded as compensation cost in Japan's Accounting Standards and Financial Accounting Standards (FAS).[1] As for stock options, the Joint Working Group of Standard Setters in International Accounting Standard Committee (IASC) drafted a paper suggesting that the change in value of stock options during the vesting period should be included in compensation cost, though this idea is not yet a majority opinion even in business accounting.

In Japan, the liability amount of defined-benefit pension plans cannot be ignored against the background of rapid aging. It is strongly required that such liabilities should be recorded at fair value in national accounting. However, the way of recording these liabilities is not precisely defined in 93SNA. If national accounting records gains/losses arising from revaluation as compensation of employees as business accounting does, this treatment will be inconsistent with that of gains/losses arising from changes in the benefits structure. In addition, from the practical point of view, this will probably make compensation extremely volatile. Once interest rates increase, actuarial liabilities may decrease rapidly and corporations may get windfall earnings. Considering these factors, it seems better to treat gains/losses arising from revaluation as holding gains.

As for stock options, it is inferred from the statement of 93SNA that the option premium at the grant date should be regarded as compensation of employees. However, 93SNA does not refer to the treatment of gains/losses arising from revaluation either. In the US national accounts, gains arising from revaluation of stock options are widely recognized as compensation of employees.

From the viewpoint of consistency, it is obvious that national accounting should not include gains/losses in compensation costs. This is because the gains/losses of stock options reflect changes in stock prices directly. Our analysis suggests that the total amount of compensation of employees in the US will change substantially if stock options granted after the mid-nineties are exercised one after another.

In summary, it is conceptually desirable, for the sake of consistency under the current SNA, to treat gains/losses arising from revaluation of retirement benefits and stock options as holding gains. Nevertheless, this conclusion is based on consistency and may not focus on the real essence of these liabilities. In a sense, they spotlight the recent actual economy where the distinction between income gains/losses and holding gains/losses are ambiguous. Thus, statisticians and compilers of national accounting should reexamine the concept of national accounting, and at the same time, should disclose detailed data. This will enable users to recompose the data and understand the impact of an alternative approach on the economy even under the present system of national accounts.

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# Measuring the Service Earnings of Financial Intermediaries – The role of the balance sheet in the production process

*C B Wright (Bank of England)*

Wherever goods or services are produced commercially, it is normally possible to arrive at broadly reliable estimates of their contribution to domestic output. The situation for financial intermediaries is different because of the special role of the financial balance sheet in their business.

The System of National Accounts' (SNA) concept of value added – essentially gross output less intermediate inputs - generally forms the principal building block for the assessment of sector or industry performance from which meaningful estimates of the operating surplus can be derived. The basic SNA framework separates non-financial from financial assets, with only the former seen as contributing to the productive process. But, for financial intermediaries, the financial balance sheet is the main tool used to generate revenue and profit.

Financial intermediaries stand between would-be counterparties to transform what would otherwise be a mismatch in their maturity or risk preferences. Thus, a credit grantor may attract short-term deposits and use the funds to finance longer term lending, or a market maker may buy/sell financial assets against a prevailing market swing.

Recognising the use of the financial balance sheet as part of the productive process raises conceptual difficulties. These stem from the structure of the SNA, where flows of property income and the realisation of holding gains and losses are viewed as re-distributions of income and net worth. Under such a framework, the intermediary might record production costs (intermediate consumption) but no sales (gross output), and hence would show negative value added in the Production Account and a persistent operating deficit.

Central to this view is the principle that the acquisition or disposal of a financial instrument is not wealth enhancing. At the time of a transaction, the "purchaser" acquires one asset in return for another of equal value. The net worth of the counterparties is unchanged. The value added of the intermediary is therefore not embedded in its tangible "products" but rather in the less tangible process of risk transformation or liquidity provision.

Linking the earnings of the intermediary to the specific services provided therefore raises further conceptual and methodological difficulties. The key question concerns the basis for partitioning of the revenues earned by the intermediary from its balance sheet operations in a way which reflects the value of the services received by different counterparties. A second, but no less important issue is whether all of the balance sheet revenue earned can be attributed to the provision of financial services or whether a further partitioning of revenue is required between that part which is directly linked to financial intermediation, and that which reflects the intermediaries' use of its own funds to deliver a return on savings, in the same way as is assumed for other economic sectors.

On the first question, economic theory suggests that the provision of intermediation services will expand to the point where marginal costs equal marginal revenues. Put another way, so long as the intermediary can maintain a spread between prices/rates charged and paid, there will exist an incentive to undertake additional business. In the presence of efficient money and securities markets, the prevailing "market" price, available to the intermediary for inter dealer

trading, provides the limiting price below which he will not be prepared to sell, or above which he will not be prepared to buy. It is this pure market price which therefore defines the boundary for the partitioning of earnings and its attribution as an imputed charge for services received by counterparties. This theoretical construct is adopted by the SNA as the basis for recording value added by financial intermediaries, including market makers – but it has not yet been implemented in most countries.

The answer to the second question relating to the partitioning of earnings appears to follow from the answer to the first. If the value of services delivered is given by these accumulated "spread earnings", this will typically not account for the whole of balance sheet earnings. What remains can reasonably be interpreted as the return on own funds, and thus contribute to broader

measures of income but not to value added or the national accounting concept of the operating surplus.

This conclusion is likely to have its greatest impact on estimates of the service earnings of market makers. A substantial part of balance sheet earnings for such firms will typically result from short term position taking, arising both from passive entry into open positions, associated with the pattern of customer driven trades, as well as more active portfolio management. The issue here then is whether it is reasonable to exclude such earnings from estimates of value added, as implied by the simple application of theory and as required by the SNA, or whether such activities form an indistinguishable part of the role of traders in the promotion of efficient and liquid capital markets.

The case for inclusion of such revenues would seem to be strongest when based on the premise that informed and active own account trading has a stabilising influence on markets, by encouraging intervention as prices move through a perceived floor or ceiling. In practice, empirical support for this view is difficult to gather but, even if it were possible to substantiate, at least two consequential difficulties would arise: how to allocate this additional activity between consuming sectors; and why in any case it is only the own account trading of intermediaries which constitutes a productive activity.

On the former question, neither theory nor pragmatism offer any reliable guidance. If own account trading revenues are to be viewed as service earnings, then the benefits (valued added) must be seen as impacting across all market users, including potential new issuers and investors. However, the nature of these revenues is that they are generated, in some sense, from offsetting changes in the net worth of other sectors, but in a way which may be almost inversely related to the likely benefits received – a household that sells securities in a falling market only to buy them back later at a higher price as the market recovers, may perceive little benefit from the trader's role in limiting and reversing a potentially deeper market collapse.

On the latter question, the argument for regarding the own account trading of intermediaries as different in nature from that of other sectors may be stronger. Market making requires the intermediary to quote two way prices and to accept or deliver securities resulting from consequential trades. This will normally imply the need to hold stock, so that the temporary existence of short or long open positions is an integral part of the business process. Moreover, since all own account trading relies upon the intermediary's market intelligence and investment strategy, it is reasonable to regard revenue generated by this wider aspect of own account trading as equally

linked to the primary activity of market making, because of its scope for spreading overheads and thereby contributing to a competitive narrowing of dealing spreads.

In summary, it does appear that the balance sheet earnings of certain economic units represent productive activity. What is less clear is whether, for these cases, it is meaningful to regard total earnings from the balance sheet as added value in the national accounting sense, or whether it is necessary to partition earnings using some theoretical rule.

## Résumé

*Chaque fois que des marchandises ou des services sont commercialement produits, il est normalement possible d'arriver à des estimations **g**é**n**é**r**alment fiables sur leur contribution à la production nationale. La situation pour les interm**é**diaires financiers est diff**é**rente en raison du r**ô**le sp**é**cial du bilan financier dans leur activit**é**.*

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# The Relationship between Central Banks and Statistical Institutes

## *Contributed Papers*

## The Relationship between the National Bank of Slovakia and the Statistical Office of the Slovak Republic

*Gregor Bajtay (National Bank of Slovakia)*

In Slovakia, the compilation of national statistics is the responsibility of the Statistical Office of the Slovak Republic (hereinafter: SO SR). This is laid down in the National Statistics Act which defines the position and function of SO SR. The statistical performance is ensured through the Programme of State Statistical Surveys, under which SO SR publicise statistical reports. Reporting units are obliged to fill in these reports and send them to SO SR within prescribed forms, terms and periodicity. The Programme of State Statistical Surveys, which is a generally binding legal document, also includes statistical reports for individual ministries and the National Labour Office.

In the interest of monetary policy, banking supervision, and the compilation of the balance of payments, the National Bank of Slovakia (NBS) controls, organises, and ensures the collection and processing of statistical data from the banking sector and selected non-bank entities. The NBS is authorised for these activities by the provisions of the Banking Act, the Foreign Exchange Act, and the joint decree of the NBS and the Ministry of Finance of the SR.

The NBS and SO SR are the two most important components of the statistical system in the Slovak Republic; they closely co-operate and supplement one another. Co-operation between the two institutions is essential for their activities and is guaranteed by the cooperation agreement approved by the Governor of the NBS and the Chairman of SO SR. The agreement is not limited in time and guarantees a free exchange of information and data between the two institutions. The co-operation takes place in two main areas, i.e. in providing statistical data and the exchange of methodological information between the two institutions.

In the area of methodology, SO SR is responsible for structure and classification of sectors by economic activity and all generally binding codes and registers, used in the statistical information system and provides NBS with all this information. The SO SR is responsible for the harmonisation of Slovakia's national statistics with those applied in EU countries. In the area of banking, this is ensured through the setting of requirements for the implementation of changes in the methodology of banking statistics. The NBS asks SO SR to set its requirements for changes in the area of banking and foreign exchange statistics every year. Since SO SR is responsible for the compilation of national accounts and has already adopted the methodology of ESA 95, the NBS gradually adjusted the principles of banking and foreign exchange statistics so that the national accounts could be compiled in accordance with this methodology.

The NBS provides SO SR with methodological information about the compilation of banking, foreign exchange, and balance of payments statistics, including guidelines for the assessment of foreign direct investments. Apart from data for banking and foreign exchange statistics, the NBS supplies SO SR with detailed information on cross-checks between data contained in the individual statements of banking and foreign exchange statistics. The two institutions provide each other with a methodological explanation of some selected topics and ensure the par-

ticipation of SO SR and/or NBS employees in seminars and lectures organised by those institutions. Both of them exchange information as soon as it becomes available. Some statistical data is made available before being officially published, though, of course, there is a notice saying which of them may be published, at what time and who is responsible for the data.

The SO SR supplies NBS with data necessary for the compilation of the balance of payments, such as data on exports and imports by country and economic groupings (monthly and for the period since the beginning of the year), and the commodity structure of exports and imports according to SITC rev. 3 for the calculation of the trade balance. For
the prediction of inflation and the course of economic development, SO SR provides NBS with detailed statistical data on consumer price development, including the methodology applied in the calculation of price indices and data for the determination of inflation in terms of the consumer price index and other indicators of inflation (core and net inflation). In addition to information on economic development, SO SR provides NBS with all its publications and data relating to the compilation of national accounts free of charge.

The NBS sends SO SR the monthly and quarterly balances of payments, and the annual balance of payments with details of the capital and financial account compiled according to the requirements of IMF (Manual No. 5), including data on selected payment items.
The Bank also provides details about the international investment position of the SR. For
the compilation of the national account, SO SR receives aggregated data from the banking sector in the required structure, consisting of data on the assets and liabilities of commercial banks, data on deposits, loans and interest rates, foreign exchange positions, and data on
the receipts and payments of commercial banks in convertible currencies. In the past, this information was only available in the form of monthly publications, but since the beginning of 2001, it has been issued in electronic form on the web site of NBS (in the part 'Banking Sector'). The NBS sends SO SR individual data, such as assets, liabilities, loans, deposits, and annual aggregated wage statistics. SO SR may use this data on NBS only for its internal needs, or for compilation of the national accounts of the Slovak Republic. It must not be published or made available to a third party in another way. The NBS also provides regular information about the inflow and outflow of foreign direct investment by country, region, and sector. In addition, the Bank provides information on exchange rates, aggregates for
the Statistical Yearbook and other annual publications of SO SR, and other information for the compilation of current national accounts for the sector, e.g. financial corporations, accumalation accounts, financial accounts, balance sheet accounts, foreign accounts according to the possibilities of the NBS. As a reporting unit, the NBS provides data in selected reports specified in the Programme of State Statistical Surveys. On request, the NBS sends the Statistical Office surveys provided to international organisations, containing aggregate data on the SR.

Co-operation in the area of SDDS is treated separately. As SO SR is a national
co-ordinator of the Slovak Republic for SDDS, the NBS collaborates closely with SO SR.
The NBS updates metadata from data categories that fall within its competence and is partly responsible for realisation of the 'national summary data site', as well as helping to prepare the advance release calendar, and makes sure that the data is published in time.

## Résumé

*La contribution analyse en détail la coopération entre la Banque Nationale de la Slovaquie et l'Institut national de la statistique de la Slovaquie. La coopération se déroule dans deux domaines principaux: prestations de données statistiques traitées et échange des informations de caractère méthodique. Elle est garantie par l'accord de coopération conclu, d'après lequel les deux instituts échangent les informations traitées gratuitement, immédiatement après leur réception, c'est-à-dire encore avant leur publication officielle.*

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# The relations between the Banco de Portugal and the Instituto Nacional de Estatística – Recent experience

*Orlando Caliço (Banco de Portugal)*

## Legal framework governing the intervention of the Instituto Nacional de Estatística and the Banco de Portugal in statistical collection and production

In Portugal, competences in the field of the statistical function of the Banco de Portugal, in its capacity as the central bank, and of the Instituto Nacional de Estatística (INE) (National Statistical Office) are directly provided for by law.

In accordance with the provisions of the law governing the National Statistical System, the notation, computation and disclosure of official statistical data are exclusively incumbent on the INE.

The Organic Law of the Banco de Portugal has entrusted it with specific competences regarding the collection and compilation of statistical data for the production of monetary, financial, foreign exchange and balance of payments statistics, which are traditionally statistical production areas of the Banco de Portugal.

More recently, the adaptation of the Organic Law of the Banco de Portugal to the participation in the European System of Central Banks, envisaged the competence of the Banco de Portugal within the scope of co-operation with the European Central Bank.

However, the competence of the Banco de Portugal regarding the collection of statistical data is broader, since it is explicitly provided for by law that the Banco de Portugal may require from any public or private body, in addition to the statistical information required for the production of the statistics referred to above, whatever information deemed necessary for compliance with the tasks entrusted to it.

On the other hand, and still within the scope of the data collected and of its use for statistical purposes, pursuant to the provisions of the law, data collected for Credit Risk Centralisation can be used for that purpose.

## Basic principles governing the National Statistical System

Composition - the National Statistical System is composed of the Conselho Superior de Estatística (Senior Statistical Council) and of the INE.

Statistical co-ordination - it is incumbent on the Conselho Superior de Estatística to co-ordinate the statistical system, approving concepts, definitions, nomenclatures and other technical statistical co-ordination instruments.

Statistical centralisation - the notation, computation and disclosure of official statistical data is exclusively incumbent on the INE. The INE can delegate the official notation, computation and co-ordination of statistical data to other public services.

Considering that the Banco de Portugal does not have the nature of a general government service, the delegation of competences is not possible.

## Co-operation between the INE and the Banco de Portugal:

### *Within the legal framework of the National Statistical System*

In accordance with the provisions laid down in the law governing the national statistical system, the Banco de Portugal participates in the Conselho Superior de Estatística with a permanent representative (currently the Vice-governor, who is responsible for the Economic Research and Statistics Departments) and with an alternate (the Head of the Statistics Department).

In addition to his participation in a significant number of Working Groups that operate within the framework of the Conselho Superior de Estatística, the representative of the Statistics Department of the Banco de Portugal shall preside over the "Monetary and Financial Statistics" and the "External Economic Relations Statistics" Working Groups.

The participation of the Banco de Portugal in the Working Groups is usually guaranteed by two representatives: one from the Economic Research Department and the other from the Statistics Department.

### *Within the framework of the bilateral agreements established through a Protocol*

Outside the legal framework of the National Statistical System, the co-operation between the two autonomous and independent institutions is made through arrangements between the two parties, which take the form of protocols.

After the creation of the Statistics Department, the following protocols have been signed:

- Protocol on the accession to the Special Data Dissemination Standard (SDDS) (20 March 1998).
- Protocol on the preparation of the Portuguese National Accounts (20 March 1998)
- Protocol on the joint undertaking of a Quarterly Non-financial Corporations Survey (29 November 1999)
- Protocol on the Household Wealth and Indebtedness Survey (14 March 2000).

The *Protocol of accession to the Special Data Dissemination Standard* provided for the national co-operation framework, with a view to ensuring the reply to the SDDS of the International Monetary Fund. This protocol was signed between three institutions – Ministry of Finance, Banco de Portugal and INE - defining:

a) the responsibilities of each party regarding the data to be made available;
b) the responsibility for the co-ordination, which was entrusted to the Banco de Portugal;
c) the co-ordinators in each of the three institutions.

Given the relevance of the issue in question and the concertation model defined, special mention should be made of the Protocol on the preparation of the Portuguese National Accounts.

The *Protocol on the preparation of the Portuguese National Accounts* formalises the arrangement between the INE and the Banco de Portugal, according to which, in the implementation of ESA 95, the preparation of the financial component of the National Accounts is the responsibility of the Banco de Portugal, in co-operation with the INE.

Obviously, the preparation of the two components of the Accounts by two different entities can only be possible in a context of close technical co-operation and sense of institutional responsibility, that prevents any uncomfortable situation for any of the two institutions.

Having this objective in mind, the following co-ordination structure has been established in the protocol:

- A Standing Concertation Working Group, chaired by the INE and comprised of the following members: co-ordination - Head of the Co-ordination and National Accounts Department of the INE and Head of the Statistics Department of the Banco de Portugal; Technical support - 3 experts from the Banco de Portugal and three experts from the INE;
- A Monitoring and Scientific Assessment Committee, chaired by the Banco de Portugal, comprised of 4 experts from the INE, 4 experts from the Banco de Portugal and 4 university professors, as independent experts, contracted for three-year periods, 2 by the Banco de Portugal and 2 by the INE.

Two main factors were considered underlying the participation of university professors with the status of independent experts: (i) the need to introduce qualified external experts to make independent assessments easier and (ii) the need to increase the expertise at a more concrete and detailed National Accounting level, namely at universities, given the implications of the utilisation of National Accounting figures as key benchmarks for the assessment of the national economic policy.

Considering that in Portugal the process of preparation of National Accounts was behind the schedule – in the beginning of the current year, 1995 and 1997 data were reported to Eurostat – it was not possible to incorporate the external component in the Monitoring and Scientific Assessment Committee, since the compliance with the timetable was not compatible with the desired assessment and pedagogical practice.

However, for this first exercise, the co-ordination structure has showed its value, adjustments having been made to the two components of the accounts – financial and non-financial –, which probably would not have been possible, had only one entity carried out the two exercises. The different sources, procedures and the "sound competition" improved the quality of the exercise. It became however clear that this process imposes the permanent availability of the contact persons of the two institutions looking for consensus and avoid inflexible positions. Otherwise the exercise would come to a standstill and it would be impossible to pursue it autonomously, albeit in co-operation.

The *Protocol on the joint undertaking of the Quarterly Non-financial Corporations Survey* formalised the transfer to the INE of this survey, which the Banco de Portugal had been carrying out since the fourth quarter of 1996. Since the Banco de Portugal felt the need to have available infra-annual quantitative data to assess the economic situation and given that inquiries made on the basis of the accounting data available at the INE were based on an annual survey, the Banco de Portugal decided to make a survey on a quarterly basis, on a sample of non-financial corporations. Since it was known that the launching of a quarterly survey was a project that the INE intended to implement, the Banco de Portugal agreed with the INE that, once the latter was in a position to launch the survey, this issue would be analysed again. In 1999 the INE communicated that it was prepared to launch the said survey, agreement having been reached on the following: (i) a new joint survey (Banco de Portugal + INE) would be conducted, its financial costs being borne in equal parts; (ii) the methodological definition would be made by experts of the Banco de Portugal and the INE; (iii) information on an individual basis would be made available for the two institutions; (iv) surveys would cover a higher number of companies, so as to include the whole set of relevant sectors; (v) the survey followed by the Banco de Portugal would be taken as a basis, adjusted according to experience acquired; (vi) contacts with companies would be centralised at the INE; (vii) basic information would be one of the elements for the production of quarterly accounts.

The *Protocol on the Household Wealth and Indebtedness Survey* was intended to profit from the regular survey of the INE of household income and expenditure, also taking the opportunity to launch an inquiry on the wealth and indebtedness, the Banco de Portugal bearing part of the costs. This is a second operation, given the results of a similar operation carried out in 1994.

### Organisation of the statistical function at the Banco de Portugal

With the setting up of the Statistics Department of the Banco de Portugal at the beginning of 1997, the statistical function was centralised at this Department, the main task entrusted to it being the production and disclosure of the statistics, which are the responsibility of the Banco de Portugal.

More specifically, the Statistics Department of the Banco de Portugal is responsible for:

- Collection and handling of basic data to produce:
  a) Monetary, financial and foreign exchange statistics;
  b) Balance of payments statistics;
  c) National financial accounts;
  d) Estimate of non-financial national accounts;

- Management of the "Balance Sheet Data Office of Non-financial Corporations" and of the "Central Credit Register (households, companies and general government)";

- Maintenance and development of the statistical database of the Banco de Portugal, as the major means of access of the Banco de Portugal's users to statistical data, in particular of the Research Department as the main user.

- Disclosure, through the Statistical Bulletin and the Banco de Portugal's Website, of the statistics prepared at the Banco de Portugal;

- Ensuring the reporting to national and international organisations of the statistical data of the Banco de Portugal's responsibility;

- Disclosure of the statistical methodologies and analyses prepared at the Department, through the publication of Supplements to the Statistical Bulletin;

- Representation of the Banco de Portugal at: Conselho Superior de Estatística; Statistics Committee of the European Central Bank; the Committee on Monetary, Financial and Balance of Payments Statistics of Eurostat; Central Balance Sheet Data Offices Committee, and in the Working Groups of the Central Credit Registers and of the OECD.

### Co-ordination of the external participation of the Banco de Portugal and of the INE

In the areas where tasks are shared the national representation is normally ensured by two representatives, one from the INE and the other from the Banco de Portugal. This is the type of representation in the Committee on Monetary, Financial and Balance of Payments Statistics of Eurostat, as well as in the Working Groups of the EUROSTAT on:
- Balance of Payments
- Financial Accounts
- National Accounts

On the other hand, the Banco de Portugal participates in co-operation with the INE and the Ministry of Finance in the reporting to be made within the framework of the Protocol on the excessive deficit procedure.

### Summary

*The Central Banks, in the fulfilment of their duties, need a very significant amount of statistical data. In three fields – monetary and financial statistics, balance of payments statistics and foreign exchange statistics –, as the main information sources were within the financial system, the Central Banks themselves were in charge of their preparation. With respect to statistics in other fields, the National Statistical Offices are the main source of information. In the past years, the requirements imposed on the National Statistical Systems, in terms of quantity and quality, increased sizeably, bringing about the necessity to search for new solutions at the individual country level. In this paper, we presented the recent Portuguese experience regarding the co-operation in the statistical production between the Banco de Portugal and the Instituto Nacional de Estatística, by means of protocols between two independent institutions. Examples are also given, applied to four areas: national accounts, non-financial corporations surveys, households surveys, and co-operation in the replies to international organisations (SDDS of the International Monetary Fund).*

### Résumé

*Les Banques Centrales, afin de remplir leurs obligations, ont besoin d'un volume très significatif d'informations statistiques. En ce qui concerne trois domaines – statistiques monétaires et financières, statistiques de la balance des paiements e statistiques relatives aux taux de change –, comme les principales sources d'informations étaient situées dans le système financier, c'étaient les banques centrales elles-mêmes qui se chargeaient de leur élaboration. Pour ce qui est des statistiques dans d'autres domaines, les Instituts Nationaux de Statistique constituent la principale source d'information. Ces dernières années, les exigences auxquelles sont confrontées les Systèmes Statistiques Nationaux, en termes de quantité et de qualité des informations statistiques, ont augmenté d'une façon significative, imposant la recherche de nouvelles solutions au niveau de chaque pays. Dans cet exposé, on présente l'expérience portugaise récente en ce qui concerne la coopération dans la production statistique entre la Banco de Portugal et l'Institut National de Statistique, par le biais de protocoles d'accord entre deux institutions indépendantes. Ensuite on donne des exemples avec leur application en quatre domaines: comptes nationaux, enquêtes auprès de sociétés non financières, enquêtes auprès des ménages et coopération dans la réponse à des organismes internationaux (SDDS du FMI).*

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# Cooperation between Central Banks and Statistical Offices at Supranational Level

*Bart Meganck (Eurostat)*

1 The signing of the Treaty of Maastricht in February 1992 set Europe on the road to monetary union by the end of the century. Eurostat was keen to anticipate the new statistical needs which monetary union would give rise to, in terms of both the economy "proper" (essentially the responsibility of the statistical offices) and the financial sphere (basically the jurisdiction of the central banks). The Statistical Programme Committee (SPC), which was created in 1988 and brings together the Directors-General of the national statistical offices, was able to meet many of those needs, particularly those relating to the economy "proper". Others, however, could only be met with the help of the central banks. The European Commission was all too aware that central banks were accustomed to deciding for themselves what information they required for policy purposes, and that it would not be easy to persuade them to take part in constructive cooperation if their own interests could not be guaranteed. A committee on which only the central banks were represented was liable to take decisions which conflicted with those of the SPC. It was therefore important for that Committee to include representatives of the statistical institutes. Eurostat undoubtedly played a pioneering role by setting up the CMFB (Committee for Monetary, Financial and Balance of Payments Statistics) in April 1991, bringing together senior statisticians from the statistical offices and top-level representatives of the central banks.

2 The CMFB has been in existence for 10 years now, and an assessment of its work thus far is undoubtedly in order. Can it be regarded as a success story? Is it just another talking shop, with precious little to show in the way of action? Or is it the other way round? Certainly, its first few years were less than a dazzling success: the gulf between the central banks and the statistical offices was simply too great. Most of the national representatives of the two sides had never even met until the Committee's inaugural session in Luxembourg in April 1991. The Committee spent its first years in search of an identity, defining its role and trying to resolve conflicts of competence. Gradually, however, the two groups got to know and appreciate each other, and the Committee's political importance quickly became apparent, which certainly helped to foster a spirit of cooperation.

A major breakthrough occurred when it was decided that the Committee should no longer operate solely on behalf of the European Commission (its original purpose had been to advise the Commission on the integration of monetary, financial and balance-of-payments statistics in the European Statistical System), but should also advise the forerunner of the European Central Bank on statistical cooperation. Once that decision had been taken, the Committee was in a position to reconcile central bank autonomy with the aim of creating a genuinely European statistical system.

3 The following events have been milestones in the history of the CMFB:

- Its role in coordinating the compilation and use of statistics by the European System of Central Banks and the European Statistical System (via a network of European statistical institutes);
- The compilation of an inventory of requirements for the future European Central Bank;
- Its role in the process of harmonising European statistics, which has led, in some cases, to European standards becoming world standards;
- Its role as quality watchdog for Maastricht-related statistics, which were crucial for deciding whether the Member States had passed or failed their EMU "entrance exam", and which were therefore politically extremely sensitive;
- Its part in securing greater independence for the producers of statistics vis- vis their respective governments, which were keen to apply creative accounting techniques to their own advantage in their national data;
- The development of a new approach to collecting balance-of-payments data: the advent of monetary union meant that transactions which had previously been recorded as foreign transactions suddenly became internal ones; new payment systems will no longer bee unable to provide the necessary information;

- Lastly, the CMFB has not confined itself to giving advice in the statistical fields which feature in its name, but has consciously extended its field of activity to include any statistical topic which interests the European Commission, the statistical institutes, the ECB or the central banks.

## Conclusion

Statistical offices and central banks tend to be the biggest producers of economic and financial statistics in their respective countries. Even now, the two types of institution often work in isolation from each other. That may have been acceptable many years ago, but more recently, and certainly in the present, growing importance attaches to integration and the production of coherent statistics (e.g. SNA 93 and BOP statistics). The European Commission, in the guise of Eurostat, faced three problems in its attempt to harmonise statistical systems and make them more consistent. Firstly, it had to deal with two sets of institutions which enjoyed a degree of independence and could look back on a long history. Secondly, there are major differences between the various national systems. Thirdly, the distribution of tasks between statistical offices and central banks varies considerably from one country to the next. In order to meet the greatly increased requirements associated with monetary union, it was essential to combine forces, rather than using them haphazardly, especially as the Member States' governments, in their drive to meet the Maastricht deficit criterion (a maximum of 3% of GDP), were not averse to squeezing their budgets for statistical purposes. In response, Eurostat brought together senior officials responsible for statistics at the central banks and senior statisticians at the statistical offices, in order to foster consultation and cooperation in areas where there could be an overlap between the two groups.

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# How to Square the circle of Official Statistics – Towards a new Partnership of Central Banks and National Statistical Offices

*Józef Olenski (National Bank of Poland)*

## 1 Traditional models – the "round circle" of official statistics

The "traditional models" of organization of official statistics are based on central role of NSO as the coordinator of official statistics and main technical performer of surveys.

Model I – one national central statistical office conducting most of surveys and coordinating the whole national system of official statistics (Fig.1).


Model II – many statistical departments of ministries, CB and other governmental agencies are realizing surveys, producing official statistics for the areas of their competencies within the program of official statistics coordinated by the CSO. The CSO in this model is – as a rule – the coordinator of the national statistical system (NSS), while surveys are conducted by statistical CBs, ministries and other public institutes (Fig.2).


## 2 The impact of modern IT and the development of the new economy on the organization of official statistics

In a modern IT environment the administrative records are the main source of data for both economic and social statistics. Statistics based on traditional collecting of questionnaires is playing an auxiliary role. The only exception up to now are households surveys, some specific surveys on social statistics and business cycle statistics based on opinions and expectations of individuals.

Most advanced countries are producing almost all economic statistics and basic social statistics on the basis of different kinds of administrative records. Ministries and other governmental units managing those administrative registers are able to produce statistics themselves, without intervention of national statistical offices. Statistical divisions of those ministries play a more important and rapidly growing role in official statistics. National statistical offices should redefine their functions in this new environment.

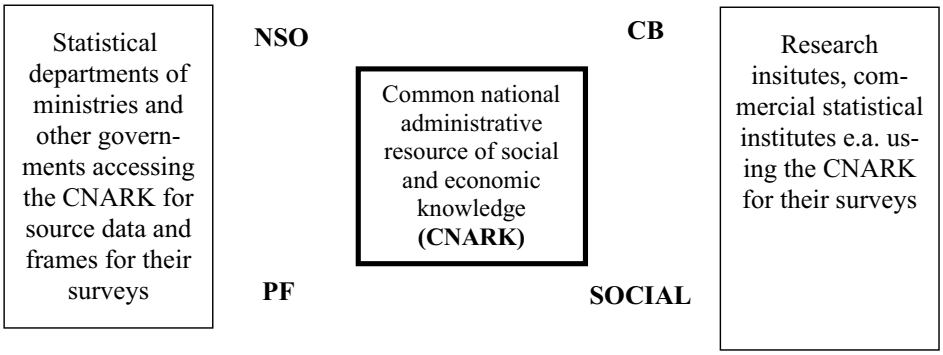
### 3 New model of official statistics – "squared circle" of partnership of NSOs, central banks, public finances and social security services

Up to now most of administrative records are oriented to the needs of their owners. This must be changed. To utilize administrative records for statistical purposes, their owners should accept the fact that the information collected by them are – first of all – national resources of social and economic knowledge, which should be available for all authorized users within the frames of the law. The development of administrative records should be coordinated as one common resource of knowledge, with minimized redundancy, coherent methodology and uniformed retrieval mechanisms.

Four institutions seem to be predestinated to play a leading role in official statistics in a modern IT environment:

- National statistical offices (NSO) as methodological and programming coordinator of the whole system of official statistics.
- Central banks (CB) as managers and/or coordinators of information systems reflecting the financial side of the economy (businesses, households, governments).
- Ministries of finance (PF) monitoring the economy via the information systems of public finances: taxes, customs and government budgets.
- Social security systems, incl. health insurance (SOCIAL) monitoring labour, employment, unemployment, incomes of households etc. via information systems of social security records, pension funds, health insurance and social benefits.

Those four institutions compose the squared circle of modern official statistics shown below:




The optimal model for coordination and production of official statistics of the future seems to be the "*quatrumvirat*" composed of national statistical offices, central banks, ministries of public finance and social security institutions. NSO, CB, PF and SOCIAL should develop "their" segment of the CNARK. A legal basis for the proper development and use of the CNARK as the kernel of official statistics is the prerequisite for implementing this model in practice.

### Reference

Olenski J., *Elementy ekonomiki informacji* (*Foundations of Economics of Information*), Warsaw University, Warsaw, 2000.

### Abstract

*The model of the system of official statistics based on the partnership of the owners of basic administrative data, namely NSO, central bank, public finances and social security ministries, is discussed as the optimal model of official statistics in a modern IT environment and modern information infrastructure of the economy.*

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# The Relationship Between Central Banks and Statistical Institutes – Botswana's Case

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## Introduction

As a member of the Southern African Development Community (SADC), one of Botswana's objectives is to provide up to date and reliable statistics to the world. In today's rapidly changing world, decisions are made regularly based on up-to-date and reliable statistics. The purpose of this paper is to relate how statistical institutes in Botswana work together towards producing the best statistics.

## An Overview of Botswana's Statistical Institutes

Two main statistical institutions in Botswana are the Central Statistics Office and the Bank of Botswana.

### *The Central Statistics Office (CSO)*

An Act of Parliament, referred to as the Statistical Act 1967, established the CSO in 1967. The function of CSO is to produce and disseminate official statistics for Botswana to the Government, private sector, parastatal sector and the general public as defined by the Statistical Act. It also provides advisory services to users on official statistical matters.

The CSO is divided into Economic Statistics and Social Statistics Divisions. Each division is responsible for collecting and compiling the statistics that relates to its area of speciality. The Economic Statistics division is further divided into five units: the National Accounts, Prices, Labour, Industrial and Environment, Agriculture and Trade Statistics Units. The Social Statistics Unit is divided into six sections comprising the Education, Health, Demography, Transport, Population Census and Household Surveys.

### *The Bank of Botswana (BoB)*

The BoB was established in July 1, 1975 through an act of parliament referred to as the Bank of Botswana Act, 1975. One of its major functions is economic analysis. This covers production of research work and compilation and dissemination of statistical reports to other institutions and the public in and outside the country. The Bank is classified as another statistical institution as it is responsible for the compilation of the financial and balance of payments statistics. The data is collected from the financial institutes and other institutions, such as the commercial banks, the non-bank financial institutes and businesses.

The BoB's statistical work is done by the Statistics and Information Services (SIS) Unit, which is part of the Research Department of the Bank. The unit is divided into three sections: the Balance of Payments, Monetary Statistics and the Information and Database Services.

## Working Together Towards Better Statistics (Working Groups/Committees)

The BoB works together with CSO in the production of national accounts data and other statistics. In this respect, the CSO is the main producer of national accounts data, but in the process it uses some of the data that is being compiled by the Bank. The Bank also works with the Department of Tourism to try to put together the tourism statistics.

Being a member of the IMF exposes Botswana to other countries' statistics. It also has an opportunity to publish its data on the IFS where all member countries' statistics is found. Above all, the member country has an opportunity to make use of technical assistance offered by the IMF. All this helps in producing uniform statistics across the globe.

In 1995, after numerous complaints that CSO was not delivering on time, a User-Needs Assessment (UNA) exercise was carried out based on the United Nations *"Addis Ababa Plan of Action for Statistical Development in Africa in the 1990s*". The UNA was involved in reviewing the operations of CSO through the help of senior members of CSO, representatives of users of CSO products and independent experts. The BoB represented users while the experts were from UK and the UNECA, who also financed the project.

The whole exercise was to focus the CSO's activities more on the users' requirements. Out of this exercise emerged the User-Producer Committee (UPC), which is composed of major users such as government departments, Botswana Institute of Development and Policy Analysis (BIDPA), BoB etc. Despite there being no regular meetings for UPC, CSO continues to identify interested users of particular products and initiate discussions with them.

Another problem that Botswana's statistics face is that most recent data is not readily available, for example, in the areas of trade and the tourist statistics. In many cases the data is reported with lags of up to a year. The Department of Tourism, under the Ministry of Commerce, came up with a project referred to as Tourism Statistics Development Project. The project is aimed at addressing serious deficiencies that existed in timeliness, coverage and accuracy of tourism statistical information. To ensure that the objective was met, a tourism-reference group was formed whose representatives are BoB, UNICEF-UNDP, Department of Immigration, Ministry of Commerce and Industry and the Hotel and Tourism Association of Botswana. The group ensured that the project was carried out effectively to achieve the objectives mentioned above and came up with ideas as to how best the tourism statistics could be collected and disseminated. For example, the project had to develop a database and a website, both have been achieved.

## Conclusion

The Bank of Botswana is actively involved in various areas of statistics. It plays a major role in the publication of statistics, particularly the financial and the balance of payments. The Bank also plays major roles in working together with other statistical institutes, locally as well as internationally, to see to it that the best statistics is produced and disseminated to users.

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**Provisional Programme for the Independent IFC Conference, 2002**

*Challenges to Central Banks' Statistical Activities*

**Liberalisation of Financial Markets and BOP-compiling** *(invited papers session)*
Organiser: Meganck; Chairperson: Meganck; 2 discussants; 4 papers.

**Statistical Methods in Safeguarding the Quality of Statistics** *(invited papers session)*
Organiser: Lehtonen; Chairperson: Lehtonen; 2 discussants; 4 papers.

**Central Bank Statistics in a Multi-national Set-up** *(invited papers session)*
Organiser: Carson/IMF; Chairperson: (?);
4 papers, 2 discussants.

**Statistics and Transparency** *(contributed papers session)*
Organisers: Schubert/Nesvadba; Chairperson: Schubert or Nesvadba;
as many papers as possible.

**Statistics and Information Technology** *(contributed papers session)*
Organiser: Oleński; Chairperson: (?);
as many papers as possible.