

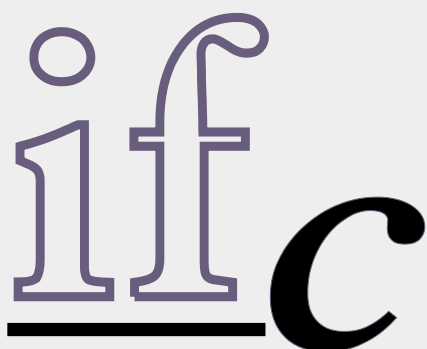
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IRVING FISHER COMMITTEE  
ON CENTRAL-BANK STATISTICS

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*ifc Bulletin*

No. 18 • July 2004



The Irving Fisher Committee is part  
of the International Statistical Institute

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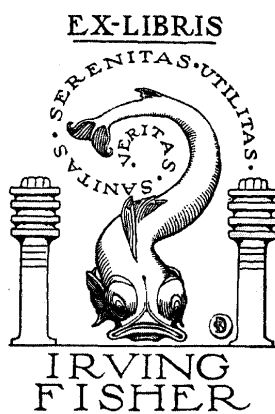
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*Financial data: Approaches in  
selected countries*

IFC Conference Basel, 2004

*Abstracts of papers*



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# ifc Bulletin

No 18 – July 2004

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## What is the IFC?

The Irving Fisher Committee (IFC) is a forum for discussion on 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, which take place both inside and outside the framework of the ISI's biennial Sessions. The first "outside" conference – on the challenges to central bank statistical activities – is scheduled for summer 2002 at the Bank for International Settlements in Basle.

The conferences are supported by the publication of the IFC Bulletin, which contains the conference papers and other articles.

The IFC has a Web site (<http://www.ifcommittee.org>), on which an electronic version of the IFC Bulletin can be found.

## 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 during the conferences. 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 Sessions in Istanbul, the IFC held its inaugural meeting. At the "administrative meeting" held during that Session an Executive Body was established and it was decided to start publishing the IFC Bulletin devoted to the activities of the IFC. Two years later, at the 52nd ISI Session in Helsinki, the IFC's presence was further strengthened. In 2001, at the 53rd ISI Session in Seoul, the IFC presented a programme comprising an invited papers meeting on "Financial Stability Statistics" and several contributed papers meetings.

In 2002, a conference on "Challenges to Central Bank Statistical Activities" was organised in co-operation with the Bank for International Settlements, which hosted it at its premises in Basle. 160 statisticians representing 73 countries participated. Some 50 papers were presented.

In 2003, at the 54<sup>th</sup> ISI Session in Berlin, the IFC participated with nearly 40 papers, presented in two Invited Papers Meetings and three Contributed Papers Meetings. The General Assembly of the ISI accorded to the IFC the Status of an independent ISI Section on a provisional basis up to the 55<sup>th</sup> ISI Session (Sydney, April 2005), when a final decision shall be taken.

## 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.

## **This issue of the IFC Bulletin**

This issue of the IFC Bulletin opens with the text of a letter by the IFC chairman sent to the membership introducing a questionnaire about the future status and role of the Committee (pages 6-13). It is a follow-up of the decision reached at the General Assembly of the International Statistical Institute (ISI), after the IFC's application for Section status within the ISI. The responses to this member consultation will be discussed at a meeting of senior central bank statisticians immediately preceding the IFC Conference to be held on 9-10 September 2004 at the BIS in Basel.

This two-days conference, which is being organised after the successful model of two years ago, will focus on "Central Bank Issues Regarding National and Financial Accounts". The various aspects of this topic will be discussed in three sessions and eight workshops. More than 50 persons have already expressed their intention to submit a paper at this conference. A preliminary programme is presented on pages 14-18.

This programme is followed by a provisional agenda of the contributions of the IFC to the 55th ISI Session, which will be organised in Sydney, 5-12 April 2005 (pages 19-20). A Call for Papers for a Contributed Papers Meeting in the framework of this Session is included in this issue.

The main part of this Bulletin is composed of abstracts of papers to be presented at the IFC Conference in Basel. The editor regrets that not all abstracts could be included, as some contributors were not in a position to complete their abstracts before the deadline set for publication. The abstracts will also be posted on the IFC web site (<http://www.ifcommittee.org>), together with any new information on the conference.

## **Guidelines for publication of papers**

After the Basel conference, papers in their final version will be reprinted in several successive issues of the IFC Bulletin. In order to facilitate publication, authors are requested to make their papers available before 1 October 2004. The papers should be supplied as Word documents and should not contain any colours in graphs and tables. Graphs and tables should be editable. Texts (also in graphs and tables) should be set in Times New Roman letter font.

The papers will also be posted without delay on the IFC web site. For this purpose, documents may be sent (additionally to the WORD version) as PDF files (using colours).

Both for publication in the IFC Bulletin and for posting on the IFC web site, papers should be sent to the following e-mail address: [wucwo@wxs.nl](mailto:wucwo@wxs.nl).



## IRVING FISHER COMMITTEE ON CENTRAL-BANK STATISTICS

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*Date:*

2004-06-25

Dear Madam, Dear Sir,

The Irving Fisher Committee on Central Bank Statistics is at an important crossroads. The Committee has operated on an informal basis under the umbrella of the International Statistical Institute and has organised a number of sessions on the occasion of the biennial ISI conferences since 1995 (Istanbul 1997, Helsinki 1999, Seoul 2001, Berlin 2003). In 2002 the BIS hosted an independent conference for the Committee which attracted more than 150 participants from 80 countries, of which more than 50 presented a paper. Another such independent conference will be hosted by the BIS in September 2004 for which, again, more than 50 papers have been submitted and preparations are well underway for the five sessions which the IFC will sponsor at the ISI conference in Sydney in April 2005.

Membership of the IFC has been established over the years as a combination of individual central bank statisticians registering themselves as members and more official processes whereby a number of central banks have signed up as institutional members. So far this has not caused any difficulties as there are no official obligations for the members or for the Committee itself. There are, in fact, no statutes of the Committee.

Ad hoc Administrative Meetings of members have been held on the occasion of IFC/ISI conferences during which volunteering members were elected as members of the Executive Body. The Secretariat of the Committee has been provided by the National Bank of Belgium, including the printing and dissemination of the IFC Bulletin. The editor of the Bulletin works on a voluntary basis and maintains the IFC website, which is hosted by the BIS. The BIS has covered the costs for the organisation of the independent conferences.

Discussions at the Administrative Meetings and in the Executive Body, as well as the success of the independent conferences hosted by the BIS for the IFC, have indicated that there is a growing interest in the central banking community to continue the activities of the IFC and to give it a more permanent and workable structure. Recognising that the Committee would also profit from a more formal recognition by the ISI, the IFC Executive Body submitted an application to the ISI for the IFC to become an independent ISI Section. Draft Statutes were presented and the business case was argued on at an ISI Council meeting in March 2003 and on the occasion of the ISI conference in Berlin 2003.

The ISI has expressed a willingness to accept the IFC as an independent section but has posed a number of conditions. One is to focus the area of interest of the IFC on monetary and financial statistics, whereby financial statistics should be interpreted as widely as possible, including those used by private market participants. Another is to broaden the membership of the IFC to include a convincing number of individual members with a non-central bank interest (eg academics, market participants). All this should be reflected in the name of the committee, which has been proposed as "Irving Fisher Society for Monetary and Financial Statistics". These conditions come on top of the normal ISI conditions for recognised membership which, amongst others, call for formal statutes, the establishment of annual accounts and reports, a regular review of IFC activities by the ISI, the imposition of membership fees (which would be collected by the ISI Secretariat and partly finance the operation of the ISI itself), and efforts to cooperate as much as possible with other ISI sections. Section Status was granted to the Irving Fisher Society on a provisional basis for the transitional period up to the 55<sup>th</sup> ISI Conference in Sydney (April 2005).

During and after Berlin, a number of central bank members of the IFC have expressed reservations about changing the direction of the IFC, a relatively young organisation, in the way proposed by the ISI. One comment is that central banks are in favour of a much more active and dynamic IFC focused on promoting active cooperation amongst member central banks, if possible with strong support from the BIS. In other words the IFC would continue to focus on a core membership of central bank statisticians, which should be reflected in its name. This is seen to be important also in order to ensure that central banks will continue to commit resources to participate in IFC, and ISI, activities in the future (eg attend meetings and contribute papers).

There is some concern that the growing support of the BIS could be compromised if the membership of the IFC was broadened too much. A second tier of members could be envisaged, including academics and experts from the private sector, though there is some doubt whether enough such individual experts could be attracted to make a tangible contribution to the activities of the IFC. It is recognised that there would be significant value in a much more active cooperation of the IFC, in its current configuration, with the other sections and committees of the ISI and that this could, in fact, also achieve the ISI's objective to stimulate discussions across statistical experts from different domains. The IFC may need to have a permanent office to ensure its continuity. It is unclear, however, whether there is support for setting up a more formal structure for the IFC and the introduction of a membership fee to finance the permanent office and cover its administration costs (and sharing part of the fee with the ISI to finance its operations).

We have reached agreement in the Executive Body that we need to consult the whole of the IFC membership before going forward with becoming a recognised official ISI section. This means that for the time being we continue to operate as IFC using the various informal arrangements we have had so far. Moreover, we plan to hold a special meeting with key BIS member central banks in the margin of the IFC meeting in September 2004. That meeting would explore options for more active central bank statistical cooperation through the IFC with the ongoing support of the BIS. Following the consultation and discussions at the September meeting, the IFC Executive Body should be in a position to report back to the ISI and discuss again the conditions for becoming a specialised ISI section. Hopefully some progress could be made on this prior to the Sydney 2005 event.

The Executive Body has communicated this position to the ISI Council, which has expressed its understanding that the Committee needed to properly consult its members and engage in a careful discussion of its future direction. The Chair of the Executive Body has been invited to attend the ISI Council meeting in Korea at the end of August, at which he will be able to provide further feedback to the ISI.

Attached is the survey document which we would like as many IFC members and contacts as possible to fill in and return to the IFC Secretariat, preferably by the middle of August 2004. We would like to use the opportunity to update our membership list, which, as indicated above, has come to be established on a rather informal basis. I hope you will find some time to respond to the survey and to update our contact information.

Note that we will treat your responses on a confidential basis and only share overall findings with the IFC membership. In the end it will be largely up to you, as members and contacts of the IFC, to indicate which direction, at this important crossroads, you would like your Committee to take.

Yours sincerely,

*Paul Van den Bergh*

Chair of the IFC Executive Body  
And Head of Information, Statistics and Administration  
Bank for International Settlements

Enclosure (questionnaire)

# Questionnaire

## Part I: Contact information

First, we would like you to confirm your membership of the Irving Fisher Committee on Central Bank Statistics:

Please complete in CAPITAL LETTERS

Family name: First name(s): Function: Department/service: Institution: Address: Country: Tel number: Fax number: e-mail:
---

<b>I am confirming my membership:</b>	Yes	No
On an individual basis		
On behalf of my institution		

Note that we may also have other names from your organisation on our contact list, in which case a separate list is attached. In order to double check, could we ask you to indicate whether these persons are still at your institution and should remain on our contact list (we hope to hear from them directly of course regarding this survey and their contact information). It would be useful for future correspondence, if you could indicate who the formal contact at your organisation would be. Note that all contacts can submit feedback to the following survey.

<b>Name</b>	<b>Still working at your institution</b>	<b>Still interested in IFC activities (ie remain on contact list)</b>	<b>Formal contact for future correspondence</b>

<b>I am responding to the following survey:</b>	Yes	No
On an individual basis		
On behalf of my institution		

## Part II: Survey questions

1. Regarding the status of the IFC within the ISI	5	4	3	2	1
I agree with the objective to seek recognised status for the IFC by the ISI					
I agree to develop more formal statutes for the IFC					
I think the IFC can continue to operate under its current informal status of ISI section					
I think the IFC can continue to operate informally but also under the aegis of the BIS					

2. Regarding members, I think the following should be members of the IFC	5	4	3	2	1
Central banks as core/institutional members					
Central bankers as (individual) core members					
Private sector participants as core members					
Private sector participants as second tier members					
Academics as core members					
Academics as second tier members					
Members of other ISI sections as core members					
Members of other ISI sections as second tier members					
Members of regional and international organisations involved in activities of interest to core members as core members					
Members of regional and international organisations involved in activities of interest to core members as second tier members					
Other (please specify):					

3. Regarding the name of the Committee, I would prefer the Committee to operate under the name of	5	4	3	2	1
Irving Fisher Committee on Central Bank Statistics					
Irving Fisher Committee of Central Bank Statisticians					
Irving Fisher Society for Monetary and Financial Statistics					
Other (please specify):					



<b>4. Regarding the objectives of the IFC, I think the IFC should contribute to</b>	5	4	3	2	1
Identify statistical issues of concern to central banks					
Identify statistical issues in the monetary and financial domain					
Exchange views and share experiences between central bank statisticians on the collection, compilation and dissemination of statistics of interest to central banks					
Exchange views and share experience between experts on monetary and financial statistics representing central banks, monetary and financial institutions, national statistical institutes and the academic world					
Participate actively in discussion on international statistical standards and methodologies in domains of interest to central banks					
Participate actively in the discussion on international statistical standards and methodologies in the area of monetary and financial statistics					
Promote actively the adoption of international statistical standards and methodologies in the central banking community					
Promote actively the adoption of international statistical standards and methodologies in the domain of monetary and financial statistics by all relevant stakeholders					
Promote active discussion and cooperation between members and other sections of the ISI					

<b>5. I would support the following activities of the Committee</b>	5	4	3	2	1
Organisation of meetings on special topics on the occasion of the biennial ISI conferences					
Organisation of meetings on special topics on the occasion of the biennial ISI conferences in cooperation with other ISI sections					
Organisation of independent conferences for core members only					
Organisation of independent conferences open to all IFC and ISI members					
Organisation of independent conferences with other ISI sections					
Organisation of workshops or special meetings for core members only					
Organisation of workshops or special meetings open to all IFC and ISI members					
Publication of an IFC Bulletin					
Maintenance of an IFC website					
Maintenance of a protected website, open to members only, for the exchange on information (eg. chat room), maintenance of contact information, posting of documents for conferences, workshops or special meetings					
Other (please specify):					

MEMBERSHIP CONSULTATION

<b>6 The following ISI Committees would be of interest to the IFC</b>	5	4	3	2	1
The Bernoulli Society for Mathematical Statistics and Probability					
The International Association of Official Statistics					
The International Association for Statistical Computing					
The International Association for Statistical Education					
The International Association of Survey Statisticians					
The Committee on the History of Statistics					
Statistics in Business and Industry Committee					
Committee on Risk Analysis					
Other (please specify):					

<b>7. Regarding membership fee</b>	5	4	3	2	1
I would agree with a membership fee for the IFC					
I or my institution would remain a member if the fee:					
For institutional members was \$ 1000/year					
\$ 500/year					
\$ 250/year					
For individual/core members was \$ 100/year					
\$ 50/year					
Compared to the fee for core members the fee for second tier (individual) members should be					
the same					
higher					
lower					
Other suggestions for fee structure:					

8. The following statistical domains would be of interest for discussion within the IFC	5	4	3	2	1
National accounts					
Composite leading indicators					
Key labour market indicators					
Productivity					
Government finance					
International trade					
Consumer price index					
Producer price index					
Property prices					
Import & export prices					
Monetary aggregates					
Banking data					
Financial soundness indicators					
Financial market statistics					
Balance of payment statistics					
External debt					
International reserves and foreign currency liquidity					
Business surveys					
Consumer tendency surveys					
Balance sheet data for corporations					
Payment and settlement systems					
International accounting standards					
SDDS/GDDS					
Data exchange standards (SDMX)					
Others (please specify):					

**I have the following observations regarding the future of the IFC (optional):**

**I have the following suggestions for topics at future IFC meetings (optional):**

Please return the contact information and survey by fax or email attachment to the IFC Secretariat (by using this Word document or its PDF):

Rudi Acx  
National Bank of Belgium  
de Berlaimontlaan 14  
1000 Bruxelles  
Belgium  
Fax: 32-2-2213230  
Email: rudi.acx@nbb.be

Please also make a copy available to the following person at the BIS:

Ms Jun Zhu  
Economist, Data Bank Services  
Monetary and Economic Department  
Bank for International Settlements  
PO Box 4002 Basel  
Switzerland  
Fax: 41-61-2809100  
Email: jun.zhu@bis.org

You can contact either the Secretariat or the BIS in case you have any questions or comments regarding the updating of the contact information or the questions of the survey.

# IFC conference on “Central Bank Issues Regarding National and Financial Accounts”

Basel, 9-10 September 2004

## Preliminary Programme

### Thursday 9 September 2004

08:30-09:00 **Registration**

09:00-09:15 **Welcoming and opening remarks**

09:15-10:30 **Session 1 – Measuring prices and inflation: methodological issues**

Chair: *Bart Meganck (Eurostat)*

Papers:

- An international methodology for CPI  
*Valentina Stoevska (International Labour Office)*
- An international methodology for PPI  
*Neil Patterson (International Monetary Fund)*
- The EU harmonised index for consumer prices  
*Bart Meganck (Eurostat)*
- Measurement bias in the CPI  
*Mark Wynne (Federal Reserve Bank of Dallas)*

Discussant:

11:00-12:45 **Workshop A – Country papers on CPI and PPI**

Chair: *Mark Wynne (Federal Reserve Bank of Dallas)*

Papers:

- Methodology in calculating CPI for Mexico  
*Javier Salas (Banco de Mexico)*
- The CPGI and its relationship with other price indices in China  
*Wang Zhenying (People's Bank of China)*
- CPI and harmonisation  
*Busi Alice Dlamini (Central Bank of Swasiland)*
- Core inflation vs headline inflation  
*Maxwell C. Musongole (Bank of Zambia)*

Discussant:

**Workshop B – Price statistics: special topics**

Chair: *Hans-Peter Glaab (Deutsche Bundesbank)*

Papers:

- Banking service price index: an explanatory analysis for India  
*R. Barman (Reserve Bank of India)*
- Statistics on prices for financial instruments  
*Per Nymand-Andersen (European Central Bank)*
- Measuring property prices and assessing the fair value of property  
*Wensheng Peng (Hong Kong Monetary Authority)*
- Monitoring property prices  
*Petr Vojtisek (Czech National Bank)*

Discussant

14:00-14:30 **Key-note presentation: Is the glass half full or half empty?**  
*W.R. White (BIS)*

14:30-16:00 **Session 2 – Output, capacity and productivity: key issues**

Chair: *Steven Keuning (European Central Bank)*

Papers:

- Key issues in National Accounts statistics  
*Rudi Acx (National Bank of Belgium)*
- Measurement issues regarding productivity growth and labour productivity growth  
*François Lequiller (OECD)*
- Estimating the output gap in the Polish economy: the VECM approach  
*Michał Gradzewicz and Marcin Kolasa (National Bank of Poland)*
- Federal Reserve estimates of capital utilization and the Bureau of the Census' survey of plant capacity  
*Norman Morin (Board of Governors of the Federal Reserve System)*

Discussant:

16:30-18:00 **Workshop C – Productivity statistics**

Chair: *Jean Cordier (Banque de France)*

Papers:

- Revisiting recent productivity developments across OECD countries  
*Bruno Tissot (BIS)*
- Labour productivity: average vs marginal  
*Ulrich Kohli (Swiss National Bank)*
- Measuring total factor productivity for the United Kingdom  
*Sally Srinivasan (Bank of England)*
- Synthetic review of the methods and results considered and obtained by the Banque de France on productivity  
*Ivan Odonnat (Banque de France)*
- Information technology and productivity changes in the Italian banking industry  
*Giorgio Gobbi and Luca Casolaro (Banca d'Italia)*

Discussant

**Workshop D – Output gaps and capacity**

Chair: *R. Barman (Reserve Bank of India)*

Papers:

- Estimating output gap in Colombia: an eclectic approach  
*Adolfo Cobo (Central Bank of Colombia)*
- Estimating the output gap for the Turkish economy:  
an extended Kalman Filter application  
*Çagri Sarikaya and Fethi Ögünç (Bank of the Republic of Turkey)*
- Using additional information in estimating the output gap in Peru:  
a multivariate unobserved component approach  
*Shirley Miller Lira (Central Bank of Peru)*
- Capital stock measures for Indonesia  
*Noor Yudanto (Bank Indonesia)*

Discussant

**Workshop E – Output and output indicators**

Chair:

Papers:

- GDP measurement and challenges to the 2003 new base year series: the Chilean case  
*Jose Venegas Morales (Central Bank of Chile)*
- Composite leading indicator for economic activity in Turkey  
*Evren Erdoğan (Central Bank of the Republic of Turkey)*
- Real time data and business cycle analysis in Germany  
*Jörg Döpke (Deutsche Bundesbank)*
- Comparing growth performance between Eastern European countries  
*Marcin Kolosa (National Bank of Poland) and Barbara Döbeli (Swiss National Bank)*
- Monthly and flash estimates of GDP  
*Mutombo Mule Mule and Ndaya Ilunga (Central Bank of Congo)*

Discussant:

19:00 Reception and buffet dinner

**Friday 10 September 2004**

09:00-10:30 **Session 3 – Financial Accounts: key issues**

Chair: *Leon Taub (Federal Reserve Bank of New York)*

Papers:

- Key issues in Financial Accounts statistics  
*Reimund Mink (European Central Bank)*
- The impact of expected changes in international accounting standards on compiling  
monetary and financial statistics  
*Yekaterina Prokunina (Central Bank of the Russian Federation)*

- Assessing household sector risk; an Australian perspective  
*Carl Schwartz (Reserve Bank of Australia)*
- Linking Financial Accounts, portfolio investment and external debt positions  
*Celeste Wood (Central Bank of Barbados)*

Discussant:

11:00-12:30 **Workshop F – Financial Accounts: general issues and country experiences**

14:00-15:30

Chair: *Reimund Mink (European Central Bank)*

Papers:

- Compiling the Flow of Funds of the Spanish economy  
*Pedro Abad (Banco de España)*
- Developing quarterly Financial Accounts: the experience of Latvia  
*Aiga Ose (Latvijas Bank)*
- Updating the Philippines Flow of Funds by SNA 93 and MFSM 2000  
*Marriel M. Remulla (Central Bank of the Philippines)*
- Flow of Funds statistics in Uganda  
*Michael Atingi-Ego (Central Bank of Uganda)*
- The financial systems of European countries: a comparison from a Financial Accounts perspective  
*Laura Bartiloro and Riccardo De Bonis (Banca d'Italia)*
- Neural networks and other non-parametric methods for data editing of financial variables  
*C. Biancotti and R. Tartaglia Polcini (Banca d'Italia)*

Discussant:

**Workshop G – Financial Accounts: domestic sectors**

Chair: *Grazia Marchese (Banca d'Italia)*

Papers:

- Net lending of households and NPISH: an analysis of discrepancies between financial and non-financial accounts  
*Audun Grønn (Norges Bank)*
- Investment and financing of the enterprise sector: what is the value-added of using financial and national accounts data?  
*Elmar Stöss (Deutsche Bundesbank)*
- Towards a better classification of household assets in Financial Accounts  
*François Lequiller (OECD)*
- Measures of financial positions of households and non-financial corporate sector  
*Richard Walton (Bank of England)*
- Monetary statistics of the Croatian National Bank as data source for Financial Accounts  
*Lidija Hećimović (Central Bank of Croatia)*
- Interpreting South African credit aggregates following the implementation of new accounting standards  
*J.P. van den Heever (South African Reserve Bank)*
- International comparison of gearing and leverage in the framework of Financial and National Accounts  
*Jean Cordier and Dominique Durand (Banque de France)*

Discussant:



**Workshop H – Financial Accounts: linkage with Balance of Payments**

Chair: *Neil Patterson (International Monetary Fund)*

Papers:

- Quality measures for quarterly National Accounts and related external statistics  
*Wim Haine (ECB and Eurostat)*
- The Rest of the World account in the Monetary Union Financial Accounts  
*Carlos Sánchez Muñoz and Celestino Girón Pastor (European Central Bank)*
- Balance of Payments as data source for Financial Accounts  
*Branimir Gruić and Igor Jemrić (Central Bank of Croatia)*
- The Balance of Payments statistics as an important tool for the compilation and the analysis of Financial Accounts in Austria  
*Michael Adreasch and Gerald Wimmer (Austrian National Bank)*
- Cross-border lending and local bank presence: the Dutch experience  
*Dirk van der Wal (De Nederlandsche Bank)*
- Surveys and annual reports as data sources for Balance of Payments methodology: an application to international organisations  
*Henk Lub (De Nederlandsche Bank)*
- Balance of Payments and statistical observation of private capital outflow  
*Sergei Shcherbakov (Central Bank of the Russian Federation)*
- Linking the Financial Accounts with the Balance of Payments, portfolio investment and external debt positions  
*Rudolf Olsovsky (Czech National Bank)*
- Monetisation and de-monetisation of gold and the implications for the South African Balance of Payments  
*Hlabi Morudu (South African Reserve Bank)*

Discussant

16:00-17:15 **Panel discussion on the Central Bank issues regarding National and Financial Accounts**

Chair: *Ulrich Kohli (Swiss National Bank)*

Issue paper:

- Formulating a Strategic Plan for Financial Data  
*Brian O'Reilly (Bank of Canada)*

Panellists: (to be determined)

17:15-17:30 **Concluding remarks**

# Participation of the IFC in the 55th ISI Session

Sydney, 5-12 April 2005

## Provisional Programme

### Invited Papers Meetings

#### **IPM 4 – Cost, Quality and Relevance of Financial Statistics**

Chair: *Coen Voormeulen (De Nederlandsche Bank)*,

Papers:

Usefulness of commercial statistics

*Paul van den Bergh (BIS)*

Potential impact of Basel II on data availability from banks

*Myrtle D. Halsall (Bank of Jamaica)*

Future challenges in compiling Balance of Payments and International Investment Position'

*Jörgen Ovi (Danmarks Nationalbank)*

#### **IPM 5 – Financial Soundness Indicators**

Chair: *Sean Craig (International Monetary Fund)*;

Papers:

Practical Challenges in Producing and Using Financial Soundness Indicators

*R. Sean Craig and Armida San Jose (International Monetary Fund)*

Financial Indicators for Monitoring Risks to Financial Stability in Europe

*Jukka Vesala (European Central Bank)*

Statistics on real estate prices: the need for a strategic approach

*David Fenwick (Office for National Statistics, U.K.)*

#### **IPM 6 – Accounting Standards and Their Impact on Financial Statistics**

Chair: *Michel Stubbe (European Central Bank)*

Papers:

A comparison of the main features of accounting standards and statistical standards and review of the latest developments in the field of the accounting standards

*Patrick Sandars and Paolo Poloni (European Central Bank)*

Accruals accounting and budgeting in the General Government sector

Measurement and collection issues for financial statistics arising from the development of accounting standards

*Lucie Laliberté (International Monetary Fund)*

Discussant: *Jean Cordier (Banque de France)*

**IPM 85 – The Development of National Quarterly Accounts by Institutional Sector**

Chair: *Richard Walton (Bank of England)*.

Papers:

Producing an integrated set of quarterly Institutional Sector Accounts  
*Robin Lynch (Office for National Statistics, U.K.)*

Links between the Balance of Payments and the compilation of the Rest-of-the-world account  
*Beatrice Timmermann (Deutsche Bundesbank)*

The challenges in producing quarterly National Accounts by institutional sector  
*Alessandra Agostinelli (ISTAT, Italy)*

Discussant: *Peter Harper (Australian Bureau of Statistics)*

**IPM ... – Optimal Methods for Data Quality Improvements in financial Statistics**

Chair: *Luigi Federico Signorini (Banca d'Italia)*

Papers:

Optimal filters  
*Augustin Maravall (Banco de España)*

Robust statistics for income data  
*Maria Pia Victoria-Feser (University of Geneva)*

Assessing data quality  
*Carol Carson (International Monetary Fund)*

The use of sample data to improve the quality of financial statistics  
*(Banca d'Italia)*

Discussants: *George C Tiao (University of Chicago); Arthur B Kennickell (Federal Reserve Board)*

**Contributed Papers Meeting**

**CPM ... – Survey methods in financial statistics: challenges and opportunities**

Chair: *Carl Schwartz (Reserve Bank of Australia)*

A Call for Papers is included in this issue of the Bulletin.

IFC members will be also encouraged to attend the satellite meeting with Statistics in Business and Industry in Cairns, Australia, after the ISI Session.

The web site <http://www.tourhosts.com.au/isi2005> of the 55th ISI Session is open for pre-registration.

# It all starts with the data <sup>1</sup>

*David Dodge (Governor of the Bank of Canada)*

It's a pleasure to be talking to you today, although I regret that I could not join you in person. Still, to give technology its due, this is almost as good.

Let me first take this opportunity to pay tribute to the Chief Statisticians at this conference and, indeed, to all statisticians around the world. You are truly the unsung heroes behind central bankers and other policy-makers. You constantly labour under tight resource, financial, and time constraints, to satisfy our insatiable appetite for data. As users of those data, we tend to focus on what can be done to improve them, rather than on recognition for what is already there.

But I can assure you that central bankers hold statisticians in high regard for the breadth and quality of information they provide. The data that you painstakingly produce form the base for the analysis and research that informs the formulation of monetary policy and our understanding of trends in financial systems and markets. So it really all starts with the data!

Your efforts to ensure the accuracy, integrity, relevance, timeliness, and international comparability of statistics are vital to our decision-making process.

Having told you how much we value your contributions, I must also tell you that I won't pass up this opportunity to make still more demands of you, on behalf of all of us in central banking! But, at the same time, I hope to be helping you, by giving you a sense of priority and some general principles to guide your efforts in addressing those demands.

So, what drives us central bankers to put more and more demands on you?

## **The Statistical Needs of Central Bankers**

Our statistical needs are fundamentally shaped by what we are expected to do under our mandate. The primary goal of most central banks today is to conduct monetary policy so as to achieve and maintain price stability. Low, stable, and predictable inflation is the means to our ultimate objective of solid economic performance over time.

In addition to price stability, we are charged with promoting the safety, soundness, and efficiency of our national financial systems.

Some among us are also expected to regulate financial institutions.

I should add here that, in the process of carrying out these responsibilities, we are collecting and generating significant amounts of statistical information ourselves. Data are a public good. We need to work together to make them accessible to researchers and the public in a convenient format. From our side, we could do more to share with you the data we collect and make the most of limited national statistical resources. Central banks that are regulators, in particular, produce significant amounts of data that could be shared. But for that, a robust legal framework would have to be in place, to allow the exchange of information.

<sup>1</sup> *Remarks to the Conference of European Statisticians, Geneva, Switzerland, 11 June 2003.*

Let me now turn to what we need from our statisticians. In this context, I will focus on the two central bank functions I just mentioned: the pursuit of price stability and the promotion of financial system stability.

In either one of those cases, the objectives have not changed. But our economies are continually changing and becoming more interdependent under the effect of globalization and large and growing trade and capital flows.

As policy-makers, it is extraordinarily important that we understand how, and to what extent, these forces are likely to affect the achievement of our objectives, so that we can adjust our policies accordingly.

Identifying the sources of potential challenges and threats to the achievement of our objectives, and determining how we should adjust to changes, is quite a task. But finding ways to measure the effect of changes in our economies and in our financial systems is no less important or complicated a job. For that, naturally, we turn to you!

So, what are the broad trends and challenges facing those of us concerned with price stability, and those concerned with financial system stability? And what do these challenges mean in terms of what we need from our statisticians?

I will deal first with those related to inflation control.

### ***Data challenges related to Price Stability***

In conducting monetary policy, we aim to keep the economy operating close to the level of its production capacity, so as to maximize output, employment, and income gains over the longer term, while keeping inflation low. When making interest rate decisions, we always try to gauge the extent of demand pressures – current and prospective – on production capacity (or aggregate supply). And we try to assess the actions required to maintain or restore balance between aggregate demand and supply in the economy, so as to keep inflation under control.

As you can appreciate from this description, the range of statistical information that we have to look at, for purposes of our decision-making, is quite wide. But for those of us, in particular, who are operating with explicit inflation targets, the most important indicators, besides price indexes, are measures of output, productivity, and capacity. These measures directly affect our ability to estimate the production potential of the economy and to assess the balance between demand and supply.

I have made these general comments to serve as a marker for what I have to say next about the broad trends and challenges relevant to the goal of price stability and the associated statistical needs. Much of that discussion will, one way or another, hark back to price and productivity measures. (That’s what you get when you talk to central bankers!)

### ***The growing importance of services***

An important feature of all major economies these days is the growing share of services. But service output is less tangible than that of the traditional goods industries. Indeed, in some service industries, such as banking, there is not even agreement on the appropriate definition of output. And in many countries, certain services, such as health care, are not delivered through the market, which makes it even more difficult to measure. As if all this were not enough, now, we also have to contend with “virtual” service output – that is, software, music, movies, and data that people can download from the Web. You certainly don’t need me to tell you how tricky it is to measure output, prices, and productivity in the services sector. Or, how tentative some of those estimates can be.

With the importance of services growing in our economies, the need for better output and price measures for this sector is becoming increasingly pressing. So, if you were looking to allocate limited statistical resources according to priority, my view would be that this particular area merits a higher ranking than in the past. What I’m saying is that, if you are trying to determine whether additional resources should be put in, say, quality adjustments for consumer goods or quality adjustments for services, the choice ought to be services.

Better price and output measures for services would improve our ability to assess overall economic conditions by providing better information on current trends in aggregate output and prices. They would also help us identify other emerging trends or structural changes in the economy. For example, these days, an important issue is to evaluate the productivity gains from the use of information and communication technology (ICT). Knowing the effects of ICT would help us predict future growth in the production capacity of the economy. One way to identify the contribution of ICT to overall productivity is to examine whether productivity gains have been strongest in those

sectors that are heavy users of ICT. We know that services is one such sector. But if we do not have the right price deflators for services, we will never get reliable measures of productivity growth and of the ICT effect in that sector. And so, it will be more difficult to judge the contribution of ICT to total productivity and to production capacity.

### ***Risk and insurance***

The increased occurrence of unpredictable events (conflicts, new diseases, and natural disasters) means that the world has become a riskier place; or, at least, that our perception of the risk has increased.

In this type of environment, insurance and hedging have assumed a bigger role than before. Not only has the provision of insurance become a more globalized operation; it has undergone significant structural change.

There has also been significant repricing of insurance worldwide, for both consumers and businesses, mainly because of marked increases in the value of claims. In Canada, we have recently seen large effects from higher insurance premiums in our inflation data. The United Kingdom and Australia have had similar experiences.

It is for these reasons that I am identifying insurance separately from other services. The challenge here is how to measure something that we hope never happens. I can see that we will have to devote more statistical resources to this issue. We need to think conceptually about how to measure the economic value of insurance and how to correctly measure the price of the service. In addition, central bankers have to think about the implications for economic activity and potential output of the increased risks and higher costs of mitigating those risks. And from the perspective of financial system stability, we must see to it that those who hold the risk price it correctly and that they are in a position to carry it.

But let me now move on to the next issue of relevance to the goal of price stability.

### ***The implications of rising trade flows and firms operating globally***

Changes in the way certain economic activities are carried out in today's "global village" have been so rapid that all of us have had a hard time keeping up. In many cases, it is not so much the nature of the transaction that creates difficulties for measuring what is happening, as it is the location and the price at which it gets done.

International trade is a primary example. Thanks to trade liberalization and falling transportation and communication costs, the share of international trade has been rising in most economies and, within that, the share of services. The activities of firms that are operating globally have also been expanding, as have the number of mergers. National frontiers are thus blurring, and there is a whole lot more intra-firm trade going on.

As encouraging as this growth in global trade is from the perspective of bettering the lot of more people around the world, it is not without challenges for policy-makers and statisticians alike. From your perspective, the more direct challenge is that it has become harder to collect information and to accurately measure economic activity within, and outside, national boundaries.

These are not necessarily new issues, and neither are those related to services that I discussed earlier. But, with the growing importance of trade in services and of multinational firms, these issues are coming to the fore, and the need for better information becomes more pressing.

What are the most important statistical needs with respect to trade and multinationals?

First, clearly, we need better information on intra-firm trade and on trade in services in order to get better aggregate trade statistics. Second, central bankers will always tell you that they are especially interested in better data on prices in different currencies. That is because we need to assess the economic effects (for example, which margins "get squeezed") when exchange rate movements are passed, or not passed, on to domestic prices. This is what we call the exchange rate pass-through.

This pass-through seems to have been less pronounced recently than in the high-inflation years of the 1970s and 1980s. There may be more pricing to markets, that is to say, firms may increasingly be setting prices based on what local markets can bear. A thorough analysis of the exchange rate pass-through issue is complicated by the fact that national statistical agencies often use a mechanical approach to convert foreign currency prices into domestic ones, rather than collecting actual import prices.

Transfer pricing by multinationals adds yet another dimension to the problem. I know that it is virtually impossible to get good information on transfer pricing. But better data on intra-firm trade and work with global enterprises may still help us get a better fix on import prices.

### ***Real estate prices***

Fluctuations in asset markets have become a more prominent feature of modern economies in recent years. Considering that property is by far the world's biggest single asset class, it is not surprising that movements in the real estate market are drawing a lot of attention. In many countries, housing prices, in particular, have been rising rapidly, raising some concerns about a possible sharp correction at some point.

Given that investment in housing represents a big chunk of household spending, and that for most people their homes represent their most valuable asset, it is surprising that, in many countries, there are no comprehensive quality-adjusted data on housing prices and rents. In its recent survey of global property markets, *The Economist* commented that "official statistics offices typically collect more information about the price of shoes or cement than housing, despite its far greater importance."

There is a need to expand the current limited international experience in constructing standardized housing price and rent indexes. And so, I am encouraged that the International Monetary Fund (IMF) and the Bank for International Settlements (BIS) are convening a joint conference of experts in the autumn to support work to improve data availability in this field.

Given how often real estate booms have triggered banking crises around the world, this issue is clearly important from the point of view of financial system stability as well – to which I would now like to turn.

### ***Challenges related to Financial System Stability***

Financial market liberalization has led to tremendous growth in global financial activity in recent years and to more integrated financial markets. The demand for financial services has also risen in response to the growth in the operations of cross-border firms. And in many countries, there has been a merging of the traditional segments of the financial sector and a proliferation of financial products, including derivatives and hybrids.

Unfortunately, with globalization and with increasingly complex financial markets, the effects of any disturbance have tended to reverberate around the world. Concern about these spillover effects has led to efforts to strengthen the analytic capability of many central banks with respect to financial system stability. Central banks and investors now demand more and better information about the financial behaviour of both industrial and financial enterprises. After the Asian crisis of 1997-98, which highlighted the lack of transparency and proper surveillance of financial systems in several countries, more resources were dedicated by national authorities, including central banks, to understanding the workings of the financial system and to communicating that understanding publicly.

The policy objectives of the various national agencies that are involved in setting standards and codes for the financial system are safety, soundness, and efficiency. No economy can function properly, unless supported by a robust, efficient financial system and sound financial institutions that can help to appropriately channel savings and investments.

By their very nature, central banks take a system-wide approach to financial stability. So, our focus is on the nature and causes of vulnerabilities with potential system-wide implications. After all, we are paid to worry about these things! Once such vulnerabilities are identified, we would work with other standard-setting bodies to find ways to prevent or contain them.

In addition to the real estate price indexes that I discussed earlier, there is at least one other area where we could use your help to achieve our goal for the financial system.

To better understand financial behaviours and their implications for system-wide vulnerabilities, we need to link financial market data (new issues of bonds and equities, secondary pricing of bonds and equities, etc.) to industry or sector characteristics and to economic activity. We have found this to be a rather cumbersome and time-consuming exercise. This is where you can help us, by undertaking to link financial data to the firms involved, in a more transparent, systematic, and consistent way. In most cases, these would be firms to which you have already assigned an industrial classification code, and for which you have other relevant information (such as characteristics and surveys on their economic activities). The ability to cross-reference financial and economic data would allow us to explore in a more scientific manner questions of financial vulnerabilities

from a system-wide perspective. I am, of course, aware of the privacy concerns, particularly in this area, and, hence, the need to find ways to deal with them.

It would also be useful if central banks and national statistical agencies could work together to define needs and to share expertise on financial statistics. In Canada, advisory groups of this nature have worked well in a number of areas.

Members of such groups can also share knowledge on international initiatives related to financial system data. As you know, there are a number of initiatives underway to improve such data from various perspectives. For example, the IMF is coordinating a project to develop national Financial Soundness Indicators. The BIS is looking to provide data on ultimate risk. And the Financial Stability Forum (FSF) is monitoring the consistency and comprehensiveness of international financial standards and codes.

I am now coming to the last part of my remarks. Here, I intend to stay away from specific data needs. Rather, I will talk about the general principles that I see as relevant in guiding your efforts and in determining statistical priorities as we move forward.

### **Don't let the Best become the enemy of the Good**

Central bankers have to make policy decisions in real time and often not under the best of circumstances. For this, we need the best *available* information.

To be sure, it is important that the data we rely on for those decisions be of high quality. But this does not mean that we should let our quest for high-quality standards prevent the publication of potentially useful data. In other words, we should never “let the best become the enemy of the good.”

So, this is my advice: if you have imperfect data, don't sit on them. Put them out, together with your professional assessment of their quality and vulnerability. Remember, as policy-makers, we are used to taking decisions under uncertainty, in less than perfect conditions. We would rather have imperfect data than no data at all.

### **Data comparability**

Data comparability – now, there's a big issue! With national economies and financial systems becoming more and more integrated, national central banks increasingly have to rely more on information and concepts from other jurisdictions to read the trends, and to figure out what is going on in their own economies. But for this to be effective, statistical agencies need to collect and aggregate data on a comparable basis.

Comparability is also very important in that we use cross-country variation as a way of identifying and distinguishing between hypotheses as to what is working and what is not. But if we cannot really compare the data, then we lose a major source of identification of the cross-country differences that are relevant to the decision-making process. We also lose a valuable yardstick for measuring our performance relative to other countries.

For an example, I will refer again to productivity measures, which, as you may have gathered by now, are at the top of my list – for good reason. I have already talked about their relevance for estimates of the economy's production potential and the implications for capacity pressures and inflation. But our interest in productivity measures is also driven by the important link between productivity growth and improvements in living standards. Over the past few years, a hot issue for a number of countries, including Canada, has been to understand why the trend growth of productivity differs across countries. Basically, we need to understand the reasons for these differences in productivity levels and growth, if we are to formulate appropriate policy responses. But if the data are not comparable, then we do not know how much of a problem we really have to begin with.

I have used productivity measures as an example to make the point about the importance of comparability across countries. But this applies equally to other key data including, importantly for us central bankers, various price measures. In particular, we need to understand deviations from “the law of one price.” And so we see merit in, and support, the ongoing program by the World Bank on the international comparison of purchasing-power parities.

### **Importance of co-Operation among statistical agencies**

It is primarily in the context of, and in the interest of, cross-country data comparability that I will make my final remarks today.



This is where the importance of co-operation among national statistical agencies comes in – in a big way.

There are several reasons for that, and I have already touched on them as I went along. But since I attach a great deal of importance to this issue, let me summarize them again.

In the first place, as I said before, the demands on our national statistical agencies for additional, more timely, and more accurate information keep growing. Given staffing and financial constraints, they need to use their resources more effectively. All the more reason then to work “smart” by pooling resources on how to address common data challenges.

Another reason is that, as firms become global, they report to many statistical agencies. It would be helpful to gain better understanding of their operations by pooling our resources. Right now, we are a bit like the fabled blind men describing an elephant!

Still another reason for co-operation among national statistical offices is in the interests of better cross-country comparability of data.

Statisticians often face a trade-off between designing data that best fit the particular structure and circumstances of their country and adhering to international standards that allow for better comparability across countries. In a perfect world, we would all like to see both sets of statistics. But in the presence of resource constraints, I would be willing to give up a little on the best fit for my own country in exchange for better international comparability.

One way or another, it is extraordinarily important that the Chief Statisticians of the world have the opportunity to get together to discuss and agree on common concepts, definitions, and methodology. That’s a key step on the road to more comparable data. Not to mention, that such meetings also provide excellent learning opportunities for the participants – as, I am sure, this conference will, too.

I wish you all much success and many fruitful discussions – today and in the future. I will now be happy to take your questions.

# The historical background to the statistical activities of the Bank for International Settlements, 1930–2000

*Piet Clement (BIS)*

The statistical output of public and commercial entities has grown exponentially over the past half century. In the ever expanding endeavour to quantify and qualify economic and financial phenomena, the Bank for International Settlements (BIS) occupies a special place.

The BIS is the world's oldest international financial organisation, established in 1930. It is owned by and works for the main central banks of the world. While the BIS was initially a largely European-dominated institution, its scope and outreach have widened over time and it is now a truly global organisation (with currently 55 shareholding member central banks). Besides its headquarters in Basel, Switzerland, where currently some 520 staff work, the Bank has recently opened two representative offices, in Hong Kong and in Mexico.

The BIS's main field of activity has always been the promotion of central bank cooperation. More recently, this mandate has been defined more broadly as the promotion of monetary and financial stability, which entails an active dialogue with institutions other than central banks, such as supervisory authorities, governmental agencies and professional organisations representing financial and banking interests.

Central bank cooperation at the BIS has taken the following forms:

1. Most directly, cooperation takes shape through the regular meetings of central bank Governors at the BIS and a whole host of experts meetings, many of which have their origins in the 1960s Group of Ten (G-10) initiative. The BIS also hosts the secretariats of a number of affiliated organisations, such as the IAIS (International Association of Insurance Supervisors) or the FSF (Financial Stability Forum). The meetings and secretariat work contribute in improving information exchange, policy development and coordination, and standard-setting.
2. To support the meeting activities and monetary policymaking in general, the BIS provides timely and accurate statistical and analytical research on monetary and financial phenomena and developments. Data series and research results are disseminated through publications such as the BIS Annual Report, the Quarterly Review and the Working Papers series, and via the internet (<http://www.bis.org>).
3. The BIS also acts as a bank to central banks, by offering financial services (asset management, gold and foreign exchange transactions, etc) and by performing certain trustee and agency functions (eg the BIS was the agent for the various European exchange rate arrangements, including the EMS, 1979-94).
4. Finally, the BIS has also provided emergency financing to support the international monetary system when needed. Examples include two Group Arrangements put together at the BIS to support sterling (1966 and 1968), and the support given in the context of IMF-led programmes to Mexico (1982) and Brazil (1998).

The focus of this paper is on the historical development of the BIS's statistical activities.

## **From collection to compilation**

After the First World War, the collection, compilation and dissemination of more or less reliable economic and financial statistics was mostly the prerogative of national statistical government services. The creation of the League of Nations (1919), and its involvement in the postwar reconstruction of Austria, Hungary and other countries, gave rise to the first systematic and truly interna-

tional efforts in the field of economic and financial statistics. The statistical legacy of the League of Nations remains impressive to this day.

The BIS's first steps in the statistical field were, by comparison, very modest. Soon after its foundation, the Bank set up a Monetary and Economic Department (MED), a centre for economic and monetary studies modelled on similar services in the central banks, in particular the Bank of England and the Bank of France. For many years to come, the MED remained a very small department, but with Per Jacobsson, a future Managing Director of the IMF, it gained an economist of considerable stature.

In the 1930s, the BIS's statistical activity was confined to the collection of available national statistics of relevance to central banks in setting monetary policy: budget data, price indices, trade figures, interest rates, central bank reserves and the like. Such statistics as were collected found their way into the Bank's Annual Report, which quickly established a solid reputation in the international financial world. Surprisingly, the BIS further expanded its statistical activities during the Second World War. Reliable sources were of course scarce, but through its network of privileged contacts with all European central banks, the BIS succeeded in expanding the Annual Reports, including the traditional central bank statistics as well as figures on commodity prices, share price indices, clearing claims (mainly between Germany and the occupied territories), bond yields and commercial banks' balance sheets. During the war, the BIS's Annual Report constituted the single most comprehensive source for international financial and banking statistics available to both the Axis and Allied sides.

After the war, the focus of the Bank's statistical activities changed somewhat, as the BIS became intimately involved with the different European schemes for multilateral payments compensation, culminating in the European Payments Union (EPU, 1950-58). As Agent for the EPU, it was the BIS's task to collect each month the current account balance figures of each participating country with all its EPU trade partners and to compile the aggregate position of each country vis-à-vis the EPU as a whole, resulting in either a surplus or a deficit position. Deficits were then partly converted into credits and partly settled in gold (initially only 25% in gold, later up to 75% in gold). The EPU allowed the Europeans a long transitory period to restore their war-torn economies and monetary reserves before introducing full currency convertibility as foreseen by the 1944 Bretton Woods agreements. The EPU episode gave the BIS invaluable experience in compiling regular and comprehensive balance of payments statistics. This work was done by a group of barely a dozen experts, working in Basel under the guidance of Frederick Conolly, who reported regularly to the Board of the EPU at the OEEC in Paris. Not surprisingly, balance of payments figures and statistics on multilateral EPU positions figured prominently in the BIS's Annual Reports in the 1950s.

Another sign of the times in the 1950s was the growing attention paid to macro-economic aggregates and in particular national income figures. As most western countries started compiling regular GNP figures for their respective economies, the BIS too started to collect and publish these figures, allowing international comparisons.

In many respects, the statistical work of the BIS up to the 1960s remained relatively modest and traditional. A small professional staff in the Monetary and Economic Department was responsible for collecting the latest figures on a limited set of monetary and economic phenomena from national publications and through their privileged contacts at the individual central banks. For each country a "database" was maintained, which consisted of cabinets filled with data cards on gold reserves, price indices, industrial production, public finance, etc. These figures, painstakingly kept up to date by hand or by typewriter, then found their way into the tables and graphs illustrating the BIS Annual Report.

The 1960s, and more in particular the crisis of the Bretton Woods system, would bring about a profound change in the statistical work of the BIS. Not only was there a considerable growth in statistical output, there was also a marked shift from collection to compilation of data and a shift in focus from macro-economic aggregates to financial and banking statistics.

### **The Bretton Woods era and beyond: an ever growing appetite for figures**

At the end of 1958, the western European currencies were made convertible and the EPU was dissolved. The goal of the 1944 Bretton Woods agreement had been reached: a worldwide system of fixed exchange rates, anchored to gold, in which currency realignments would only take place in case of structural balance of payments problems in an orderly, pre-arranged fashion through the IMF. However, it soon became clear that the Bretton Woods system required quite a bit of management in order to make it work properly. Two problems preoccupied the monetary authorities in the 1960s more than anything else: the predicted scarcity of international liquidity (as the monetary

system was based on gold and the natural growth in gold supplies did not keep pace with world trade and economic growth), and the increasingly precarious position of the two reserve currencies, sterling and the dollar. The fact that from 1958 the United States was running large balance of payments deficits added to the urgency of these problems. On the one hand, the US deficits helped to ease the shortage of world liquidity, as they helped the US's trade partners to accumulate dollars to add to their reserves and finance their expansionary policies. On the other hand, it was hard to see for how long these deficits could be allowed to persist, as they were accompanied by a drain on the US's gold reserves and ultimately had to undermine the credibility of the gold-dollar parity of US\$ 35 per ounce of gold, fixed in 1934. As the Bretton Woods gold standard had in practice developed into a gold-dollar standard (the fixed exchange rate of many currencies being expressed in dollars rather than in gold), the official gold price of US\$ 35 per ounce became the cornerstone of the entire Bretton Woods edifice. US policymakers became convinced that the abandonment of the gold-dollar parity would spell disaster for the US economy and for the world monetary system. Therefore, the 1960s would see the Americans take numerous international initiatives aimed at protecting the gold-dollar parity and the system of fixed exchange rates based on it.

The urgent need for international monetary cooperation was brought home by a temporary loss of market confidence in the gold-dollar parity in October 1960, sending the London market gold price up to over US\$ 40 per ounce. This crisis and the determination to stick to the official US\$ 35 parity prompted the US monetary authorities to intensify contacts with their European counterparts. From December 1960, the President and Vice-President of the Federal Reserve Bank of New York began frequenting the monthly Board meeting weekends at the BIS in Basel, which traditionally brought together the Governors and high-ranking officials of the main western European central banks. In the IMF, the General Agreement to Borrow, initiated in late 1961 to support the position of sterling, led to the constitution of the so-called Group of Ten (G-10) rich industrial nations, which was actively promoted by the US and continues to play a role to this day. Finally, at the OECD in Paris, the so-called Working Party Nr 3 on monetary policy issues was created, bringing together government and central bank officials of the main industrialised countries. Throughout the 1960s, the G-10 and OECD Working Party Nr 3 would try to work out an appropriate reform of the international monetary system to guarantee its long-term viability. Central bank cooperation at the BIS, on the other hand, had the more limited but also more pressing aim of preventing and counteracting any financial or monetary crisis that might bring the Bretton Woods system down before it could be durably reformed. Thus, the role of the BIS was, in many respects, a holding operation, but one that became increasingly difficult as the fundamental reform of the system got bogged down in seemingly endless negotiations.

The efforts to tie over the Bretton Woods system until it could be reformed took many forms. The Gold Pool established by eight central banks in November 1961, and managed from the BIS in Basel, was an attempt to keep the gold price on the London market in line with the official parity of US\$ 35 per ounce through joint central bank gold sales and purchases. The attempt had to be abandoned in March 1968 as growing demand pressures had led to a considerable drain on the gold reserves of the participating central banks. Also at the BIS, the Federal Reserve Bank negotiated currency swap arrangements with all BIS central banks and with the BIS itself, providing it with sufficient and timely ammunition to intervene on the currency markets if required. Finally, a number of specific arrangements were negotiated at the BIS, aimed at counteracting speculative currency attacks, first and foremost on the pound sterling (Basel Agreement of 1961, First and Second Group Arrangement of 1966 and 1968), but also on the Italian lira (1964) and the French franc (1969).

International financial developments in the 1960s gave rise to other phenomena, which also called for increased central bank attention and cooperation. The feverish development of the so-called euro-dollar market was a point in case. The famous Regulation Q, which prohibited American banks from paying interest on short-term deposits held by non-residents, led the American banks to establish branches in Europe, where they could offer remunerative sight accounts denominated in dollars to attract new customers. A euro-dollar market developed in which European commercial banks became very active as well. Central banks looked upon these developments with some concern: although they rejected direct interventions in the euro-dollar markets, they agreed that closer monitoring of developments was required.

All these developments taken together led to a sharp increase in international monetary policy coordination. At the BIS a number of new fora and committees came into existence. The Gold Pool gave rise to bi-monthly meetings in Basel of the gold and foreign exchange experts of the participating central banks. Charles Coombs, Vice-President of the Federal Reserve Bank of New York, has left a vivid description of these Gold Pool meetings.<sup>1</sup> From 1965, these meetings included representatives from the Bank of Japan, the Bank of Canada and Sveriges Riksbank, who did not

<sup>1</sup> Coombs, Charles A, *The Arena of International Finance*, New York, Wiley and Son, 1977.

themselves participate in the Gold Pool. It thus became the G-10 *Gold and Foreign Exchange Committee*, which exists to this day at the BIS under the name of the Markets Committee. Its brief was to review developments on the gold and foreign exchange markets (with the focus increasingly shifting towards the latter after the demise of the Gold Pool in 1968) and to make recommendations to the Governors on possible joint central bank interventions. In 1964, the G-10 initiated regular meetings on “*multilateral surveillance*”, aimed at exchanging information on financial market and monetary policy developments in the individual countries, and more specifically on the sources of liquidity growth in each market. Supplementing or overarching these more regular and practical meetings were the so-called *Economists’ Meetings*, bringing together the chief economists of the G-10 central banks twice a year, in spring and in autumn, in order to discuss current and prospective economic trends and specific topical themes, such as the different ways in which member states handled balance of payments imbalances, different domestic interest rate structures, or the granting of medium term credits. Quite separately from these developments, the process of European unification, started by the 1957 Treaty of Rome, gave rise to its own BIS-based committee. In 1964, the *Committee of Governors of the Central Banks of the EEC Member States* started holding regular meetings in Basel, at which the Governors of the Six exchanged information on domestic monetary policies with a view to increasing cooperation and coordination within the EEC framework.

International developments in the 1970s cemented and further expanded the role of the BIS as a meeting place for monetary policymakers and a hub for information exchange. The unbridled development of the euro-dollar markets led to the creation in 1971 of a specific G-10 committee, the *Euro-currency Standing Committee*, which continues its work to this day with a broader scope as the Committee on the Global Financial System. The collapse of the Bretton Woods system in 1971-73 by no means spelt the end of efforts towards intensified international cooperation. Quite the contrary. The Americans may have become less active in this field after the abandonment of the gold-dollar parity in 1971 and the floating of the dollar from 1973. The fact remains that, under the regime of fluctuating exchange rates which followed Bretton Woods and in conditions of increased uncertainty following the 1973 oil crisis, there was, if anything, a need for more information exchange and cooperation, albeit again more on a European than on a global level. Thus, with the creation of the so-called currency snake and the European Monetary System (EMS), the activities of the Committee of EEC Governors gained in importance. The spectacular collapse of Herstatt-Bank (1974) gave rise to grave concerns about the inherent risks faced by internationally active commercial banks operating in a volatile environment. The Herstatt failure prompted the G-10 Governors to set up the *Basel Committee on Banking Supervision*, which would become more widely known for the Basel Capital Accord it published in 1988 and its successor – known as Basel II – which is currently being finalised.

The proliferation of meeting and committee activities at the BIS in the 1960s and 1970s had a very direct impact on the Bank’s statistical work. The Gold and Foreign Exchange Committee required detailed forecasts of the market supply of and demand for gold. The Committee of EEC Governors quickly established a pattern in which each member reported on economic and financial developments in his country, supported by increasingly detailed statistical material. The multilateral surveillance exercise and the monitoring of the euro-currency markets was of course all about the timely exchange of relevant statistical data. In each case, the BIS quickly assumed a secretariat role, first in collecting the required data and subsequently in streamlining and standardising them and compiling additional information from different sources. This was not always an easy exercise. More often than not, detailed data on a country’s monetary and financial health were still considered highly confidential. The initial experiences of the Gold Pool were not very felicitous, as sensitive figures on central bank reserve positions and market interventions regularly leaked to the financial press, putting the confidentiality undertakings of the Gold and Foreign Exchange meetings to a severe test. In 1964, the Bank of England felt it necessary to warn the Treasury that, through the multilateral surveillance exercise, details on the UK balance of payments and reserves position were henceforth being shared with continental central banks, having previously only been divulged in strict confidentiality to an inner circle of top government officials and members of Parliament.<sup>2</sup> The increased meeting activity and shared experience of Bretton Woods crisis management throughout the 1960s contributed a lot to putting such confidentiality concerns to rest and to creating an atmosphere of trust and mutual confidence, indispensable to the regular sharing of sensitive information.

2 See for instance: *Internal Treasury note, 21 October 1964, In Public Record Office, Richmond, T 318/70 – UK balance of payments, 1964-65.*

## The BIS Data Bank and international financial statistics

As the BIS grew more experienced in its secretariat role to the different committees, and as a result of technological developments in data processing, a more systematic approach was taken to the collection, compilation and dissemination of statistics. Two main strains in the BIS's statistical work developed, which remain determinant to this day: the development of a macro-economic databank on the one hand, and of a comprehensive set of international financial statistics on the other.

The decision to set up a consolidated *databank of macro-economic aggregates* was taken by the Governors in the BIS Board meeting of March 1975. This decision marked a decisive move away from the traditional, largely non-automated way of collecting and disseminating statistics. Setting up an automated databank in the 1970s was not an easy undertaking. Data provided by the participating central banks were sent to Basel via telex or phoned through to gain time. The experimental phase of the BIS Data Bank started in 1975 and lasted until 1978. The problems encountered were mainly of a technical nature and were resolved progressively thanks to the regular meetings at the BIS of central bank statistical and IT experts. In 1979, the BIS Data Bank moved from the experimental into the operational phase. A truly historic feat, given the limitations of computing and telecommunications back then. By the mid-1980s, the BIS Data Bank had established itself as a valued statistical tool used by the G-10 central banks and the BIS itself. For the participating central banks, the sole "entrance fee" to the BIS Data Bank was their commitment to provide timely and accurate data in line with the agreed methodology. In exchange for this fee, they gained access to a one-stop analytical tool bringing together the latest and most reliable available statistical information on the state of health and development of all G-10 economies.

Today, the BIS Data Bank covers more than 30 of the world's main economies. Direct access is limited to the participating central banks and is now given through the internet by means of secure password and smart-card identification. From this platform, all available figures can be easily exported and manipulated by the central bank economists to support their research.

A second series of statistics developed in response to the information needs of the different G-10 committees is the *BIS international financial statistics*, comprising the following three sets: international banking statistics, international and domestic securities statistics, and foreign exchange and derivatives statistics. Initially, the main focus, apart from on the traditional monetary aggregates, was on monitoring the frantic development of the euro-dollar markets, which led to the introduction of the locational banking statistics. In the 1970s, in an environment of currency floating, economic crisis, the recycling of oil money and high inflation, other statistical series gained more prominence: price indices, international capital flows and the risk exposure of internationally active commercial banks, which led to the introduction of the consolidated banking statistics. In the early 1980s, the international debt crisis – culminating in the 1982 Mexico crisis – gave new impetus to the collection and dissemination of statistics on individual countries' indebtedness, however incomplete these still were. Later still, in the 1980s and 1990s the rapid growth of new financial instruments drew attention through the regular publication of statistics on the development of the derivatives market. In addition to producing a wealth of continuous statistical series, the BIS also introduced topical ad hoc surveys, such as the triennial central bank survey of foreign exchange and derivatives market activity, started in 1989 (the sixth such survey is slated for 2004, covering 54 countries). Finally, the 1997 Asian crisis highlighted the systemic risks to financial stability and led to a further rethinking of the statistical needs of the central bank community.

From the outset, the audience for the BIS international financial statistics was meant to be much wider than just the central banks and to include the financial and academic world at large. This fits in with the central banks' call to help improve the transparency of the financial markets. Thus, the BIS international financial statistics are published regularly in the BIS Quarterly Review and through the BIS web site.

### Current problems and issues

The collection, compilation and dissemination of the statistics produced by the BIS with the help of its member central banks raises a number of specific problems and issues.

#### *Harmonisation of data (data standards)*

Harmonisation or comparability of data has always been a major concern when compiling statistical series over time or on an international level. Early harmonisation attempts in the context of the League of Nations in the late 1920s, or at a central bank experts meeting in 1928 at the Bank of

France, quickly led to the understanding that where harmonisation was not possible, the differences in definitions and interpretation should at least be made transparent. The BIS too has contributed to such harmonisation and clarification efforts. From the 1930s, a programme was initiated through which experts from member central banks were seconded temporarily to Basel to work in the Monetary and Economic Department, thus contributing to a better mutual understanding of statistical and analytical methods and concepts. In 1972, the Governors of the EEC central banks organised a meeting of statistical experts in Basel in order to ensure that the national economic and financial statistics prepared for their regular meetings would be consistent and comparable. Meetings of statistical experts from the central banks have since become a regular feature of the BIS's work. Through the Data Bank, the BIS has successfully introduced a standardised data exchange format between all participating central banks. However, harmonisation of data is not always a panacea. National definitions of certain macro-economic aggregates may differ ever so slightly between countries. In a number of cases these differences are allowed to persist, as smoothing them out artificially might compromise the methodological integrity and the coherence of the data reporting. These differences are always made transparent so as not to jeopardise unduly the international comparability of data.

It has to be said that the successor to the League of Nations, the United Nations, has continued to play an important coordinating role with regard to statistical harmonisation. An interagency task force on financial statistics, operating under a UN mandate, regularly brings together experts from the relevant agencies and international organisations, including the IMF, World Bank and BIS.

### ***Completeness and reliability of data***

After 1945, the BIS's statistical work was very much focused on Europe and the main western economic powers, the USA and, from the 1960s, Japan. In the 1980s and 1990s, this focus gradually broadened to include the emerging market economies, and more recently what, on the basis of their banking and financial sectors, are labelled the systemically important countries (which can include rather small economies, such as Luxembourg or the Bahamas). The inclusion of new countries in the BIS's statistical reporting of course also depends on their willingness to contribute data at an acceptable level of comprehensiveness and reliability. The BIS statistical services perform rigorous quality control on the data provided by reporting agencies, including cross-checks using different data sources. This is one reason why the BIS Data Bank currently covers no more than 30 countries. While all data in the BIS Data Bank are directly collected from central banks, some of the international financial statistics are also derived from other sources, such as national statistical agencies and commercial data providers (this is for instance the case for statistics on the development of the securities markets). The concern with the completeness and reliability of data is nothing new. Already in the early 1960s, an exasperated Charles Coombs cried out at one of the Gold and Foreign Exchange Experts meetings at the BIS that he and his colleagues could scarcely label themselves "experts" as the data on worldwide gold supply and demand available to them were at best very sketchy and of doubtful accuracy.<sup>3</sup>

### ***Timeliness***

Users of statistics constantly wish that the data could become available quicker, right on the heels of the events and trends they quantify or qualify. This, obviously, is a crucial element in the use that is made of these statistics. Central bank statistics are supposed to help monetary policymakers to make the right decisions in setting the interest rate or in intervening in the markets or not. Or, often enough, they provide the *ex post* justification for the monetary policy decisions that have been taken. Much more problematic is the use of financial statistics in predicting future developments, for instance in detecting and counteracting financial crises at an early stage. Whatever use is made of such statistics, the pressure is always there to make them available with ever shorter delays. It must be said, though, that in terms of timeliness central bank statistics in general and the BIS statistics in particular seem to have come up against the limits of what can be reasonably expected. The publication lag for some BIS international financial statistics has recently been reduced from six to four months and there is little scope for further reductions without jeopardising the quality of the data.

<sup>3</sup> *Gold Meetings, In BIS Archive, Basel, 7.18(16).*

### *Relevance and risks of overlap*

The rapid growth of the statistical activities of national and international organisations, public and commercial alike, has given rise to a very real problem of overlap and potential data overload. Moreover, it is a known fact that while new statistics are constantly being added to the tally, older statistics are only very rarely discontinued. An exercise undertaken by the BIS in the early 1990s aimed at slimming down the statistical output had quite the opposite effect. As a result of the feedback received from the central banks, the BIS felt it could not discontinue a single one of its statistical series and was at the same time compelled to introduce a few new ones! There is of course an important cost element involved. Starting up a new series is very costly, but once a statistic runs, there is a certain reluctance to abandon it, even if its significance has temporarily become more marginal, as it would prove even more costly to have to reactivate it in case it elicited renewed interest at a later stage.

In the case of the BIS, the risk of overlap has traditionally been the greatest with the statistical output of the IMF and the OECD. It must be said, though, that over the last few years the existing overlap has been much reduced and a more or less logical division of labour has taken place. Thus, the IMF has discontinued some of its banking statistics and the OECD its statistics on the securities markets, as these are already covered, in more detail, by the BIS. An interesting initiative in this respect developed as a direct result of the 1997 Asian crisis. At the instigation of the G-7 Financial Stability Forum, the IMF, World Bank, OECD and BIS joined forces in compiling more detailed and comprehensive statistics on the external public and private indebtedness of countries, which are now made available through the OECD web site with the hope that they can serve as a tool in the early warning mechanisms devised to prevent financial crises from getting out of hand.

### *Confidentiality*

Finally, confidentiality has always been a major concern for central banks, even to the extent that it could easily frustrate efforts to compile reliable and meaningful statistics. Monetary policymakers have always been extremely sensitive to information leaks, given their potential negative impact on the financial markets and the real economy. Experiences with information sharing on an international level were not always positive in this respect. For instance, at the very beginning of the Gold Pool operations in 1961-62, it was felt that these direct interventions on the London gold market had to be kept secret so as not to cause private market participants to start worrying over the official gold-dollar parity. Soon, though, details and figures related to the Gold Pool operations leaked to the financial press, much to the embarrassment of the central banks involved. This even led the Gold Pool members to adopt more stringent security measures, such as avoiding to cite precise figures in written reports. Fortunately, habit has bred confidence. The informal and confidential atmosphere of most central bank meetings – certainly those held at the BIS – has contributed over time to a more relaxed attitude in which information is exchanged more freely and willingly in the knowledge that it will be handled responsibly. The Committee of EEC Governors definitely played an important role in this process. In any case, the BIS has always applied confidentiality standards common to statistical reporting, eg in no category can there be fewer than three different observations so as to avoid possible identification.

### **Conclusion**

In concluding, it is fair to say that in its statistical work the BIS is but an instrument of the central banks. The typical process is that a central bank tables a request for new statistical material in one of the BIS (G-10) committees. The usefulness and feasibility are then investigated by the experts, and the final decision is taken by the Governors upon the recommendation of the Committee concerned. The BIS and its 15-strong statistical unit then step in to provide the goods. This entire process is obviously driven by the events and trends in the world economy and financial system at large. Thus, while the postwar world until the late 1950s, with its many monetary and capital controls and its fixed exchange rates, was a much more stable, predictable environment requiring perhaps less monitoring and therefore less financial statistical research, things definitely changed from the 1960s onwards, first with the crisis of the Bretton Woods system and then, even more so, in the 1970s, 1980s and 1990s, with increased volatility through floating and inflation and the drive for the liberalisation of financial and capital flows. The reliance of monetary authorities on ever more sophisticated statistical tools and analysis has increased concomitantly. The latest



trends in the BIS's statistical work are the emphasis on systemic risks and the provision of detailed price information on financial instruments rather than data on volumes only.

### **Further reading**

<http://www.bis.org/>

Philip D Wooldridge, Uses of the BIS statistics: an introduction, In BIS, Quarterly Review: International Banking and Financial Market Developments, Basel, 11 March 2002, pp 75-92.

BIS Papers n° 14, Guide to the International Financial Statistics, Bank for International Settlements, Basel, February 2003.

BIS Papers n° 16, Guide to the International Banking Statistics, Bank for International Settlements, Basel, April 2003.

# Financial data: Approaches in selected countries

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## 1. Introduction

This note outlines what we know so far about the approaches used in acquiring financial data by selected countries, in particular the division of responsibilities between the central bank, the statistical office and the regulatory agency. While the paper is essentially descriptive and high level, the objective is to see if there are potential lessons for Canada in the experiences of other countries. The most important question to be addressed in the overall project is whether there is a better approach than that being used at present to obtaining financial data. This question is important because of the costs that data acquisition imposes on both the collectors and the suppliers of data.

The method used in this note is to draw on diverse material (papers, web sites, third party reports, direct contacts) to characterize briefly how each country is producing or intends to produce financial data. Financial data are considered in a relatively broad sense. They include not only data from financial institutions and markets but also data on the financial situation of non-financial firms.

The description of the data collected by the relevant organisations is kept at a high level since the purpose is to discern broad divisions of responsibilities. Data are initially allocated to either the monetary policy or financial system functions. However, there is substantial overlap in data used by these functions, especially for the banking data.

The countries considered at this time encompass: Australia, Canada (for comparison purposes), Sweden, the United Kingdom and the United States. This choice of countries reflects those considered to be most likely to be relevant for identifying lessons that might be applicable to the Canadian situation. Assessments of the approach used in a particular country is given where it is available.

## 2. Common concerns

Across countries there is widespread consensus on the objective, framework and decision making process for the monetary policy function, a situation which does not yet exist for the financial system function. Borio (2003) says that “the search for appropriate policy responses to financial instability resembles the state of monetary policy in the early 1970s. Now, as then, both researchers and policymakers are beginning to sharpen their understanding of the ‘enemy’. Now, as then, they are groping for solutions.” p. 17. Padoa-Schioppa (2003) states that “The conceptual framework for financial stability analysis, unlike that of monetary stability, is still being developed.” Also, see Foot (2003). This difference in the degree of development of the conceptual frameworks is reflected in the nature of the concerns in central banks about data for the monetary policy and financial system functions.

Statements made at a recent conference involving participants from central banks around the world give an overview of common concerns about the major current challenges facing central bankers on the data front in both the monetary policy and financial system functions. The conference, “Challenges to Central Bank Statistical Activities,” was organized by the Irving Fisher Committee for 20 to 22 August, 2002 and was attended by more than 160 central bankers representing 73 countries as well as a few international organizations. Each of the sub-sections, one on monetary policy and one on the financial system, below will sketch some observations drawn from the papers presented at this conference, in particular from the issues and discussion papers on the assumption that they represent consensus views across central banks.

## **2.1. Monetary policy function**

As noted above there seems to be wide agreement that for the monetary policy function relative to the financial system function, there is a much clearer set of approaches (money targeting, inflation targeting, etc.). There is a shared understanding of the framework associated with choosing a particular approach. In addition, given the choice of a particular framework, there is an understanding of the implications for data requirements and for how the data are assembled and analysed. Despite this, there are still a range of data issues to be confronted in formulating monetary policy. For the increasingly used inflation targeting regime, explicit or implicit, there is a shared view that the information requirements are very demanding relative to other regimes.

White (2002), a keynote address, reviews some of the data challenges related to an inflation targeting regime. Note is made of the explicit recognition of the importance of expectations in decisions on monetary policy but the difficulty in measuring them. Similarly, formulation of policy in an inflation targeting regime often relies on estimating the gap in the economy between demand and supply but it is not easy to estimate the supply side potential of the economy for either the product or labour markets. Identifying the nature and understanding the implications for the empirical framework of structural change are ongoing challenges. On revisions, it is said that they can occur not only in data series but also in the focus given to particular series. In light of these challenges, policy makers often turn to other indicators but face the challenge of deciding which ones, what level of aggregation, and how robust they are with few clear criteria to make such decisions.

Selody (2002), an issues paper on monetary stability, notes that different approaches to taking monetary policy decisions may make different demands on the data, raising questions about the relationships between improvements in statistics and economic concepts. Once a particular framework is being used it may generate, at least in part, some economic data (examples given are the output gap and expectations variables). Given this interrelationship, how can either the data or the model generating them be validated? Selody notes that presenters suggest some possibilities: measure the data of interest in more than one way; use complementary data (financial data for example); and cooperate across countries by harmonizing key data series. Each of these suggestions have their own challenges to overcome, such as reporting burden and relevance.

Taub (2002) and Acx (2002), discussion comments, find the common theme to be one of growing data needs in the face of changes in economic behaviours, structure, and regulations, product innovations, and user demands for timely, sophisticated information.

## **2.2. Financial system**

White (2002) argues that to be able to analyse the stability of the financial system there is a need for information that allows both an assessment of the probability of financial instability and the costs of such instability. Analysis is difficult because of three structural changes: consolidation; globalization; and securitization. Each can either augment or diminish the achievement of financial stability. To improve the likelihood of the former a multifaceted approach is being used comprised of internal governance of financial institutions, public oversight and market discipline. To reinforce these incentives good data from both the financial institutions and non-financial corporations are needed. "Information about the health and exposure of financial institutions must also be based on adequate information about the health of those to whom they have lent" p. 16. Specific shortcomings in the data are the lack of a long-term series on property prices, of sectoral balance sheets, of joint exposures of financial conglomerates, and of the implications of new instruments and financial structures.

Tucker (2002), an issues paper on data and stability of the financial system, recognizes the plethora of financial information available but then argues that most of it has been designed and collected for purposes other than analysing the stability of the financial system. The monetary data set has been designed explicitly to meet the needs of monetary policy with a focus on the domestic currency activities of resident offices of credit institutions. Financial stability analysis focuses on the global activities of banks. Regulatory returns have interesting data but because their design emphasizes analysis of individual financial institutions the data may not be able to be aggregated (for example because of the use of exception reporting and different levels of consolidation). Issues are: the lack of purpose-built surveys - how much they matter and whether it is too early to tell; the readiness of data compilers to change their forms; and the degree of need to collect non-bank data, specifically for securities markets and insurance companies.

A common comment by the three discussants, Alves (2002), Craig (2002) and Porter (2002b), was the need for an economic/financial framework in which to embed the empirical framework. The essential point is that there is a need to know the context (financial structure, nature of economic shocks) to determine the data to focus on and how to interpret it. Where there might have

been a difference was in their interpretations on how far the initiative on financial soundness indicators led by the International Monetary Fund (IMF) went in providing a framework. To mitigate the effects of data limitations either via better data or compensatory compliance tools, the IMF has a twofold approach: compilation of a FSI compilation guide (which it views as providing a conceptual framework in addition to common definitions, etc.); and reliance on other surveillance tools (stress testing and core principles assessment). On having a framework, Porter was unequivocal in stating that “thinking needs to be done in the context of an economic framework, an economic model of some sort, not just an empirical one that can only identify a ratio as being unprecedented statistically” p. 221.

### 3. Country information<sup>1</sup>

At a general level, there are two main types of data - production and financial - that when aggregated are used as inputs for macroeconomic analysis.<sup>2</sup> Production data are directly linked to individual lines of business and are usually captured through management accounting systems. Financial data are linked to wider business activity and are usually captured through financial accounting systems. Production data are collected at the operational level, i.e., establishment, and financial data are collected at the enterprise level or for each legal entity. The best practice approach is to maintain a business register to support the relevant surveys.

Financial data measure the overall results of business activity rather than single business activities. These data are usually compiled using guidelines of the relevant accounting body (the one responsible for administering the Generally Accepted Accounting Principles or its equivalent) and are subject to external audit. Financial data are of principal interest to senior management of business, shareholders, researchers, and the financial markets. Often, financial data cannot be easily allocated to the operating lines of activity.

Most business surveys at national statistics offices collect production data. Usually there are a limited number of divisions at national statistics offices tasked with collecting financial data. Most central banks collect and disseminate money and banking statistics as part of their monetary policy function. The Riksbank has outsourced data collection and dissemination to Statistics Sweden but still retains responsibility for concepts and content (i.e., it is the principal and Statistics Sweden is the agent). Some central banks have regulatory functions and so collect detailed data on individual financial institutions. In some cases, central banks and regulatory authorities have worked together to design a data collection approach in order to reduce burden on the institutions that report to them. Only in Australia does it appear that the central bank, regulatory agency and the statistics office cooperate directly in building a common database from which they each can draw for their own purposes.

To reduce respondent burden some countries are making more use of tax data where possible. For example, in recent years Statistics Canada has been promoting the utilization of tax data for a number of reasons, including: tightening budgets, increased data demands, and concerns over response burden. Developments within the Canada Customs and Revenue Agency (CCRA) have also been a driving force. In the 1990s, CCRA introduced new requirements that businesses must have a Business Number and that incorporated businesses must report balance sheet and income statement information (i.e., General Index of Financial Information - GIFI). These CCRA initiatives have made it easier for Statistics Canada to reduce time lags, increase the quantity of data, and code information. Indeed, via the codes in the Business Register it is possible to link information for an individual company or a fixed group of companies across various surveys and to the CCRA data.

Below there is some discussion of how each of the selected countries collect data. A summary table is provided for reference purposes.

#### 3.1. Australia<sup>3</sup>

The Reserve Bank of Australia is responsible for monetary policy, the stability of the financial system, the safety and efficiency of the payments system and the issuance of currency. It provides statistics on interest rates, exchange rates, commodity prices, and on money and credit growth.

<sup>1</sup> Thanks to Greg Haymes for his contribution to this section.

<sup>2</sup> In the other parts of this paper the term economic data is used to represent the publicly available forms of “production” and other nonfinancial (household survey data for example) data.

<sup>3</sup> Thanks to Patrick O’Hagan and Art Ridgeway of Statistics Canada for the information they provided on the Australian situation.

In response to an overlap of activities among the three agencies, the Australian Bureau of Statistics (ABS), Reserve Bank of Australia (RBA) and the regulator, Australian Prudential Regulatory Authority (APRA) established a committee to determine how to most effectively and efficiently obtain the data that each required. Data needs entail: prudential data for APRA; depository corporation data to allow the RBA to construct the monetary aggregates; and financial data to allow the ABS to construct the financial accounts and national accounts. As part of the process, they undertook to ensure that each agency was no longer bound by different confidentiality rules. Initially, all data go to the regulator via an e-collection process to take advantage of its authority in requesting data from financial institutions. To manage the process a tripartite committee meets once a month to deal with content, process and data gap problems.

With respect to development efforts, various phases are envisaged. Phase I has been completed with the output from the first collection of data in December 2001 released in 2002. Phase I covered banks, other deposit-taking institutions and finance companies, and dealt with such issues as concepts (“booked in” versus “global”) and process (monthly data replaced the old quarterly data from the ABS). The following success criteria were met: fulfilment of all agencies' statistical needs (including certain data gaps); no loss in timeliness; increase in quality and harmonized data; and transitioned to APRA e-collection system. Phase II involves insurance and pension funds industries. There will be one or two more phases after Phase II about which I have no information at this time.

The post-mortem on Phase I concluded that: centralized data collection is more efficient (the response burden was reduced as a result); the overhaul of data collection (content) and data collection system was useful; and that the overlap of the involved organizations was reduced, but savings not yet realized as ABS and the RBA still process data unit by unit from the database maintained by APRA (no aggregate reports are generated by APRA).

The Reserve Bank of Australia remains responsible for processing and disseminating the financial data associated with its functions. As in most of the other countries considered here it gets the bulk of its economic data, including financial flow and national balance sheet data, for fulfilling these functions from Australia's central statistical office, the Australian Bureau of Statistics, and draws on other central banks and various commercial providers for financial and exchange market data.

### **3.2. Canada**

For analytic, monitoring and research work in the financial system and monetary policy functions, financial databases built at the Bank of Canada and outside of the Bank are used. The Bank builds databases on banking activity and on new issues, retirements and outstandings of bonds and equity (Capital Markets Statistics System, CMSS). It relies mainly on Statistics Canada for financial data on non-bank financial and on non-financial institutions, and for economic data, including financial flow and national balance sheet data. It uses various sources of market data to fill in gaps on credit ratings, secondary trading data, etc. External sources of data on the Canadian financial system include, among others, the Canadian Bankers Association, the Investment Dealers Association of Canada, the Investment Funds Institute of Canada, Moody's, the Office of the Superintendent of Financial Institutions, Standard and Poor's Compustat, Statistics Canada, Thomson Financial Datastream, and data drawn from the services used in the Bank's trading room.

In collecting banking statistics, the Bank works jointly with the Canadian Deposit Insurance Corporation and the Office of the Superintendent of Financial Institutions via the Tri-Agency Database System (TDS). TDS is used to collect the basic data in a common file format for the three organizations. Each institution then takes the basic data and converts them into the form most appropriate to their purposes. The data collected on behalf of the three organizations is maintained by the Bank of Canada.

During the development of TDS, Statistics Canada was kept informed, sometimes providing feedback on proposals. However, Statistics Canada collects similar data using its own surveys outside of the TDS framework. Confidentiality constraints in the various Acts governing the TDS organizations and Statistics Canada impede the sharing of information to resolve inconsistencies in the data.

As noted above the Bank of Canada constructs databases. It also disseminates data in its publications and on its web site. In addition, time series of Bank of Canada data are available from Statistics Canada for a fee.

### 3.3. Sweden<sup>4</sup>

In their paper on outsourcing central banking operational tasks, Schüllerqvist, Melin and Norrlid (2002) argue that since the Riksbank is not the financial supervisory authority and does not focus on the money supply for monetary policy, its money and banking statistics are probably more used by other institutions than by the Riksbank, especially by the ECB. A contact at the Riksbank provided more context noting that this decline in the internal importance of the money and banking data made it increasingly difficult to attract high quality staff to the section producing the money and banking data. In addition it was mentioned that substantial IT-investments would have been needed to have a sustainable working environment. Interaction with Statistics Sweden in other initiatives had shown that their staff was highly capable and their tools up to date. Completely withdrawing from this business was not an option, since these data had to be available to meet Sweden's obligation to organizations outside of Sweden, the European Central Bank (ECB) was specifically mentioned.

The Riksbank decided that the best way to proceed would be to outsource "financial market statistics" (equivalent to money and banking statistics) to Statistics Sweden. A contact at the Riksbank indicated that the financial market statistics transferred to Statistics Sweden "mainly comprise balance sheet statistics regarding credit institutions and similar, including data on lending, deposits and the money supply, as well as some securities statistics."<sup>4</sup> When asked to clarify "some securities statistics" the contact indicated that they included information on securities similar to that included in the Bank of Canada's CMSS database. In addition financial market statistics include interest rates for lending and borrowing of Monetary Financial Institutions vis-à-vis their customers. Under the outsourcing arrangement with Statistics Sweden, the Riksbank, as the principal, retains responsibility for determining what will be collected and disseminated while Statistics Sweden as the agent collects and disseminates the desired data. Indeed, the legal authority for collecting data from the banks in Sweden rests with the Riksbank, which can fine banks that do not meet the reporting requirements. When it asked Statistics Sweden to act as its agent the Riksbank sent letters to the banks explaining how things would work in the future.

To manage its part of the new environment the Riksbank is changing both the profile and number of staff. In the long term they will have fewer staff years with the relevant staff having greater analytical capabilities. These staff will interpret new reporting requirements/guidelines from international agencies, including the BIS, ECB and IMF, manage the relationship with Statistics Sweden, and determine the range and amount of effort regarding data to be compiled.

The arrangement became effective on 1 April 2003 with the first report provided at the end of April, hence it is still too early to assess fully the strengths and weaknesses of the new approach. However, it was noted by the contact that the Riksbank continues to have the same access as before to the banks, but with more modern systems, and economists at the Riksbank have better access to the money and banking data. One advantage in having a contract with Statistics Sweden was said to be more transparent costs of collecting these data.<sup>5</sup>

With respect to financial stability, the focus at the Riksbank is on large banking groups, essentially four groups, because of their importance to the payments system. The activity of these groups in Sweden and in other countries (mainly, other Nordic countries, Baltic countries, Poland and Germany) is monitored closely. The ten largest counterparties of these banking groups are also monitored. The framework is not as rigorous, in the sense of having models to use for "what if" scenarios, as that on the monetary policy side. It was observed that banking problems often start in non-bank institutions. At present, there are 30 people (one half with PhDs) working on financial stability, a tenfold increase from the 3 people involved when this activity started in 1996.

On the question of cooperation in collecting financial data between the Riksbank and the regulator, there is currently none. It was said that the effort became less "collective" after the mid-1990s in order to meet the ECB requirements on reporting timeliness. By taking somewhat longer than the ECB would like, the Swedish equivalent of the Financial Services Authority (FSA) were able to get higher quality data.

Sveriges Riksbank has increasingly scrutinized its different activities in order to focus on core business and cost efficiency. A weak internal demand for money and banking data, staffing problems, and the need to undertake major investments triggered the choice of approach.

<sup>4</sup> Thanks to Jan Schüllerqvist of the Riksbank for comments on a draft of this section and to Martin Anderson, Marten Blix and Maria Falk for earlier discussions.

<sup>5</sup> Norway was said to be thinking about this approach.

### 3.4. *The United Kingdom*

In the United Kingdom, most economic statistics, other than money and banking statistics, for informing policy decisions are produced within the National Statistics Framework. Within this framework the director of the Office of National Statistics (ONS) is responsible for ensuring quality control. The framework sets out codes and standards for the production of data by the Office for National Statistics, and by statistics collection and dissemination organizations devolved to Northern Ireland, Scotland and Wales. Data produced by the Bank of England (BoE) do not come under this framework. A broad statement in terms of the relationship between the Bank of England and the ONS is that the Bank of England is responsible for collecting data from banks and the ONS from non-banks. In addition, to having access to published data, the Bank of England has a direct link to an ONS statistical database whereby it can access a range of confidential/non-published data subject to certain security procedures although some information still remains confidential.

For monetary policy in the United Kingdom, Rowlatt (2002) characterizes the process as a tripartite one with the Treasury setting the inflation target, the Bank of England having responsibility for meeting the target, and the Office for National Statistics (ONS) providing a lot of the statistics to inform the policy decision.<sup>6</sup> When the Bank became responsible for setting interest rates in 1997, it became one of ONS's key customers. This changed relationship was formalized in a service level agreement (SLA) between the ONS and the Bank on economic statistics in December 1999. Rowlatt reports that the SLA defines the form and timeliness of the data supplied to the Bank, including expectations on quality and scope, consistent time series, and documentation on sources and methods. As part of the SLA the Bank is to inform the ONS of how it uses and interprets ONS economic statistics. Regular meetings occur between Bank and ONS staff helping to clarify objectives and constraints and with staff from the Bank, ONS and HM Treasury on development projects. Rowlatt says that "When formulating spending priorities for economic statistics, ONS places significant weight on the views of the Bank of England," p. 131.

Statistical series and supporting material compiled and disseminated by the Bank of England mainly consist of the Bank of England's monetary and financial statistics but include the Bank of England/NOP Inflation Attitudes Survey. The monetary and financial statistics include: domestic banking statistics; monetary statistics, which include the main UK monetary aggregates (M0 and M4); external finance statistics, which include some balance of payments data and figures for the UK's gold and foreign currency reserves; and international banking statistics. Special studies and research directed at international harmonisation and improvements to statistics are also a feature of the Bank's work. The Bank also publishes an Inflation Attitudes Survey, a national poll undertaken by NOP. The purpose of the survey is to quantify the impact of the Bank's efforts to build general public support and price stability, and to explore the evolution of public opinion and general understanding of monetary policy matters. Finally, the Bank also constructs other data series for analytical purposes which it makes available more widely if the series are sufficiently robust and likely to be of interest to others. The Bank's website does not contain statistical series published by other organizations that are used by the Bank in its work. ONS produces most of the economic statistics available in the U. K. and also disseminates the Bank of England banking data in one form or the other as part of the National Accounts.

In its work to ensure stability of the financial system, the Bank of England, like other central banks, examines the banking system quite closely, including bank exposures and robustness to adverse shocks. Gracie and Logan (2002) argue that, even though there are plentiful data for the banking sector, there is still the problem of no single source of data designed for financial stability analysis at the system level. They then review the strengths and weaknesses of the three sources of information for determining on-balance-sheet exposures used for such analysis: the BoE's money and banking statistics; the BIS data on cross-border exposures; and the FSA regulatory data. Ideally, for financial stability analysis the primary focus should be on consolidated data that exclude intra-group transactions so that there can be a comparison of the scale and distribution of UK banking sector exposures against its capital. To approximate the ideal the Bank of England combines the consolidated BIS and regulatory data with unconsolidated monetary data. However, Gracie and Logan note that detailed analysis of consolidated exposures is still difficult, especially when assessing sectoral exposures where borrowers are active in several different countries. They conclude that even though there is an international debate on the data available for financial stability analysis, especially for the IMF initiative on FSIs, other questions might be as important. In particular, the questions proposed are: how to combine data from existing sources or whether to de-

6 Rowlatt notes that "ONS was created in 1996 from the merger of the Central Statistical Office and the Office of Population Censuses and Surveys. ONS is a government department and is also an agency reporting to the Chancellor of the Exchequer" p. 127.

velop new sources. In addition to its own data and that of the ONS, the Bank of England draws on other sources to assess the financial health of the non-banking financial sector and private non-financial corporations. Some of the other sources are Thomson Financial Datastream, Dealogic, DTI, Merrill Lynch, Investment Property Databank, Council of Mortgage Lenders, Standard & Poor's, J.P. Morgan Chase & Co., CreditTrade, British Banking Association (BBA), published accounts, Bondware, and CLS Bank International.

In the past the implications of large, more structural changes for the data produced by the Bank of England were examined as part of an all embracing Banking Statistics Review. The last one in 1997 was reported as being so complex and time consuming that future changes would be negotiated on an ongoing basis. There is no indication that the Bank of England is considering major changes (outsourcing for example) in how it collects and disseminates data.

### 3.5. *The United States*

The Federal Reserve Board's (FRB) duties fall into four general areas: (1) conducting the nation's monetary policy; (2) supervising and regulating banking institutions and protecting the credit rights of consumers; (3) maintaining the stability of the financial system; and (4) providing certain financial services to the U.S. government, the public, financial institutions, and foreign official institutions. As for the discussions on other countries, the focus here will be on how the data requirements of the first and third areas are met.

The Federal Reserve operates independently of government but is subject to Congressional oversight. For monetary policy, the objective is sustainable growth – there is no explicit inflation target but there is consensus that a low inflation environment is the best way to realize this objective. The Federal Open Market Committee (FOMC), the chief body for monetary policy making typically meets eight times a year in Washington, D.C. At each meeting, a senior official of the Federal Reserve Bank of New York discusses developments in the financial and foreign exchange markets, as well as activities of the New York Fed's domestic and foreign trading desks. Staff from the Board of Governors then present their economic and financial forecasts. In addition, the Board's governors and all 12 Reserve bank presidents – whether they are voting members that year or not – offer their views on the economic outlook. In this process, a wide range of information is considered.

Relative to the other countries considered here the information sources used in monetary policy formulation in the United States are more diversified. In addition, the Federal Reserve itself produces a wider range of data (see table). National economic statistics from various government departments (for example, the Bureau of Economic Analysis and the Department of Labor) and the Federal Reserve itself (industrial production and capacity measures, financial flow data) are analysed. Surveys of key industry contacts assembled in The Beige Book and The Senior Loan Officer Survey Report are examined for indications of changes in trend. Some of the most critical statistics are the loan and deposit data that Reserve banks collect from banks and bank holding companies as they are used in analysing regional and national bank performance, credit demand and other banking topics. This is all in addition to the financial and exchange market data noted above.

As to assessing the stability of the financial system from the perspective of the functioning of asset markets, Porter (2002a) argues that existing data sources are adequate. He cites Federal Reserve access to high frequency financial market quotes from screens such as Bloomberg, Telerate and Reuters. He notes that this information is supplemented by direct contacts with market participants. He admitted that the information on the volume side was not as good being less frequent but still allowed a sense of balance sheets and impending stresses. The fact that survey information could be drawn upon to assess non-price lending terms facing households and firms, and household balance sheets was also mentioned.

Porter's note implies that monetary policy and financial stability are considered together both in his conceptual characterization and some of the examples that he gave. There is no indication that the Board of Governors of the Federal Reserve System is considering substantive changes in its approach to collecting and disseminating data. There is an important initiative among the three Federal Financial Institutions Examination Council (FFIEC) agencies (FDIC, FRB, and OCC) to develop a central data repository for implementation with the September Call Reports as a shared resource for those who provide or use Call Report data.<sup>7</sup> It is not viewed as a substantive change in approach in that it involves the same three partners in what might be viewed as a rationalization of their approach to collecting data for gains in efficiency and effectiveness.<sup>8</sup>

<sup>7</sup> FDIC – Federal Deposit Insurance Corporation; OCC – Office of Comptroller of the Currency. Call Report data are collected in Forms FFIEC 031 – “Consolidated Reports of Condition and Incomes for a Bank with Domestic and Foreign Offices” and FFIEC 041 – “Consolidated Reports of Condition and Income for a Bank with Domestic Offices Only.” Essentially, balance sheet, income statement and supporting schedules are collected.



## 4. Conclusions

There are a number of broad similarities in the approaches to obtaining data used by central banks. Most of them collect and disseminate data, or have collected and disseminated data, on their banking sectors and on series derived from banking statistics. Most of them rely heavily on external sources – the national statistical office for economic statistics, and commercial suppliers for financial and exchange market data. Most of them are continuously evaluating and upgrading their data requirements to adapt to changes in the economy and financial markets.

With respect to where there might be some lessons for the Bank of Canada, Australia and Sweden are the most clearly different in their approaches. While Australia's tripartite approach to collecting financial data through its regulatory agency may seem similar to Canada's Tri-Agency Database System, it is different in an important way as outlined below. As to Sweden, the contracting out by the Riksbank to Statistics Sweden of most of its data collection and dissemination activities is a dramatically different approach from those of other central banks.

Australia with its tripartite approach involving the Reserve Bank, the regulatory agency and the statistics office seems to have found a way for each organization to consult with each other about the details of the numbers without running the risk of violating confidentiality commitments. In Canada such consultation between the central bank and the statistics office about financial data from individual banks is impeded by the confidentiality restrictions in the Statistics Act. On the same question, it might be worth exploring further the arrangement allowing the Bank of England direct access to confidential data at the Office of National Statistics.

Sweden is following a partnership approach to ensuring "financial market statistics" are available. The Riksbank has given Statistics Sweden a contract to collect and disseminate these data (other data are collected on the same basis) but retains responsibility for determining the data to be collected and disseminated. Both internal and external reasons drove the Riksbank's decision. Internally, there were the staffing difficulties and the need to undertake major investments if the Riksbank were to continue in this business. Externally, Statistics Sweden was available with recognized competencies and modern equipment.

In both Australia and Sweden, the partnership arrangements are expected to yield cost savings but these are not yet evident. The other thing to note is that these partnership arrangements for the most part are about different approaches to collecting the banking data, albeit with some extensions as noted in the text.

With respect to the broader definition of financial statistics given in the introduction, there is not much indication that the central banks are actively involved in leading initiatives to improve financial data from non-financial companies.

There will need to be some follow-up work to ensure the accuracy of the information in this paper and to ensure that the range of data acquisition and dissemination models is suitably represented. The intermediate goal is to be able to provide reasonably solid answers to the following questions: what range of financial data are collected and disseminated by central banks? what are some of the "models" in use for acquisition and dissemination of financial data? why do central banks use a particular model? and what would be the key elements of an objective framework to assess different "models?" The ultimate goal is to implement a best practice framework for financial data acquisition and dissemination in Canada.

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Table 1– Cross country comparison focused on approach to data

	Australia	Canada	Sweden	The United Kingdom	The United States
Main functions	-monetary policy, currency, financial system, funds management	-monetary policy, currency, financial system, funds management, retail debt services	-monetary policy, currency, financial system, funds management	-monetary policy, currency, financial system, funds management	-monetary policy, currency, supervising and regulating banking institutions and protecting the credit rights of consumers, financial system, funds management

	Australia	Canada	Sweden	The United Kingdom	The United States
Data responsibilities	<p>-financial statistics (RBA activities – assets and liabilities, open market operations, foreign exchange transactions and holdings of official reserve assets, assets and liabilities of financial institutions, money and credit statistics, retail deposit and investment rates)</p> <p>-payments systems (credit and charge card statistics, debit card statistics, cheques and direct entry payments, real-time gross settlement statistics, points of access to the Australian Payments System)</p> <p>-RBA Index of Commodity Prices</p>	<p>-financial statistics (Bank of Canada activities – assets and liabilities, open market operations, foreign exchange transactions and holdings of official reserve assets; assets and liabilities of financial institutions; money and credit statistics, retail deposit and investment rates, capital markets statistics and international financial statistics.</p> <p>-payments system data are collected by the Canadian Payments Association but made available to the Bank of Canada in its role as overseer.</p> <p>-Bank of Canada Index of Commodity Prices.</p>	<p>-financial statistics (overview of structure of financial market, money supply, deposits and advances, deposit and lending rates of banks and housing credit institutions, the securities market, financial institutions)</p> <p>-balance of payments (q)</p> <p>-exchange rates (m) and – Riksbank’s assets and liabilities</p> <p>-international reserve and foreign currency liquidity</p> <p>-turnover in Swedish FX market</p> <p>-main refinancing repos</p> <p>-turnover in the Swedish money and bond markets</p> <p>-payments system statistics.</p>	<p>-financial statistics (domestic banking statistics; monetary statistics, which include the main UK monetary aggregates (M0 and M4); a quarterly report on small businesses; external finance statistics, which include some balance of payments data and figures for the UK’s gold and foreign currency reserves; international banking statistics.).</p> <p>-agents reports on business conditions.</p> <p>-statistics from an Inflation Attitudes Survey, a national poll undertaken by NOP.</p> <p>-other data series for analytical purposes are made available more widely if the series are sufficiently robust and likely to be of interest to others.</p> <p>-the Association for Payment Clearing Services manages the major UK payment clearing services.</p>	<p>-financial statistics (money and banking, interest and exchange rates, international reserves, consumer credit, finance companies, household debt service, delinquency rates on loans and leases, terms of business lending, agricultural finance, country exposure lending survey (FFIEC), flow of funds accounts for the United States, corporate medium-term notes, home mortgage disclosure act data (FFIEC), shared national credit program)</p> <p>-industrial production and capacity utilization</p> <p>-payments system data</p>

	Australia	Canada	Sweden	The United Kingdom	The United States
Approach to collecting data	<p>-the RBA, ABS and APRA have formed a tripartite group to cooperate on the collection of prudential data, monetary aggregates and data from financial institutions for financial and national accounts. APRA, the regulator, collects the data and the RBA and ABS draw on it to meet their needs.</p> <p>-for commodity prices various external sources are drawn upon to build the database.</p>	<p>-for banking statistics, the Bank of Canada, the Canadian Depository Insurance Corporation and the Office of the Superintendent of Financial Institutions cooperated to build the Tri-Agency Database System for use in collecting the data they need to obtain from banks.</p> <p>-for data on non-bank financial institutions, Statistics Canada information is used.</p> <p>-for data on new issues, retirements and outstandings of bonds and equities, Bank staff use various sources including data provided by its financial market staff.</p> <p>-for commodity prices various external sources are drawn upon to build the database.</p>	<p>-the Riksbank has commissioned Statistics Sweden to produce financial market statistics on its behalf</p> <p>-As of January 2003, Statistics Sweden (SCB) took over the majority of the current account data from the Riksbank: services account, transfers, compensation of employees, and non-financial enterprises financial transactions and stocks regarding extra-group credits. The official foreign trade statistics were already collected by Statistics Sweden for use in the balance of payments. The Riksbank retains responsibility for the collection and compilation of the financial account, investment income and international investment position.</p> <p>-It appears that the Riksbank collects the other data listed above.</p>	<p>-the Bank of England compiles and produces the above data.</p>	<p>-the Board of Governors constructs its data series in-house drawing on various sources to do so. For example, see the source and description information for the industrial production and capacity utilization indexes at <a href="http://www.federalreserve.gov/releases/G17//About.html">http://www.federalreserve.gov/releases/G17//About.html</a>.</p>

	Australia	Canada	Sweden	The United Kingdom	The United States
Approach to disseminating data	-the RBA disseminates data in publications and on its web site.	-the Bank of Canada disseminates financial data of limited time series length in its publications and on its web site. -for longer time series, people are referred to the CANSIM database at Statistics Canada.	-the Riksbank refers clients to Statistics Sweden for financial market statistics -the Riksbank is responsible for disseminating the entire balance of payments on a quarterly basis. -the Riksbank disseminates the other data listed above.	-the Bank of England data can be accessed on its web site or in its publications.	-Fed data can be accessed on its web site or in its publications. -the Fed makes some of its data available to the public through the U.S. Department of Commerce economic bulletin board. These data include: aggregate reserves, factors affecting reserve balances, money stock, assets and liabilities of commercial banks, foreign exchange rates, selected interest rates, consumer instalment credit, flow of funds, and industrial production and capacity utilization. -some data are made available via the Federal Financial Institutions Examination Council (FFIEC). -payments system data for the Fed's involvement in Automated Clearinghouse (ACH) and Fedwire operations are available at the Fed. Private sector ACH transactions are available on the NACHA web site.

	Australia	Canada	Sweden	The United Kingdom	The United States
Main external data sources – economic data	-Australian Bureau of Statistics	-Statistics Canada	- Statistics Sweden	-Office of National Statistics	-Bureau of Economic Analysis -Department of Labor
Main external data sources – financial market and payments system data	-Australian Prudential Regulatory Agency -financial market data come from various sources (market screens, etc.).	-non-bank financial institution data come from Statistics Canada. -financial market data are derived from quotes on screens like Bloomberg, Telerate and Reuters supplemented by direct contacts. -payments system data come from the Canadian Payments Association.	-financial market data are derived from quotes on screens like Bloomberg, Telerate and Reuters supplemented by direct contacts	-financial market data are derived from quotes on screens like Bloomberg, Telerate and Reuters supplemented by direct contacts	-financial market data are derived from quotes on screens like Bloomberg, Telerate and Reuters supplemented by direct contacts.

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SESSION 1

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## Measuring prices and inflation: methodological issues

### Overview of the change of CPI methodology

*Valentina Stoevska (International Labour Organization)*

It has been the long standing tradition of the International Labour Office (ILO), the agency responsible for the subject of consumer price indexes within the UN system, to ensure that the international standards on the CPI reflect current best practices and methodological advances. The first ILO recommendation dates back to 1925 in the second International Conference of Labour Statistics (ICLS), and subsequent revised resolutions were adopted by the sixth (1947), tenth (1962), fourteenth (1987) and seventeenth (2003) ICLS.

The resolution provides guidelines on recognized good practices for statistical offices and other agencies responsible for developing or revising the procedures for CPIs, and to promote the international comparability of the national CPIs. Another objective of the resolution is to promote better understanding of the processes involved in CPI calculation and the theory on which this is based.

### The EU Harmonized Index of Consumer Prices

*Bart Meganck (Eurostat)*

The Harmonized Indices of Consumer Prices (HICPs) are calculated according to a harmonized approach and a single set of definitions. This paper outlines the aims and history of the HICPs and summarises the most important HICP standards. It also notes some remaining key issues on the agenda for further harmonization.



## The measurement of core inflation

*Mark Wynne (Federal Reserve Bank of Dallas)*

The issue of the accuracy of price measures has received increased attention from central bankers in recent years. Citing the difficulty of accurately measuring prices in a dynamic economy, the Federal Reserve has shied away from offering a quantitative definition of price stability. However, the ECB, and a multitude of inflation targeting central banks, do not seem to share these concerns, but do cite the presence of measurement error as a reason for defining price stability as prevailing at some positive rate of inflation. This paper reviews the debate about price measurement as it pertains to the conduct of monetary policy. In addition to reviewing the measurement issues, the paper will also consider the issue of the role of so-called “core” inflation measures in the monetary policy process.

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WORKSHOP A

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## Country papers on CPI and PPI

### The Mexican experience on building a reliable CPI

*Jose A. Murillo and Javier Salas (Banco de Mexico)*

Mexico's central bank started producing a monthly CPI in 1929, auditing 64 prices per month in Mexico City. The coverage of the index has expanded through time, currently it is composed of more than 175,000 monthly price audits in 46 cities, while it is published on a bimonthly basis. The inclusion of more locations and a wider selection of goods and services made the CPI a better indicator of the cost of living of the average Mexican. However, the recurring inflationary bouts experienced during the seventies, eighties and nineties diminished the credibility on the central bank's ability to control and measure inflation. The credibility loss suffered by the CPI was a consequence of a combination of two factors: first, inflationary episodes came together with a severe dislocation of relative prices and because of the differences in the consumption baskets of the population, the inflation faced by different groups differed from the indicator at a national level; second, lack of transparency in the CPI construction in an environment of high inflation arose doubts on its integrity. Hence, restoring credibility on the inflation measure was key for a successful stabilization program. The strategy was based on the establishment of a quality management system for the production of the indicator that would be audited by internal and external agents together with a heightened degree of transparency on the CPI methodology and results. The paper makes a detailed description of the CPI evolution to its current state, explains the mechanisms used to restore its credibility and draws some lessons on its importance to attain a successful disinflationary process.

### The CPGI and its relationship with other price indices in China

*Wang Zhenying (People's Bank of China)*

- Review on the establishment and development of the statistics of company goods price index (CGPI) at the People's Bank of China (PBC). In this part, several topics will be involved, such as the background and process of establishment of CGPI, and the story of improvement of the statistics.
- The methodology of compilation of CGPI, including sampling, classification of samples, formulae employed in compilation of CGPI, weights to various categories of commodity.
- Different indices derived from CGPI, including general index, sub-indices with different classification of commodity, such as production process, usage and industrial category.
- Empiric research on the relationship between CGPI and other price indices, such as CPI, RPI, PPI.
- The utilization of CGPI in the process of formulation and implementation of monetary policy in China, which includes monitoring movement of general price, monitoring the change in investment, monitoring shifts in production cost of firms and so on.

- The shortcomings of current CGPI statistics and improvements.

As time goes on, the weights employed in computation of CGPI need to be adjusted based on the change in the structure of commodity markets. In order to enhance the quality of CGPI, the PBC plans to upgrade the software and pay more attention on staff training.

## Core inflation vs headline inflation

*Maxwell Chibelushi Musongole (Bank of Zambia)*

In this paper, measures of headline versus core inflation are explored. Their suitability to the Zambian situation is discussed. It is found that the statistical methods are best suited for Zambia. Based on this, monetary policy recommendations are made. Further it is observed that the information represented by inflation should be vague in nature though the figures themselves are crisp numbers. Based on this observation, the inflation data for the period 1994 to 2004 are classified into fuzzy states. A set of membership functions associated with the fuzzy states are extracted. The possibility analysis and the necessity measures of the fuzzy states are carried out. The meaning of the inflation figures is achieved.

WORKSHOP B

## Price statistics: special topics

### Banking Services Price Index: an exploratory analysis for India

*R. B. Barman and G. P. Samanta (Reserve Bank of India)*

In this paper we examine the issues involved for constructing a banking services price index for services rendered by banks in India. As well known, traditionally the major part of banks' revenue is generated from their activities in relation to financial intermediation, though in recent years, banks are increasingly tending to provide many direct services. Thus, an ideal price index for banking services would cover prices of both direct and intermediation services. As direct services are charged explicitly, measuring and pricing these banking services pose no special conceptual problem, except possibly certain data deficiencies. But the issue is very complex conceptually for intermediation services. Besides, the implementation of the existing theory of price index of financial intermediation services is limited mainly due to the lack of required data and/or pronounced estimation problems. In this context, this paper presents some empirical results in respect to banks' intermediation services for India.

### Statistics on prices for financial instruments

*Per Nymand-Andersen (European Central Bank)*

Financial market statistics play a central role in the monetary policy strategy of the European System of Central Banks. Such statistics are intensively used in order to analyse in a systematic way the relationship between monetary policy and financial markets' structure and dynamics. The availability of relevant data and the ability to apply appropriate methodologies determine the quality and comprehensiveness of available indicators and thereby the quality of the monetary policy decision-making. This paper therefore reviews the recent literature on pricing models for debt securities and sets out the different approaches in estimating yield curves. The literature review provides the fundamentals for the necessary empirical studies required for establishing a prudent framework for the development and publication of reference yield curves for the euro area and community level as a whole.

## Measuring property prices and assessing the fair value of property

*Wensheng Peng (Hong Kong Monetary Authority)*

This paper examines recent developments in the property market in Hong Kong, summarising indicators of market activity including price and transaction, fundamental variables that support the recovery in prices, and bank exposure. A simple framework is proposed to put some key indicators in a structured way for assessing excess movements in property prices and vulnerabilities to sharp corrections. The paper also studies the impact of property market developments on consumer price inflation, and employs an adjustment to the official consumer price index in order to assess the latest developments in underlying inflation.

## Monitoring property prices

*Petr Vojtisek (Czech National Bank)*

Asset prices including property prices are playing an increasingly important role in the conduct of the central bank's monetary policy. This is true not only in respect of monetary policy purposes but also for financial stability issues which are of growing interest to central banks generally. There are different channels in which property prices contribute to the transmission of monetary policy impulses.

There are both official and commercial sources of information on property prices in the Czech Republic. Some of them have adequate coverage but are not up-to-date and the reverse is also true. The Czech National Bank uses different sources for monetary analysis purposes in order to combine their relative advantages. On the other hand their disadvantages also create additional problems in this work.

The importance of property prices for the CNB and a short assessment of their development during the transitional period, as well as a description of the available sources and how to capture this issue, probably in co-operation with the statistical office, will be presented in this paper.

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**SESSION 2**

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# Output, capacity and productivity: key issues

## Measurement issues in comparing growth and labour productivity growth

*Francois Lequiller (OECD)*

This paper examines how measurement problems affect international comparisons of labour productivity. It suggests that these measurement problems do not significantly affect the assessment of aggregate productivity patterns in the OECD area. However, these problems do influence the more detailed assessment of productivity growth, notably the role of specific sectors and demand components in aggregate performance. The paper shows that there are only a few significant problems regarding the comparability of nominal GDP across OECD countries, the most important being the treatment of software investment. In most cases, efforts are underway to reduce the size of these differences. Measurement differences for real GDP are also important, although several of these factors have impacts that work in different directions. Moreover, several of these problems primarily affect the distribution of total GDP across different expenditure categories and across different activities, not necessarily GDP growth. The measurement of labour input is the third major factor affecting labour productivity estimates. A key challenge in deriving comparisons of productivity growth across OECD countries lies in ensuring that estimates of labour input are consistent with the GDP information and that the components of labour input, hours worked and employment are internally consistent. The paper shows that a careful assessment of available data and their underlying concepts is often equally important for developing accurate estimates of labour productivity growth as cross-country differences in the underlying basic data. To address this problem, OECD is currently developing a reference database on productivity at the aggregate level.

## Estimating the output gap in the Polish economy: the VECM approach

*Michał Gradzewicz and Marcin Kolasa (National Bank of Poland)*

This article presents three estimates of the output gap, one using the production function method, and the other two by assessing the long-term product using cointegration relationships (based on the production function and on the hypothesis of permanent income). It also presents an analysis of time-relationships between the estimated output gaps and selected measures of inflation using the covariance of a VAR-type stochastic process. The methods employed yield different estimates of the output gap. The time paths of calculated gaps and the analysis of time relationships (conditional on the existence of relationship described by the Phillips curve and the possibility of using obtained gaps in it) allow the authors to conclude that there's no inflationary pressure from the aggregate demand in the Polish economy, at least till the end of 2003.

## Federal Reserve estimates of capacity utilization and the Bureau of the Census' survey of plant capacity

*Norman Morin (Board of Governors of the Federal Reserve System)*

The Federal Reserve publishes estimates of capacity and capacity utilization for the industrial sector that are consistent with the Federal Reserve's estimates of industrial production. Capacity and utilization rate estimates for industries that account for roughly 90 percent of manufacturing are based primarily on the Bureau of the Census' Survey of Plant Capacity (SPC). The concepts and history of the Federal Reserve's measures of capacity and capacity utilization are discussed; the methods with which the measures are constructed are described; and the use of data from the SPC is detailed. It is shown that the Federal Reserve capacity modeling procedure does not, in most cases, discard significant information from the SPC utilization rates. Other variables from the SPC, such as industry work-patterns and reasons for operating at less than capacity levels of output, are described and tabulated, and their potential usefulness is explored both for constructing the Federal Reserve's measures of capacity and capacity utilization and for examining margins of adjustment.

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**WORKSHOP C**

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# Productivity statistics

## Revisiting recent productivity developments across OECD countries

*Bruno Tissot (BIS)*

There has been a growing interest in comparing productivity developments across industrial countries in recent years. The scope of the paper is to distinguish economies where productivity gains have improved from those where they have declined in the past years. The reasons for the growing interest in the issue of productivity are discussed and the various difficulties encountered are described. In particular, it is argued that comparing levels as well as changes in productivity across countries can be misleading and that focusing on changes in productivity changes (ie the second derivative) could help to judge relative economic performances across countries. A general framework for determining trend productivity gains and searching for time breaks is therefore presented. An important issue is the need to take into consideration the state of the business cycle as well as the impact of capital accumulation when looking at developments in labour productivity. Finally, cross-country analyses are presented that suggest some important conclusions. In particular, it is shown that the level of US labour productivity is the highest among the major industrial countries and has been rising the fastest in the recent past. Rather than just reflecting stronger capital accumulation, this performance has been associated with a higher rate of technological progress that was maintained during the latest recession. More importantly, perhaps, the US performance has improved in relative terms, as total factor productivity growth has accelerated in the United States but decelerated in most other economies.

## Labour productivity: average vs. marginal

*Ulrich Kohli (Swiss National Bank)*

In this paper, we examine the relationship between the average productivity of labour and its marginal counterpart. As long as the income share of labour is fairly steady over time, which happens to be true for the United States, the two measures give very similar results. However, the apparent stability of the labour share is the outcome of several opposing forces. Thus, capital deepening tends to increase it due to the relatively large value of the Hicksian elasticity of complementarity. This is essentially offset by the fact that technological change is mostly labour augmenting. Furthermore, changes in the terms of trade and in the real exchange rate impact on the labour share as well, although these effects are quantitatively small in the case of the United States. Our analysis rests on a tight theoretical framework being based on the GDP function approach to modeling the production sector of an open economy. Full multiplicative decompositions of both measures of labour productivity are provided, and the link with total factor productivity is documented as well. Our estimates are based on both econometric and index-number approaches.



## Measuring total factor productivity for the United Kingdom

*Charlotta Groth, Maria Gutierrez-Domenech and  
Sylaja Srinivasan (Bank of England)*

A good understanding of productivity growth is important for understanding aggregate supply capacity, and so for the conduct of monetary policy. To understand the sources of supply capacity well, it is important to measure output and factor inputs correctly. This article summarises recent and ongoing research at the Bank of England on improved measures of factor inputs. This work explicitly accounts for changes in the quality of these inputs and for the flow of services available from them, as well as for the costs of adjusting the level and utilisation of the inputs over time. This research was presented at a workshop on 'measuring factor inputs' held at the Bank of England in December 2003.

## Information technology and productivity changes in the Italian banking industry

*Giorgio Gobbi and Luca Casolaro (Banca d'Italia)*

This paper analyzes the effect of information technologies (IT) in the financial sector using micro-data on a panel of over 600 Italian banks over the period 1989-2000. We estimate stochastic cost and profit functions allowing for individual banks' displacements from the efficient frontier and for non-neutral technological change. Data on IT capital stock for individual banks enable us to distinguish between movements along the efficient frontier and shifts of the frontier owing to the adoption of new technologies. We find that both cost and profit frontier shifts are strongly correlated with IT capital accumulation. Banks adopting IT capital intensive techniques are also more efficient. We interpret this last result as evidence of a catching-up effect consistent with the usual pattern of diffusion of the new technologies.

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**WORKSHOP D**

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## Output gaps and capacity

### Estimating the output gap in Colombia: an eclectic approach

*Adolfo L. Cobo (Central Bank of Colombia)*

The size of the output gap is a key issue in the definition of the monetary policy of the Central Bank of Colombia. The measurement has become even more relevant in recent years with the implementation of Inflation Targeting in the context of a deep and long lasting economic slowdown. The main goal of this paper is to present different measures of the Colombian output gap, comparing their results and evaluating their advantages and disadvantages. This task will be tackled in two ways.

First, I present some traditional measures of output gap using rigorous statistical approaches, ranging from simple non-structural methods as Hodrick-Prescott Filter to more complex multivariate methods as Kalman Filter. In this part I also include estimations of output gap based on a production function approach that takes into account measures for NAIRU and NAICU. The alternative estimations are subject to different tests trying to establish how sensitive they are to changes in the sample period or to model specification, and how much information they carry for inflation forecasting.

Second, I will offer alternative estimations of the output gap using informative and qualitative variables and information by economic sectors. This approach is justified given the poor quality and short length of economic series that is common to many emerging economies. Moreover, Colombian economy usually faces important and irregular supply shocks that are hardly identifiable by statistical methods. Under these conditions, standard statistical approaches may not perform optimally. As with the traditional estimators in the first part, special attention will be paid to the contribution of the new measures to explain inflation.

### Estimating the output gap for the Turkish economy: an Extended Kalman Filter application

*Çağrı Sarıkaya and Fethi Ögünç (Central Bank of the Republic of Turkey)*

Inflation reduction and price stability have become the overriding goal of monetary policy in the last years. The objective of price stability makes the central banks to utilize all available information in the economy to foresee the future course of price developments.

Monetary policy actions are forward-looking, regarding possible threats to the objective of stable inflation. In this respect, one of the relevant indicators that has been monitored by the central banks for the implementation of monetary policy is the output gap. Output gap, the difference between actual output and its potential level, is a key indicator of inflationary pressures among various measures of resource utilization. Since potential output is defined as the level of output that can be sustained without putting pressure on production costs and thus on inflation, a level of actual output above potential may be seen as a signal requiring the monetary authority to tighten the monetary conditions.

However, potential output and output gap cannot be directly observed. Therefore, it is not surprising to see a wide range of detrending methodologies utilizing univariate models as well as multivariate filtering models to come up with plausible estimates of these two variables. Hodrick-Prescott (HP) filter is the most commonly used univariate technique extracting cyclical frequencies from the data. However, HP filter is subject to criticisms as being purely statistical and having no economic content. These criticisms emphasize on considering the relationship between output gap and other macroeconomic variables central to the definition of potential output – inflation and employment – to obtain a more reliable estimate. At this point the multivariate filtering techniques adding information from assumed macroeconomic relationships such as Phillips curves enters into the picture. As stated by Kuttner (1994), the problem is to estimate the parameters to obtain the unobserved variable, output gap, which is most consistent with observed inflation. In this respect, one appropriate estimation technique is the Kalman filter, which is a recursive algorithm for optimally forecasting the unobserved component, given observed variables and imposed economic structure.

Taking the link between output gap and inflation into account is not the whole story. Another important point is that the relationships among the variables are not intact so that the inflation dynamics in an economy can change over time. Especially in emerging market economies like Turkey, where exchange rate movements and expectations are crucial in determining the pricing behaviour, adoption of a new monetary policy regime and transition to a fiscal and financial restructuring period may significantly affect the behaviour of economic agents including price makers. Due to prolonged implementation of fixed rate regimes, historically the exchange rate developments seem to dominate other factors in determining inflation dynamics in Turkey. However, several studies show that after the adoption of the floating regime, the exchange rate pass through to prices has been weakened compared to pre-float period. Therefore, given the fact that structural changes give rise to parameter variation, it would be better to estimate potential output and output gap within the context of a Kalman filter algorithm, where the recursive nature of the algorithm allows us to observe time-varying relationships between relevant variables.

This paper presents a bivariate unobserved components model to estimate a measure of output gap for Turkey. The motivation is the need for an output gap estimate to be used in the construction of economic forecasts and to be evaluated in the conduct of monetary policy as a key indicator of inflationary pressures. Being aware of such pressures becomes more important for the monetary authority that is committed to maintain price stability in the context of an inflation-targeting regime. Although it is difficult to measure output gap with a high degree of precision, the reliability of the output gap estimate depends on the goodness of the underlying model and consideration of country-specific conditions. In this respect, the algorithm introduced in this study seems to account for these factors.

The paper is organized as follows. In the section 2 we briefly present the general structure of the model in common with the state-space form and extended Kalman filter algorithm. In section 3, we present an output gap estimate for Turkey and discuss the implications of time-varying model parameters. In section 4, we discuss the relationship between our output gap estimate and chosen macroeconomic variables such as capacity utilization rates, employment, real wages, productivity and investment. Section 5 concludes.

## Using additional information in estimating the output gap in Peru: a multivariate unobserved component approach

*Gonzalo Llosa and Shirley Miller Lira (Central Reserve Bank of Peru)*

One of the key elements for inflation targeting regime is the right identification of inflationary or disinflationary pressures through the output gap. In this paper we provide an estimation of the Peruvian output gap using a multivariate unobserved component (MUC) model, relying on an explicit short run relation between the output gap and inflation rate (Phillips Curve) and structural restrictions over output dynamics. The results show that the MUC output gap estimate is less sensitive to end of sample problems and exhibits a close dynamics with the inflation process than the standard output gap estimates.

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WORKSHOP E

# Output and output indicators

## Composite leading indicator for economic activity in Turkey

*Aslihan Atabek, Saygin Şahinöz and Evren Erdoğan Coşar  
(Central Bank of the Republic of Turkey)*

Economic growth is the main determinant of the robustness and prosperity in the economy. For this reason, the issue of economic growth has long been a central concern of nations. There has always been an interest in measuring long-term trends in economic growth itself partly because analysts of business cycles are interested in measuring deviations from long-term trends. Early detection of business cycle turning points has always been a major concern to policy makers, businessmen and investors. Clearly, early recognition would allow them to trigger counter cyclical policy measures.

An efficient way to predict business cycle turning points is to use leading indicators. However, experience in many countries has shown that, it is not reliable to use just one economic indicator for short term forecasting because some leading series may produce false signals of future changes. In order to provide a more comprehensive measure of economic activity, composite leading indicators have been developed in many countries. The composite leading indicators are based on a basket of economic indicators, which show a leading relationship with the economic activity. The composite leading indicator (CLI) enables government and business to track the economy's performance and forecast this performance over the near term.

The OECD has developed a system of "Composite Leading Indicators (CLI)" to provide early signals of turning points (peaks and troughs) between expansions and slowdowns of economic activity. The OECD compiles CLIs for 23 member countries (including Turkey) and for 7 country groups such as Euro area and G7.

In this paper, firstly, the results of the joint work of the Central Bank of the Republic of Turkey (CBRT) and the OECD on the construction of the CLI for the Turkish economy are presented and then the turning point forecasts of the economic activity using this constructed CLI are examined. In line with the OECD CLI system, growth cycle approach is followed in the construction of the CLI. Growth cycles can be defined as the fluctuations observed in the de-trended economic time series. In this respect, seasonal adjustment is done for the series that show a marked seasonal pattern over the year with TRAMO/SEATS and to de-trend the series, a modified version of the Phase-Average-Trend (PAT) method adopted by the OECD is used.

The preliminary step in the composite leading indicator approach is to choose a proxy for the economic activity, which is called the reference series. In this study, Industrial Production Index is chosen as the reference series, which has the advantage of being a monthly reported variable with 5 weeks delay, its turning points being in line with those of the Gross Domestic Product. Besides, in the OECD CLI system, the Industrial Production Index is used as the reference series for most of the countries.

After selecting the reference series, a database is constructed to cover the variables that represent the major sectors in the GDP. From the database, a number of leading indicators is selected according to some criteria such as economic significance, length and consistency of the lead, cyclical conformity, missing or extra cycles, smoothness, frequency of publication and timeliness. Several CLIs are constructed as the combination of the selected leading indicators and the CLI that shows the best performance is chosen. The final CLI consists of the production amount of electricity, discounted treasury auctions interest rate, import of intermediate goods and expectations taken from the CBRT Business Tendency Survey about stocks of finished goods, new orders received from the domestic market, export possibilities and employment.

To provide information on the likelihood of future turning points in the economy, a probabilistic indicator based on the Neftci's (1982) sequential probability algorithm is also implemented. The transition probabilities calculated from this algorithm are intended to determine empirical rules for predicting the future turning points.

This paper is organized as follows. Section 2 gives information about the reference series and describes the potential leading indicators that are to be brought in relation with it. Section 3 sets out the cyclical characterization of the reference series and of the leading indicators considered, together with the final CLI. Section 4 gives the results of the turning point forecasts and discusses its use in predicting the future turning points. Finally, the main conclusions of the work are drawn in Section 5.

## Real-time data and business cycle analysis in Germany

*Jörg Döpke (Deutsche Bundesbank)*

This paper examines the consequences of using “real-time” data for business cycle analysis in Germany based on a novel data set covering quarterly real output data from 1968 to 2001. Real-time output gaps are calculated. They differ considerably from their counterparts based on the most recent data. Moreover, they are not rational forecasts of the final series. The consequences of using real-time data for inflation forecasts, the dynamic interaction of output gaps and inflation, and stylised facts of the business cycle are also addressed. The results suggest that revisions of data and estimates can seriously distort research and policy implications.

## Comparing growth performance between Eastern European countries

*Barbara Döbeli (Swiss National Bank) and  
Marcin Kolasa (National Bank of Poland)*

This paper measures the main factors explaining real domestic income growth in Poland and compares it to that of two other new EU members, Hungary and the Czech Republic. The analysis is based on an index-number decomposition which explicitly incorporates the terms-of-trade effect. This framework reveals pitfalls resulting from using real GDP as a proxy for real income in the face of changing terms of trade. We can show that Poland's average annual growth performance from 1995 to 2002 in this country group was outstanding in terms of real GDP, but much less so in terms of real domestic income. Regarding the latter, the main forces driving growth in all three countries were technological change and capital accumulation.

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**SESSION 3**

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# Financial Accounts: key issues

## Key issues in Financial Accounts statistics

*Reimund Mink (European Central Bank)*

Financial accounts statistics become increasingly important to monitoring monetary and financial markets. Central banks also focus more and more on these data as growing globalisation and cross-border ownership as well as financial innovation seem to have resulted in a faster transmission of policy and other effects, perhaps more oriented towards sectors rather than countries. Otherwise, financial accounts statistics are still a rather underdeveloped field of study. This might be because of the high complexity and detailedness, in which the data are usually compiled and presented.

Several key issues are discussed in this paper. They refer to the economic accounting structure of financial accounts statistics, the concepts how such accounts are assembled and the practice how the data are disseminated and used for economic and policy analyses.

## The impact of expected changes in international accounting practices on compiling monetary and financial statistics

*Ekaterina Prokunina (Central Bank of the Russian Federation)*

Globalisation increasingly draws the attention of the international community to the development and implementation of common standards designed to ensure the effective functioning of economic and financial systems. The most widely discussed are the International Accounting Standards (IAS), a set of internationally accepted principles and rules used in compiling and presenting corporate financial statements.

Financial reporting is a major source of information for the SNA, balance of payments and monetary and financial statistics and, therefore, any change in the accounting standards affects the interests of macroeconomic statisticians. The report considers the IAS from the viewpoint of their compliance with the requirements of the financial survey contained in the new IMF Monetary and Financial Statistics Manual (MFSM).

It analyses the purposes of the IAS and MFSM requirements and the tasks being tackled by users of financial statements and the financial survey. The report highlights similarities and differences in the methods of compiling and presenting data according to the IAS and MFSM. The results of the analysis serve as a basis for drawing preliminary conclusions on the effects of companies' conversion to the IAS on the statistical information system.

## Assessing household sector risk: an Australian perspective

*Carl Schwartz (Australian Central Bank)*

The increase in housing prices and in household indebtedness in Australia since the mid 1990s has been unusually large, both by our own historical standards and by comparison with experience abroad. A recurring theme from episodes of financial instability in Australia and overseas is that a rapid run-up in property prices, especially when coupled with heavy borrowing, can be an important warning sign of future financial fragility. So a key question at the current conjuncture is whether developments in the household sector represent a threat to the Australian financial system and to the macro-economy more generally. For that reason, the Reserve Bank has carefully reviewed recent developments in housing finance and household balance sheet data in order to better understand the risks that they might pose to economic and financial management. The Australian Prudential Regulatory Authority (APRA) has also undertaken extensive stress-tests of individual institutions to assess their vulnerability to falls in residential property prices. This paper outlines recent changes in financial indicators of the household sector, the reasons behind these changes, and an assessment of the vulnerabilities.

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WORKSHOP F

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# Financial Accounts; general issues and country experiences

## Compiling the Flow of Funds of the Spanish economy

*Pedro Abad (Banco de España)*

The Banco de España began to compile flow of funds or financial accounts statistics in the early 80s. It has since contributed substantially to the analysis of financial flows in the economy in its studies and reports, especially in the Annual Report published each year in mid-June. Along with this report it compiles the publication Financial Accounts of the Spanish Economy (FASE) which, however, draws on quarterly data and is updated with this frequency on the Banco de España website. Recently, the FASE have been adapted to the new and more complete conceptual framework of ESA 95 methodology. Undoubtedly, the financial accounts are a valuable tool for describing the financial flows of the economy from an integrated and integrating perspective drawing on different information sources, both in relation to the non-financial variables that reflect the real activity of economic agents and to the flows of funds between the different sectors of the economy. This note addresses the recent experience of the Banco de España in compiling the financial accounts, the key characteristics of the FASE and a reference to the main elements of the compilation process. Finally, to illustrate the analytical value of this information for the analysis of the economy's financial conditions, the note offers information in summary form (from 1990) from different perspectives on: financial flows/stocks of the economy as a whole (structures by sector/financial instrument); financing and investment flows; financial wealth; non-financial sectors' debt and inter-sectoral financing flows, among others.

## Updating the Philippines Flow of Funds by SNA 93 and MFSM 2000

*Marriel M. Remulla (Bangko Sentral ng Pilipinas)*

The Flow-of-Funds (FOF) is a systematic presentation of the sources and uses of funds of the various sectors in the economy during a given period of time. It shows which sectors are generating surpluses or incurring deficits and how the deficit sectors obtain the necessary financial resources and the surplus sectors allocate their excess funds. The FOF had its origin as a statistical framework independent from the System of National Accounts (SNA). The 1993 revision of the SNA provided for the integration of the FOF in the national accounting framework, ensuring the consistency of the FOF with the other macro-aggregates generated in the other accounts of the SNA.

Philippines began compiling the FOF in 1980. The compilation continued until 1994, after which there was a lull as the reorganization in 1993 of the Central Bank of the Philippines into the Bangko Sentral ng Pilipinas (BSP) imposed additional demands on statistical activities. Subse-



quently in 2000 after another round of reorganization, this time confined to the Department of Economic research, the compilation was reactivated, which extended the series to 1999.

The 2000 FOF onwards will introduce major revisions with the implementation of the revised international standards recommended in the 1993 SNA and the 2000 Monetary and Financial Statistics Manual (MFSM), to enhance its relevance for policy use. This will attune the accounts to the international developments in the framework and ensure coherence with the revised Philippine BOP statistics which have migrated to Balance of Payments Manual V (BPMV), and the Philippine Monetary and Financial Statistics and the Philippine System of National Accounts, which are also moving towards the implementation of the revised manuals.

The paper will present the changes made in the concepts, the terminology, classifications, data presentation and methodological changes in the estimation. Results and analysis of the initial estimates for 2000, 2001 and 2002 FOF will be presented. Issues and problems anent to the implementation of the revised guidelines will be discussed to solicit comments for the improvement of this developmental activity.

## The financial systems of European countries a comparison from a Financial Accounts perspective

*Laura Bartiloro and Riccardo De Bonis (Banca d'Italia)*

The design of financial systems is fundamental for the assessment of economic growth and social welfare. After a survey of the main theoretical issues on the architecture of financial structures, this paper first measures the degree of financial convergence in Europe and then compares financial assets and liabilities of households and firms. The main sources of the data are the financial accounts statistics, which contain detailed information on how financial resources are allocated from households to firms and the General Government. Europe is still characterised by different financial systems and a clear trend to convergence is not supported by the data. Differences arise in terms of size and composition of financial assets and liabilities; also the international openness of countries differs. North-European financial systems are generally more developed and market-oriented than Southern ones. In all the countries the importance of retail share holdings has risen in recent years, despite the downturn in the Stock Exchanges between 2001 and 2002.

## Neural networks and other non-parametric methods for data editing of financial variables

*C. Biancotti and R. Tartaglia Polcini (Banca d'Italia)*

Estimation of aggregates in the financial accounts can benefit from closer integration with results coming from sample surveys. Where Italy is concerned, the total amount of financial instruments held by households as recorded in the Survey of Households' Income and Wealth, carried out biennially by the Bank of Italy, could be used to robustify household asset entries; the Surveys of industrial and of service companies could help shed light on aspects of the business sector such as trade credits, following what is already done by other central banks by way of ad hoc business surveys.

Data quality control assumes a critical role in this context: if survey information is to be used in order to complement data sources for the financial accounts, a very high reliability level is needed, lest additional errors are introduced in the process of integration.

The paper presents automatic error detection methods for large databases and the results of their implementation on financial variables observed in the named Surveys on households and on firms. Machine-learning algorithms such as neural nets and support vector machines are employed alongside selective editing techniques to efficiently spot dubious information.

WORKSHOP G

# Financial Accounts: domestic sectors

## Net lending of households and NPISH: an analysis of discrepancies between financial and non-financial accounts

*Audun Grønn (Norges Bank)*

Central banks need reliable indicators at an early stage of current economic and financial developments for their policy implementation. Norges Bank releases monthly and quarterly financial and monetary statistics, as part of the basis for the central bank's policy decisions. In Norges Bank's Quarterly Economic Bulletin, September 2003, realtime properties and the degree of revisions of these statistics were analysed. Among the statistics are quarterly financial accounts for households and non-profit institutions serving households (NPISH).

The financial accounts statistics show the financial position of households and NPISHs as well as their transactions in financial markets. They also serve as a frame of reference for recent developments in the non-financial accounts, i.e. macro aggregates like household and NPISHs consumption expenditure. For this reason, the net lending derived from financial accounts is cross-checked with corresponding net lending figures derived from capital accounts. In theory these residuals should be identical, but experience shows us that significant deviations occur for households and NPISH net lending.

The focus of this paper is on the observed discrepancies between households and NPISHs' annual net lending derived from financial and capital accounts, with the purpose of improving the factual basis for decision-making. The analysis will attempt to decompose the deviations into different sources for discrepancies. One part of the analysis involves examining the weaker areas in the compilation of financial accounts. Unquoted shares and transactions towards the rest of the world represent two difficult compiling problems. Another part of the analysis involves an investigation of the link between assets and liabilities and the corresponding income and expenditure flows, like interest income, interest expense and dividends. It is of current interest to examine the link to income accounts for financial instruments such as deposits, loans, shares and insurance technical reserves.

## Investment and financing of the enterprise sector: what is the value-added of using Financial and National Accounts data?

*Elmar Stöss (Deutsche Bundesbank)*

When analyzing the enterprise sector several data sources can principally be used. Most studies are based on direct information, respectively enterprise balance sheet statistics. Since the nineties a lot of articles were published exploiting panel data. The most prominent example is the estimation of the investment function. An essential reason for concentrating on microeconomic research were the disappointing results of former macro-oriented studies. Nevertheless also a few recent articles have the aim to explain investment behaviour of firms by using financial and national accounts data. This paper tries to discuss the pros and cons of both data sources. Some aspects mainly concerning coverage, timeliness and periodicity are emphasized why it may still be necessary to work with highly aggregated data. Finally it is shown for Germany which economic information can be derived from financial and national accounts data when investigating the period 1991 to 2003.

## Towards a better classification of households assets in Financial Accounts

*François Lequiller (OECD)*

In the European System of Accounts, the current classification of financial operations and financial assets and liabilities is primarily based on the degree of liquidity and the legal characteristics of financial assets. The risk of the asset in question, moreover, seems to have a broadly "orthogonal" dimension in relation to its liquidity and even in relation to its legal nature. Thus the varying degree of risk attached to household financial investment is not directly taken into account in this classification. In recent years, however, this dimension has assumed greater importance, both during the strong rise in share prices during the period 1997-2000 as in the period 2000-2002 which was marked, as we know, by a sharp downturn in the indexes. Knowing who, at a given time in an economy, bears the risks on their financial assets and what is the precise nature of the risks borne by each will, during the coming decades, take centre stage in economic and political thinking. In a context of markets tending towards increased volatility, the various risks borne by financial assets will certainly not diminish and it is very important to know precisely how these risks are shared between the different sectors of the economy. It has often been remarked, of course, that the numerous financial innovations which have emerged, especially during the last decade, make it very hard sometimes - for example in the case of "securitisation" of debt - to "pinpoint" precisely who is bearing a certain type of risk. This difficulty cannot be denied, but it does not, however, prevent one from making considerable progress in ascertaining the distribution of risks across the economy as a whole, even if here and there one inevitably encounters problems which are difficult to solve.

## Measures of financial positions of households and non-financial corporate sector

*Richard Walton (Bank of England)*

### Net lending/borrowing of the non-financial corporate sector

Net lending/net borrowing in the UK is the final balancing item of the non-financial accounts. This represents the balance on the financial account and is the difference between net acquisition of financial assets and net incurring of liabilities. As such, it represents the amount the sector has to invest in financial assets (or repay debt) or the amount the sector has to borrow through financial liabilities.

*Net lending/-borrowing, 1995-2003 (billions of national currency)*

	1995	1996	1997	1998	1999	2000	2001	2002	2003
Euro area	2.1	-0.2	-0.8	-0.8	-1.7	-3.5	-1.9	-0.8	
US	-0.5	-0.2	-0.4	-1.2	-1.8	-2.6	-0.7	0.6	
UK	1.2	3.4	-4.8	-5.2	-13.2	-10.1	-14.5	5.2	17.7

### Gearing ratios for non-financial companies

*Capital gearing ratios of non-financial companies, 1995-2003*

	1995	1996	1997	1998	1999	2000	2001	2002	2003
Euro area	92	78	67	56	46	53	63	82	82
US	58	52	45	43	37	47	58	78	73
UK	20.7	19.6	18.0	18.3	17.9	21.4	25.4	32.6	29.9

Capital gearing ratios for non-financial companies are vital tools in studying potential risks to financial stability arising from bank lending to corporations. One measure of corporate capital gearing is discussed here. The measure is capital gearing at market prices.

### Profitability of the non-financial corporate sector

*Private Non-financial companies' profitability, 1995-2002*

	1995	1996	1997	1998	1999	2000	2001	2002	2003
Euro area	7.6	7.9	8.1	8.5	8.6	8.5	8.5	8.5	
US	10.7	11.2	11.8	11.8	11.8	11.4	10.9	11.5	
UK	12.3	12.9	13.3	13.3	12.6	12.3	11.6	11.4	12.3

In the UK, the rates of return presented in the article, International comparisons of company profitability (UK Economic Trends, 15 October 2002) are ratios of the operating surpluses of non-financial companies compared with capital employed, expressed as percentages. The rate of return can be calculated in many ways, but this is considered the most important measure of profitability because it expresses the return on invested capital. Corporate profits are a leading indicator of business cycles.

### Household sector debt ratios

*Household sector debt ratios 1995-2003*

	1995	1996	1997	1998	1999	2000	2001	2002	2003
Euro area	41.2	42.4	44.4	46.1	48.2	49.3	49.3	50.7	52.0
US	67.6	68.1	68.8	70.5	72.3	75.0	79.2	82.9	86.0
UK	17.5	16.8	15.6	15.0	13.0	14.4	16.1	17.5	17.3

In the UK, household sector capital gearing is measured by household indebtedness (including both mortgages and consumer credit) in proportion to total assets. Total household assets consist of financial assets plus housing wealth. Data are seasonally adjusted and are quarterly. In the euro area and US, household debt is expressed as a percentage of GDP. In the euro area and UK, sole traders and partnerships without independent legal status are included in the household sector. In the US National Income and Product Accounts (NIPA), both sole traders and all partnerships are excluded from the household sector and grouped in the non-corporate business sector. These exclusions have a downward effect on the assets of US households compared with UK and euro area households, but it does not have a major effect on savings, because the income generated by these units is attributed to households.

### Household sector savings ratios

*Household sector savings ratios 1995-2003*

	1995	1996	1997	1998	1999	2000	2001	2002	2003
Euro area	17.5	17.1	16.2	15.1	14.2	14.0	14.3	14.9	
US	6.9	6.2	5.9	6.6	4.6	4.6	4.0	4.5	
UK	9.6	7.6	9.7	6.0	5.1	7.2	7.2	4.8	6.0

In the UK, the euro area and US, the savings ratio is calculated as gross savings as a percentage of post-tax or total available income. In the UK, data are seasonally adjusted and quarterly and derived from national accounts; the household sector includes households and non-profit institutions serving households. US data have been adjusted to enable a comparison to be made with the euro area data.

## Monetary statistics of the Croatian National Bank as a data source for Financial Accounts

*Lidija Hećimović and Igor Jemrić (Croatian National Bank)*

The Republic of Croatia has not yet started to compile the financial accounts, but together with other activities aimed at harmonisation of the statistical practice with the EU requirements, the official statistics is required to specify the procedures, methodologies and competence for the purpose of financial accounts compilation, in accordance with the EU guidelines.

Within the SNA93 financial accounts, monetary statistics represents one of the most important data sources for the compilation of the part related to subsector "Financial Corporations". The CNB has at its disposal most of the statistical data needed for compiling the SNA93 financial accounts, since the CNB is responsible for collecting and compiling data from depository institutions (banks and housing savings banks) through a set of data in the Statistical Report. The Statistical Report contains statistical information on stocks of assets and liabilities, which may fulfil the requirements of financial accounts structure, if modified to a certain extent, in terms of expanding the data coverage. Other financial institutions are under jurisdiction of other state regulatory institutions.

This paper aims to illustrate the statistical data sources available for compiling the financial accounts of the Republic of Croatia, with an emphasis on subsector "Financial Corporations" and to present the existing sectorisation of financial institutions, as well as the sectorisation according to the financial accounts requirements. The first part of the paper presents the role and usability of monetary statistics in the context of the financial accounts compilation related to subsector "Financial Enterprises". The second part deals with the institutional transactors sectorisation issues, and the third part describes the current data sources available in the CNB, as well as the statistical monitoring of other financial institutions. In addition, the restrictions and possible problems are also described. The last part discusses the elements of the SNA93 financial accounts.

## Interpreting South African credit aggregates following the implementation of new accounting standards

*J. P. van den Heever (South African Reserve Bank)*

New accounting standards expand the reporting of items on the balance sheet rather than off the balance sheet and the reporting of items at market value. This has had a significant impact on some of the key credit aggregates calculated from the banking sector's balance sheet. This paper discusses and quantifies this impact using South African data. It also suggests alternative aggregates and approaches that may be used to extract as much useful information as possible from the banking sector's statistical returns.

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**WORKSHOP H**

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# Financial Accounts: linkage with Balance of Payments

## Quality measures for quarterly National Accounts and related external statistics

*Wim Haine (Eurostat and European Central Bank)*

For monetary policy purposes, it is indispensable to dispose of high quality (i.e. accurate, timely, and complete) data. Quality is an important topic in European statistics. The 2002 fourth progress report of the Economic and Financial Committee (EFC) on the Statistical Requirements in the EMU states that more work is needed to operationally assess the various dimensions of quality. The Statistical Programme Committee (SPC), in collaboration with the Committee on Monetary, Financial and Balance of Payments Statistics (CMFB), was invited to make proposals in this regards.

As a result, a joint European Commission (Eurostat)/European Central Bank Task Force on quality have been established for assessing the various dimensions of output quality in Quarterly National Accounts and in Balance of Payments statistics, with a view to offering guidance to data users.

The paper discusses different quality indicators for euro area/EU aggregate quarterly national accounts (QNA) and related external statistics (BoP). It builds on the recommendations adopted by the CMFB in 2003 and 2004. First, the paper briefly explains the quality framework that was used as a common language and structure. Second, quantitative quality indicators are presented to gauge 1) source data, 2) revisions, 3) timeliness and 4) the scope of the dataset. Thirdly, quality areas which are not easily quantified but merit special attendance are addressed. This presentation focuses on QNA and also elaborates on those aspects where additional BoP quality indicators have been developed (e.g. consistency indicator). While QNA and BoP quality indicators are fully consistent, there are some differences in detail e.g. as regards the degree of complexity. This is due to differences in the audience targeted: the former are aimed at publication in press releases and a wide audience, while the latter are intended for annual comprehensive quality reports addressed also to expert users. Finally, the paper puts forward suggestions for communicating quality indicators to all users.

## The Rest of the World account in the Monetary Union Financial Accounts

*Carlos Sánchez Muñoz and Celestino Girón Pastor (European Central Bank)*

The 'Rest of the World' (RoW) account in the Monetary Union Financial Accounts (MUFA) comprises euro area residents' transactions in and holdings/outstanding amounts of financial instruments vis-à-vis counterparts outside the euro area. To the extent possible, the euro area balance of

payments (b.o.p.) and the euro area international investment position (i.i.p.) should be the primary sources for compiling the RoW account for transactions and stocks respectively.

This paper describes the relevant differences between the b.o.p./i.i.p. items and the components of the RoW account in the MUFA (on both conceptual and practical grounds) and explores the possibilities to reconcile them. The experience of the euro area in aligning methodologies and practices in both areas may illustrate possible avenues for the generalised use of the b.o.p./i.i.p. for financial accounts purposes.

## Balance of Payments as data source for Financial Accounts

*Branimir Gruić and Igor Jemrić (Croatian National Bank)*

As part of the international economic relations statistics, the Croatian National Bank (CNB) compiles the balance of payments and the international investment position statistics. This text concentrates on the usability of the Croatian balance of payments in compilation of the financial accounts.

The balance of payments methodology is based on international concepts that define residents, valuation of transactions, time of recording and conversion procedure in the same way as in the system of national accounts. It is primarily usable for compilation of the rest of the world part of the financial accounts that shows financial transactions between residents and nonresidents. Although not the same as that of the financial accounts, the structure of the balance of payments enables identification of four institutional sectors (monetary authorities, government, banks and other sectors) and their transactions grouped by type of financial instruments and their maturity thus enabling direct linkage to most of the financial account items.

The structure of the paper is the following: international guidelines are briefly presented in the first part of the text, followed by a description of linkages between the balance of payments and the financial accounts. Usability of the Croatian balance of payments for compilation of financial accounts is then presented for each standard component and the first quarterly estimates of the financial accounts for the rest of the world are given. The text concludes with recommendation of further developments of financial account statistics in Croatia that should be based on detailed flows of funds created from available data sources.

## Balance of Payments statistics as an important tool for the compilation and the analysis of Financial Accounts in Austria

*Gerald Wimmer and Michael Andreasch (Austrian National Bank)*

The paper is dealing with the following aspects:

*1. Important source for the rest of the world account.*

The data derived from the balance of payments statistics (balance of payments for transactions, international investment position for stocks) are major sources to provide the rest of the world sector account within the financial accounts in Austria. This section is also illustrating the decision tree, if for certain financial instruments there are more than one data source available providing data for the rest of the world sector account.

*2. Bridging from the functional approach to the approach by financial instruments.*



The bridging exercise from the functional structure within the balance of payments statistics into the structure by different financial instruments within the financial accounts will be illustrated in detail for the compilation in Austria. This exercise will be described both from the compilation viewpoint to illustrate the details within the balance of payments statistics, especially within the portfolio investment statistics, which are used for the compilation procedure and from the analytical viewpoint to use the different goals of balance of payments and financial accounts in one "overall" framework. This framework should encompass all information to analyse flow of funds channels and the reasons behind the cross-border investments especially due to the influence of foreign direct investments.

*3. Importance of the cross-border transactions and stock data for the Austrian economy in the light of the ongoing internationalisation.*

This section of the paper investigates the proportion of the cross-border activities in relation to the overall financial assets and liabilities especially in the area of securities, shares and other equities to illustrate the importance of the rest of the world sector account for an open economy like Austria. The membership in the Monetary Union has accelerated this internationalisation. The empirical evidence of this facts will be illustrated in this section including a comparison with selected other EU-countries. Furthermore the regional breakdown of the data within the balance of payments statistics allows the analysis of the cross-border financial investment within certain geographical areas. Again in this respect the euro area is one of the most important for Austria and will be highlighted in this paper.

## Cross-border lending and local bank presence: the Dutch experience

*Dirk van der Wal (De Nederlandsche Bank)*

Over the last decade internationally active banks have shifted from cross-border lending to local presence. Dutch banks now lend almost 80 eurocent locally against each euro that is lent cross-border. In analysing these developments, this paper tries to provide some explanations. It is hypothesised that this shift stimulated economic growth in the host countries.

## On the compilation of a Balance of Payments statement for the international organizations

*H. Lub (De Nederlandsche Bank)*

In balance of payments methodology, international organizations have a special place: they are not resident of any country. As a consequence, all transactions by international organizations are relevant for the balance of payments. Viewed from a different angle, all transactions reported in the income and cash flow statements of international organizations are balance of payments transactions. Individual countries include their transactions with international organizations in their balance of payments statements. With a view to solving global discrepancies, it is also desirable to compile a balance of payments statement for international organizations, in particular international financial institutions like World Bank and the regional development banks (see IMF, Balance of Payments Statistics Yearbook 2003, part 2).

In my paper I weigh the pros and cons of a choice for sending survey forms to international financial institutions or using their Annual Reports as a source for balance of payments data. I review the correspondence, or the lack thereof, between balance of payments methodology and accounting standards (mainly US GAAP). The main differences relate to the distinct income con-

cepts in both accounting systems. Other differences relate to the distinct treatment of depreciation and provisions. From this a better understanding of the influence of the recent introduction of IAS in Europe and elsewhere on the compilation of the balance of payments may be derived. This also provides a clarification of statistical needs that should be taken into account in the bookkeeping not just of international organizations, but of enterprises in general.

I conclude my paper by making suggestions for a better clarification of transactions by international organizations (funding, equity transactions, and payment arrears) that may be taken into account in the present review process of the Balance of Payments Manual or, alternatively, may find a place in the Balance of Payments Compilation Guide.

## Balance of Payments and statistical monitoring of private capital outflow

*S. Shcherbakov (Central Bank of the Russian Federation)*

The tendency of capital transactions liberalization being watched in transition countries inevitably leads to increasing dependence of their monetary systems on the external markets situation, and thus there is a necessity to create an adequate statistical system to monitor international financial flows.

It is a wide spread practice, at present, to analyze international capital flows using such integrated indicator as a *net outflow of private sector capital*. This indicator shows the final result of international economic transactions, i.e. changes in a country's international investment position, and answers the question in which direction a capital flow is taking place (into the economy or the opposite way), and what absolute value it has. However, it is not designed to disclose the subtle structure of this phenomenon, i.e. to observe investment preferences of residents and non-residents. Their investment behaviour is not just the same at least because of their different disposition to a particular economy and reaction to events that changes the investment climate.

Therefore, the analysis should contain the following indicators:

- inflow of foreign capital (increase in external liabilities);
- outflow of foreign capital (decrease in external liabilities);
- export of capital by residents (increase in foreign assets);
- repatriation of capital by residents (decrease in foreign assets).

The indicators mentioned above significantly expand the capability of analysis, but at the same time, as all absolute indicators, they do not allow to observe the intensity of the phenomenon. For this purpose one needs other indicators.

For example, to characterize investment activity of the residents, it is sensible to use a "propensity of private sector residents to capital export" indicator, defined as a fraction with numerator "export of capital by residents of private sector" and denominator "raised foreign resources". The "raised foreign resources" means the maximum volume of resources which could be converted into foreign assets within the international transactions performed for the reporting period.

The indicator determined by this formula has a clear economic meaning: it defines the real share of capital outflow in the total volume which could have been potentially exported within the examined period.

To achieve comparability of the indicator it is necessary to reduce its denominator ("raised foreign resources") to a sum of "obligatory" transactions, the implementation of which within the reporting period is predefined either by previous events (interest payments on raised funds, external debt repayment), or some other circumstances (wage payment to foreign employees, etc.).

One more correction is also required: in case of a decrease/increase of the international investment position of monetary authorities within the reporting period, the volume of "raised foreign resources" should be decreased/increased respectively. In this context, reserve and non-reserve foreign assets of monetary authorities are treated as a "stock" of foreign resources, available to private sector via the domestic foreign exchange market.

The fixed definition of "raised foreign resources" in the terminology of the balance of payments assumes the following own structure:

- export of goods and services;
- balance of the private sector's investment income;
- compensation of employees balance;
- balance of current and capital transfers of the private sector;
- balance of the private sector's financial liabilities;
- change in the international investment position of monetary authorities.

In addition to the indicator mentioned above, it would be rational to include two more indicators in the statistical practice:

- “propensity of the private sector to import”;
- “propensity of the private sector to invest in domestic assets”.

The first one is calculated as the ratio of “import of goods and services” to “raised foreign resources”, the second is calculated as the ratio of “balance of payments for the private sector” to the same denominator.

It is clear, that the sum of these three indicators mentioned above equals “one” or 100%, depending on the form of presentation. Thus, a change in one of the indicators leads to an adequate change in at least one of the two other.

Calculations based on the data from the balance of payments of Russia for the period of 1994-2003 are presented in the full version of the contributed paper.

## Linking Financial Accounts with Balance of Payments, portfolio investment and external debt positions: the case of the Czech Republic

*Rudolf Olsovsky (Czech National Bank)*

### *1. Financial accounts*

The legal framework for the provision of financial accounts in the EU Member states is set out in Council Regulation 2223/96. This regulation requires all Member States (excluding those with derogation), to submit financial accounts annually as from 2000. Member states with derogation will provide national financial accounts within the ESA framework subject to agreed time delays, with a complete set of annual financial accounts required from 2005 onwards.

### *2. Financial Accounts Statistics in the Czech Republic*

The Czech Statistical Office (CSO) is responsible for the compilation of financial accounts on an annual basis. The financial accounts are produced as an integral part of the yearly compilation cycle of the National Accounts. In 2003, agreement was reached between the Czech Statistical Office and the Czech National Bank to change the system of compilation and presentation of the financial accounts to cover both Eurostat (annual data) and ECB (quarterly data) requirements by the end of 2005 at the latest.

### *3. The coverage of external sector statistics for the Financial Accounts of the Czech Republic*

The quarterly data from the International Investment Position (IIP) and the Balance of Payments of the Czech Republic are made available for the purposes of the Financial Accounts Statistics. The Czech National Bank has decided to follow the ECB recommendation to use the IIP data for the rest of the world statistics in the financial accounts. A review of the bop statistics, portfolio investment statistics, external debt statistics and their connection with the financial accounts of the Czech Republic will be presented in this paper.

## Monetisation and de-monetisation of gold: implications for the South African Balance of Payments

*Hlabi Morudu (South African Reserve Bank)*

The treatment of gold exports in South Africa was different from the specification of the fifth edition of the Balance of Payments Manual. The monetisation and de-monetisation of gold, as specified in the fifth edition, bears several implications for South Africa's accounts. This paper seeks to outline the main impact on the South African balance of payments data since 1980, and advance some tentative suggestions for interpreting South Africa's balance of payments.

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**PANEL DISCUSSION**

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**Panel Discussion on Central Bank issues regarding  
National and Financial Accounts****Formulating a strategic plan for financial data:  
a perspective from Canada**

*Brian O'Reilly and Greg Haymes (Bank of Canada)*

Financial data are key to understanding issues important to ensuring the stability of the financial system and monetary policy. Given the growing importance of financial issues - such as accelerating globalization, financial stability and financial innovation - facing many countries around the world, often simultaneously, the need to do analysis and research using these data will likely continue to be a growth industry. At the same time, budget constraints and good governance practices will require central banks to be clear about their strategic priorities and the paths followed in achieving them.

The paper discusses the Bank of Canada's experience in designing a strategic plan for financial data to be implemented over the medium-term (2006-2008). It documents the steps taken to understand and provide solutions to questions surrounding the data: What are current or potential data gaps? What are best practices at other central banks? What is the best way to fill these gaps that reconciles the differing needs of staff working in the various functional areas of the Bank? In answering these questions, the paper investigates the cost parameters of compiling/obtaining data via a variety of sources and outlines some tentative recommendations for discussion before the plan is finalized.

Preliminary results indicate that the recommended path should be evolutionary rather than revolutionary and involve a mix of internal and external data providers. In general, when working with data providers, staff should have access to funds for obtaining greater service in data provision, including seed and partnership money. As part of this process, there would be a regular review of the contribution of different databases to the work of the Bank with an aggressive culling of lower value-added sources. Representations would be made to providers of higher value-added sources to encourage them to fill in gaps in Canadian data. Working closely with established partners would continue to be an important part of this plan.