IRVING FISHER COMMITTEE ON CENTRAL-BANK STATISTICS
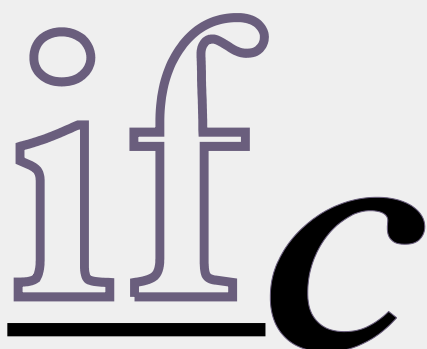
ifc Bulletin

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The Irving Fisher Committee is part
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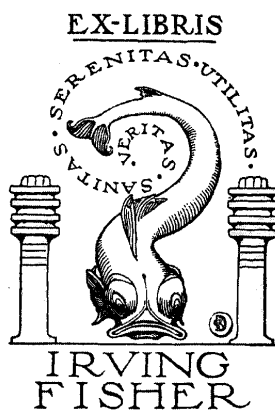# ifc Bulletin

No 17 – February 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 54th 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 55th 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.

Short Report of the IFC Administrative Meeting, Berlin, 15 August 2003

The President of the Irving Fisher Committee, Almut Steger, opened the Administrative Meeting at 11:15.

Agenda

The agenda for the meeting, which had been distributed in advance, was adopted.

Report on the developments in the past two years

The Secretary, Rudi Acx, gave a short account of the major activities and events since the 53rd ISI Session (Seoul, 2001):
- the organisation of the IFC Conference held in Basel in August 2002.
  This conference, hosted by the Bank for International Settlements (BIS) and attended by more than 160 statisticians representing 73 countries and a number of international organisations, marked the beginning of a new tradition in which the IFC could schedule an "independent" event, at the BIS or elsewhere, in the years between the biennial ISI Sessions.
- the preparation of the contribution of the IFC to the ISI Session in Berlin.
  The IFC participates with nearly 40 papers, presented in two Invited Papers Meetings and three Contributed Papers Meetings.
- the preparation of the application of the IFC for Section status within the ISI (see below).

The future role of the IFC

The President recalled that the IFC, at its Administrative Meeting in Seoul (2001), had supported the proposal of Marius van Nieuwkerk to apply for the status of an independent Section within the ISI. A first demand for Section status was introduced in July 2002. The ISI Executive Committee formulated a number of remarks at its London meeting in September 2002. These formed the trigger for further reflection on the areas of interest and on the organisation of the Committee, as well as on financial issues, which resulted in a new version of the application in January 2003. The Executive Body of the IFC formulated a more elaborated mission statement in which the remit of the Committee was broadened to all sorts of financial statistics and to introduce an active policy to extend its membership beyond central banks. Possibilities for close co-operation with existing ISI Sections were identified. Representatives of the IFC Executive Body were invited to the Voorburg meeting of the ISI Executive Committee in March 2003 to present the objectives of the IFC within the ISI. The Executive Committee gave unanimously a positive recommendation to the ISI Council. Following the meeting with the ISI Executive Committee, a slightly modified application letter was addressed to the ISI Council in July 2003.

Almut Steger noted that, at a meeting of the Outgoing ISI Executive Council earlier that day, a delegation of the IFC Executive Body had been offered the opportunity to amplify on the application. On that occasion, it became apparent that part of the members of the ISI Council was concerned about possible overlaps between the areas of interest of the IFC and the IAOS or were not

fully convinced that the IFC was organisationally already in a position to assume Section status. In this light, the Council decided to propose to the ISI General Assembly to accord IFC the desired status only on a provisional basis up to the 55th ISI Session (Sydney, April 2005), after which transitional period a final decision should be taken. In the meantime, the IFC should prove its ability to broaden its field of interest to financial statistics beyond those which were presently understood as central-bank statistics, to lessen its dependence on central bank institutional membership, to attract a convincing number of individual members, to continue to reach world-wide representation and, depending on the subjects treated, to co-operate with other ISI Sections and Committees. Furthermore, the IFC was expected to prepare statutes, to be approved by the ISI.

The members of the Executive Body who had attended the ISI Council meeting thought that this outcome was the best that could be expected and were confident that the General Assembly, on 18 August, would take a decision in accordance with the proposal of the Council.

Almut Steger emphasised that irrespective of the final outcome of the application procedure the IFC would aim at formally extending its field of action to other kinds of financial statistics. She noted that, in order to give expression to the new status and the broadened activities, the Committee's name could be changed into "Irving Fisher Society for Monetary and Financial Statistics (IFS)".

Answering questions from the floor, Almut Steger confirmed that individual membership would be opened up for statisticians from central banks as well as for statisticians with a non-central bank background, and that the assumption of new competencies would be a step-by-step approach. Marius van Nieuwkerk noted that for a number of countries the extension of the IFC's area of interest to activities like supervision would not represent a radical change as their central banks had already responsibilities in those fields.

Some participants saw both advantages and disadvantages in a broadening of scope. It was observed that opening up the IFC to other professional groups and tackling issues that might be of interest to non-central bankers could be a promising strategy, provided that the Committee's identity was safeguarded to such an extent that central bankers would keep a keen interest in it; central banks should keep a firm position as institutional members.

Almut Steger noted that the IFC Executive Body had been urged by the ISI to prepare draft statutes prior to the Berlin ISI Session. In fact a first draft had been presented to the ISI Permanent Office, and it was intended to distribute it at the Administrative Meeting. However, in the light of the discussion at the ISI Council meeting, it seemed more appropriate to profit first from suggestions and remarks put forward at the Administrative Meeting and taking into consideration the special remarks of the Permanent Office. This feedback would be used to draft a new version of the statutes, on which the approval of the institutional members would be sought by means of a written procedure.

Almut Steger noted that the first draft of the statutes contained provisions about membership fees. The institution of fees would be unavoidable given the fact that Sections were expected to pay contributions to the ISI.

Another important item in the draft statutes concerned the characteristics of the Committee's meetings. In order to serve the IFC's aim to extend its field of action, the following pattern was envisaged:
• Bi-annual meetings in the context of the ISI Sessions, which would be more science-oriented and conducted in co-operation with other ISI Sections or Committees.
• "In-between meetings", which would be more pro-active concerning the improvement of user-oriented statistics to the benefit of the central-banking community.

Almut Steger explained that the "in-between meetings" would not necessarily be fully-fledged conferences on a broad spectre of topics as had been the case in 2002. In future, they could have the character of work shops or seminars, possibly in co-operation with other ISI Sections. Paul van den Bergh added that it could be contemplated to create ad-hoc groups on some topics.

Almut Steger noted that the Executive Body saw an advantage in establishing special programme committees for each event, which would offer a better opportunity to make use of the most experienced persons to treat the various subjects.

As regards the tasks of the organs of the Committee and the election procedure of its officers, Almut Steger explained that the draft statutes had followed the example of other ISI Sections.

Mandate for an action plan

The President sought and obtained the support of the Administrative Meeting for the finalisation of the discussions with the ISI and the drafting of statutes following the suggested lines.

Answering questions, Almut Steger confirmed that the fee for individual members would be considerably lower than that for institutional members, though no concrete ideas had as yet been developed on the exact amounts.

Conferences in the next years

Basel 2004

The President noted that it seemed to be possible to hold a second "in-between meeting" in Basel next year thanks to the willingness of the BIS to conduct it again on their premises. Possible topics like "Statistical impacts of the Basel II-accord", "Accounting systems and their impact on statistics" or "Management information systems and statistics" were still on the agenda. There might be an additional impact from a discussion started up by David Dodge, Governor of the Central Bank of Canada, on the improvement and international comparability of statistics for monetary and economic policy purposes, which might result in some new ideas. Any further proposals from the members would be most welcome.

Several additional topics were proposed:
"The role of central banks in the field of statistics",
"New ways of reaching users of statistics",
"Central bank statistics as a service to financial markets",
"A more scientific approach to the implementation of statistical methods",
"ICT in central bank statistics".

Responding to a question by Paul van den Bergh about the most preferred way of organising the "in-between meetings", some members remarked that they would prefer fewer presentation and more discussion, and that they expected that the meetings might benefit from users being invited to expound their needs.

Sydney 2005

The President noted that, following suggestions made by members, the Executive Body had provisionally proposed the following subjects:
"The development of quarterly accounts by institutional sector",
"Optimal methods for data improvement in financial statistics",
"Financial soundness indicators".

In the newly formed ISI General Topics Committee for the 55th ISI Session discussions on the programme were still in progress. One of the ideas being considered was the introduction of "theme days".
The President urged the members to propose additional topics before 18 August.

Furthermore, the meeting was informed about a proposal received from Nick Fisher, chairman of the Committee on Statistics for Business and Industry, to organise a satellite meeting of his committee jointly with the IFC directly after the Sydney Session. The Executive Body had positively reacted to this proposal.

Organisational matters

The President recalled that, following the decision of the last Administrative Meeting in Basel, the term of the acting Chairperson would end in Berlin. Therefore, the Executive Body proposed as candidate for this office: Paul van den Bergh, Head of Information, Statistics and Administration, Monetary and Economic Department of the BIS.
This nomination was carried unanimously.

Paul van den Bergh said that he hoped to meet the expectations. He thanked Almut Steger for the state in which she had left the Committee at the moment of stepping down and especially for her preparations to acquire Section status. He also thanked the Executive Body for its efforts to extend the role of the IFC. He saw three main challenges in the period ahead:

- improving the Committee's internal organisation, getting the statutes adopted, adapting the composition of the Programme Committee to the subjects treated and establishing an Editorial Board responsible for the content of the IFC Bulletin;
- settling the IFC status within the ISI framework and, at the same time, taking steps to meet the requirements of central bankers as voiced by Governor Dodge;
- preparing the IFC Conference in Basel and the contribution of the IFC to the ISI Session in Sydney.

He emphasised that the success of the IFC depended primarily on the contributions of its members.

The President proposed to postpone any other elections of officers until the IFC had adopted its statutes.

Any other business

There was no other business to be discussed.

The President closed the meeting at 13:00.

New members of the IFC

In recent months the central banks of Korea and Israel have joined the Irving Fisher Committee.

The response of the ISI General Assembly to the IFC's application for Section status

On 18 August 2003, the ISI General Assembly defined its position with respect to the "Proposal to grant transitional Sector Status to the Irving Fisher Society on Monetary and Financial Statistics".

The ISI President introduced this item by giving an account of the preceding application procedure and of the discussion on this matter in the ISI Council. The Council had recognised some danger of overlap with existing Sections but had also discovered some elements of strength in the IFC's request. It had agreed on proposing to the General Assembly to accord Section status to the IFC on a provisional basis for the transitional period up to the 55th ISI Session in Sydney (April 2005), which would give the IFC an opportunity to prove its capability to fulfil a number of conditions, including the extension of its area of interest to all kinds of financial statistics, the introduction of individual membership in addition to the present institutional membership and the attraction of a convincing number of individual members with a non-central bank background.

Almut Steger, as President of the IFC, addressed the General Assembly, summarizing the considerations that had led to the application and emphasizing that the IFC was willing to co-operate actively with the ISI and its existing Sections and Committees, and to fulfil the specified conditions.

From the floor, several ISI members raised objections, which were not primarily directed at the IFC as a candidate for Section status, but which rather arose out of a feeling of uncertainty about the general strategy of the ISI with respect to the admission of new Sections. There were also some doubts expressed about the effects of creating more Sections on organisational matters like the filling-in of topics in the general conference programme of the ISI and the sharing of existing conference capacity. Furthermore, there should be guarantees that new Sections were neutral in politics and not associated with business interests.

On the other hand, a number of speakers welcomed the idea that a group of enthusiastic statisticians working on a statistical area of increasing relevance would strengthen the overall position of the ISI. Some members emphasized that, though in theory there might be reasons to expect overlaps with the activities of existing Sections, there were no indications that serious overlaps would occur in practice.

A vote was taken, which resulted in a clear majority in favour of adoption of the proposal.

The follow-up
of the IFC's application for
Section status within the ISI

In the months following "Berlin", the IFC Executive Body has discussed various scenarios for a credible adaptation of the IFC to the terms and conditions specified by the ISI governing bodies in response to the Committee's application for Section status. The Executive Body has concluded that it is not yet in a position to give the ISI Executive a definitive clue on how the IFC intends to proceed, and it has decided to embark on an extensive consultation round with the IFC members (i.e. the central banks) prior to taking any further steps, such as changing the statutes. The Chair and Secretariat will review the list of members and draft a questionnaire to seek further feedback from the membership on specific proposals. This survey could be carried out in the spring of 2004 and would also allow the list of members to be brought up to date.

Furthermore, it has been decided that, on the basis of the feedback of the membership, a high-level meeting of the Heads of (Research and) Statistics of central banks in G10 countries and other systemically important economies should explore options for more active central statistical cooperation through the IFC. This meeting will be held in the margin of the IFC conference which is being organised at the BIS on 9-10 September 2004.

After these consultations, the Executive Body of the IFC will be in a better position to discuss how the requirements for becoming a specialised ISI Section can be met. Some progress on this should hopefully have been made prior to the Sydney 2005 event.The Executive Body has agreed that the Chair would draft a letter to the ISI Executive indicating the need for further internal consultation on the proposals by the ISI. The Chair has already informally mentioned the need for internal consultation to the ISI Permanent Office, which has indicated that this would be perfectly acceptable and has understood that this might take some time.

Meanwhile, the Executive Body remains fully committed to the project of becoming an autonomous part of the ISI. It is well aware of the positive interest in this project that the IFC Administrative Meeting repeatedly manifested, most recently in Berlin. The Chair and Secretariat will start contacting the relevant other sections and committees to explore areas for cooperation and to invite representatives from these groups to the 2004 independent meeting. Similarly, representatives of the ISI Executive and the ISI Permanent Office will be invited to Basel.

Various IFC members have already confirmed that they see significant value in a more active cooperation of the IFC with other sections and committees of the ISI, which is in line with ISI's stated objective to stimulate discussions across statistical experts from different domains. The Executive Body is confident that the IFC will be able to continue to operate under the ISI umbrella and to make an active contribution to ISI activities in the future. At the same time, the Executive Body sees as its responsibility to ensure that it can consolidate the achievements that the IFC, as a relatively young organisation, has made in establishing ongoing cooperation amongst its members.

IFC Conference in Basel, 2004

Themes and possible topics for papers
for the conference of the
Irving Fisher Committee on Central-Bank Statistics

Thursday–Friday, 9–10 September 2004

In August 2002 the Bank for International Settlements (BIS) sponsored a conference of the Irving Fisher Committee on Central-Bank Statistics on the general theme of "Challenges to Central Bank Statistical Activities". The conference was attended by more than 160 participants from about 80 central banks. More than 50 papers were presented in the various plenary sessions and workshops of the 2002 conference. The papers, as well as the discussions at the meeting, helped to identify a number of topics, in the domains of monetary as well as financial stability, that might merit further discussions amongst central bank statistical experts. Some of these will be on the agenda of the forthcoming conference of the IFC, which the BIS will be pleased to host in Basel on 9-10th September 2004.

List of selected themes for the conference and possible topics for papers

1. Measuring prices

Possible topics:

> CPI and PPI methodology, including international harmonisation;
> measurement bias in CPI;
> indices for financial services prices (banking, insurance);
> measures of asset prices, including property prices;
> measures of headline *vs* core inflation;
> use of different statistical indices, incl. hedonic and chain indices.

2. Output, capacity and productivity

Possible topics:

> GDP methodology, including implementation of SNA 93;
> measuring key components of GDP data;
> size and impact of revisions in GDP;
> monthly and flash estimates of GDP;
> identifying peaks and troughs in business cycles;
> capacity utilisation and similar indicators;
> capital stock measures;
> estimates of output gaps;
> productivity methodology, including international harmonisation;
> labour *vs* multifactor productivity;
> international comparison of productivity (levels and growth);
> productivity gains from use of ICT;
> sectoral productivity measures (particularly services sector).

3. Financial accounts (flow of funds) data from a monetary and financial stability perspective

Possible topics:

financial accounts methodology, including international harmonisation;
measures of financial positions of household and non-financial corporate sector (debt and debt servicing levels, leverage ratios, profits);
linking financial accounts with economic activity (national accounts);
linking financial accounts with BOP, portfolio investment and external debt positions;
impact of expected changes in international accounting practices on financial accounts.

On the basis of the response to the invitation to the meeting and the call for papers, it could be determined which format particular parts of the meeting would take (e.g. plenary sessions, panel discussions or workshops). As there are a number of issues on the agenda that might interest other ISI Sections and Committees, particularly the International Association for Official Statistics (IAOS), efforts will be made to actively involve their representatives at the meeting in the discussions.

IFC Conference, Basel, 9-10 September 2004
Registration of Interest

Name: ....

Title / Function: ....

Organisation / Institute / Company:

....

Address: ....
....
....
....
....

Telephone: ....

Fax: ....

E-mail: ....

☐   Interested in participating in the conference

     Main domain of interest: ....

☐   Interested in presenting a paper

     Topic of paper ....

☐   Interested in giving an oral presentation

Please indicate how you would like to receive more detailed information on the Conference:

     ☐   By e-mail   ☐   By fax

Please return this form to the Contact address:

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Participation of the IFC in ISI Session, Sydney, 2005

There has been steady progress in the preparation for the 55th ISI Session, scheduled for April 2005 in Sydney. Finally, the ISI has retained four Invited Paper Meetings (IPMs) proposed by the IFC:

• Cost, Quality and Relevance of Financial Statistics (chair to be determined),
• Accounting Standards and their Impact on Financial Statistics (chair to be determined);
• Financial Soundness Indicators (chair: Sean Craig, IMF);
• The Development of National Quarterly Accounts by Institutional Sector
  (chair: Richard Walton, Bank of England).

The first three IPMs would be part of the special Theme Day on Finance and Statistics.

The topic of Optimal Methods for Data Quality Improvements in Financial Statistics (chair: Luigi Federico Signorini, Bank of Italy) has been retained as Contributed Paper Meeting.

The Chair will contact the chairs of the Organising and General Topics Committee as well as the Reserve Bank of Australia in order to identify any topics the IFC could help to sponsor. One possibility would be for the Reserve Bank to propose an additional CPM topic that might be of particular interest to them. 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 use of hedonic methods
for quality-adjusted prices

John Astin

Papers for discussion:

1) **D. Fenwick and A. Ball: "Conceptual and measurement issues relating to hedonic methods of quality adjustment of prices: the UK experience and some practical proposals"** [1]
2) **G. Kenny and H. Ahnert: "Quality adjustment of European price data: what role for hedonics?"** [2]
3) **P. Konijn, D. Moch and J. Dalen: "Comparison of hedonic functions for PCs across EU countries"** [3]
4) **O.W. Winkler: "A Different approach to changes in product quality and price"** [4]

First let me apologise for not being able to be with you in Berlin today. I am most grateful for Bart Meganck's offer to read my discussant notes on my behalf. Naturally, it is I who remains responsible for what he reads – always assuming he reads it accurately!

We have in front of us four contrasting and complementary papers. One written by data producers; one by researchers; one by users and a fourth from an academic looking at these quality issues from a wider standpoint. So I am sure there will be a lively discussion, and, I hope, one which will edge us all just a little further forward in this continually tricky area of CPI construction. I say CPI because that is what all four papers concentrate on, but of course issues of quality change in price indices affect other series such as producer price indices. There should be cross-fertilisation between the experts of different price indices – especially CPIs and PPIs – and I am pleased to see that this is beginning to happen.

Let me begin first at the coalface: the producers' paper of *Fenwick and Ball*. I understand that the paper was originally submitted at a time when the research was still in progress, and that the authors may want to modify some of their views.

I thought there were some very pertinent issues raised in this paper. I have to admit that I have never been a convinced hedonist, having seen too many papers that describe the results of hedonic regressions which seem to have sometimes been applied too hastily to data sets which just happen to be available: good data in this field are not as common as some may believe. The report published by the Schultze Panel, which is mentioned in the paper, was slightly critical of the focus of the BLS's use of hedonics, claiming that "the work may not always have centred on the most productive expenditure items". It felt that "the best candidates for hedonic analysis are categories of

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goods for which quality change is frequent but incremental, and for which the characteristic changes are easy to measure. For example, PCs are an obvious candidate, whilst cars and clothes are seen as problematical".

The Fenwick and Ball paper sensibly heeds these warnings, and rather than presenting pages of tables of hedonic results, provides some specific cautions and queries resulting from their hedonics work. For example, they raise the important issue of market conditions. In fact most markets are highly imperfect, even when the conditions for perfection are almost achievable. For instance, consumers could make highly rational decisions in the PC market using the vast amount of data available in computer magazines and websites. But this takes time and a certain degree of ingenuity which the typical consumer probably doesn't have. Even so, as the Schultze Panel said, the PC market is relatively perfect and is indeed a suitable case for hedonics treatment. But Fenwick and Ball rightly caution against using hedonics in markets that don't appear to be very competitive.

One increasing problem is that services have already overtaken goods as consumer items in many advanced economies. But hedonics are particularly difficult to apply in services because of the lack of quantifiable data. I think price statisticians should try to tackle this issue head-on. To take one example alone: the budget airline industry, at least in the UK, is now taking a major share of the airline market, and is ultra-competitive. How do you quality-adjust Ryanair's ticket prices for the complete absence of, say, refreshments, – and, many would say, the complete absence of any level of customer service at all? I think the answer is not to run away from the problem but to consider ways of getting the necessary data, such as from consumer panels.

Konijn and his colleagues working on the European Hedonic Centre project have reported on results obtained in the field of – guess what? – PCs. I have not, of course, seen the latest version of the paper which is due to be available at this conference. I am not going to go into detailed technical comment on these results – the authors are themselves far more experienced than I am in these matters. But what is especially interesting in this research is that it combines data from several different countries – or perhaps I should say markets. A fundamental issue is whether it is possible to combine results from several markets into a single hedonic function. The paper suggests, quite reasonably, that if PC markets and consumer preferences are similar across countries, then the hedonic functions should also be similar. The first results of their analysis lends some – but only some – support to this thesis, although a health warning should be attached to the fact that only three countries were covered, and moreover that they are the largest and probably the most computer-sophisticated markets in Europe. Even so, the authors point to some significant differences in both PC markets and apparent consumer preferences in the three countries.

This is pioneering work, and it should be continued. What would be an interesting next step would be to carry out similar hedonic studies in the same three countries, but in a different product sector. Maybe the familiar refrigerator market would be a relatively straightforward candidate. The aim would be to try and decompose the many dimensions in this research, so as, for example, to show that the problems of combining country data into a single hedonic function are due more (or maybe less) to differences in markets and consumer preferences than to differences in the data chosen or the hedonic techniques used. Success in this research could have long-term benefits in the potential for quality-adjusting the HICPs at an EU-wide level, at least as long as the basic data are provided separately by each member state.

The ECB authors, *Kenny and Ahnert*, are to be congratulated on providing us with an excellent exposition of the QA problem in general, how it is currently dealt with in Europe, and what the future role may be for hedonics. There is a useful annex for easy reference to the various methods used for quality adjustment. This will be familiar stuff to all my former colleagues in the Eurostat HICP Working Group, but may be less familiar to others.

It is good to note that the ECB lends its enthusiastic support to the continued improvement of QA methods, while they adopt a more careful and qualified support for hedonics. As the main client for the HICP, they are aware of the need for openness in methods, and sound a note of caution against using any CPI methods that lack transparency. My own view is that it would be wrong for official price statisticians to avoid using certain techniques simply because they are difficult to explain. The main priority is to have CPIs of top quality and if this involves the use of technically abstruse methods, the task of the statistician is to find explanations of these methods for the layman which are simple but not misleading. Other professionals manage this: why shouldn't we?

I had expected to see a little more in this paper on the economics of quality adjustment, especially on the economic implications for central banks of adjusting CPIs for quality change. I know Henning is aware of my concerns here. To put it very simply, though I obviously accept the need for QA in the limited sphere of a Laspeyres-type CPI, I am less sure of its validity in the context of monetary policy. PCs are the main example of a product where, over the years, the nominal price

has tended to remain fairly static or fall only slowly, whereas the quality-adjusted price has plummeted. With cars, presumably maximum speed is a key hedonic variable. So a car capable of 400 kph would have its price quality-adjusted down, despite the fact that it could never be driven at such a speed. One can find similar examples in the PC market: how many consumers use more than 10% of the possible facilities in Word or Excel? However, in all these cases consumers are still paying the non-quality-adjusted prices and this is the cash which circulates in the economy. Isn't it cash which the bankers are concerned with? Isn't it cash which is relevant to interest rates? I would like to hear some discussion on this – and hopefully to be proved wrong!

Finally I come to the *Winkler* paper. This challenges the whole basis of the traditional approach to CPI construction and provides a welcome respite from the usual type of CPI paper which takes most things for granted. Winkler takes nothing for granted. I find much to agree with, but, I'm afraid, quite a lot to disagree with. I have only a short time left for comment so I will be brief. First, I much appreciated his opening comments about Laspeyres. I have often remarked that the Laspeyres index would not have been invented if the great man himself had been born 100 years later. In his day, indeed, markets were far simpler and less dynamic than today. But if he would not have proposed the index which bears his name, what sort of index would he have proposed? I just don't think it would have been the PLI which Winkler suggests. PLIs are in fact currently produced in the field of purchasing power parities (PPPs), where they are necessary for comparing price levels at various degrees of aggregation between countries. They can be used – with care – for such comparisons, but it is a different matter entirely to use them to measure temporal price change. I think at root it all comes down to the question of aggregation. PLIs – which seem to be similar to Unit Value Indices – could, I believe, be used (and I think they are in some countries) at a basic level where there is a high degree of homogeneity and stability of products. It does indeed get round some of the problems of QA. But it cannot be right to assume away all quality change: Winkler is breaking his own rule that "price statistics should deal with what actually is".

But I hope someone will write a critique of this paper, because at the very least the two papers would serve as a primer in the fundamental issues of price index construction.

John Astin

Use of statistics in developing monetary policy

Part I

Alfred De Marco (Central Bank of Malta)

Papers for discussion:

1) **Phousnith Khay, "Development and use of statistics for monetary policy in Cambodia"** [1]
2) **Shelquim Cani and Gramos Kolasi, "The role of statistics in the conduct of monetary policy in Albania"** [2]

Introduction

As discussant for this part of the meeting I would like to commence my contribution by congratulating the authors of the two papers for their candid and well elucidated views on the state of statistical collection and compilation in their countries particularly where this applies to monetary policy.

Both countries have gradually emerged from centrally planned economic systems which were characterised by the limited availability of meaningful statistical information. Considering these circumstances both countries have made tremendous progress in developing their statistical structures particularly in the field of financial statistics. Of course much remains to be done to broaden and enhance the statistical data base that will enable the authorities in these countries to assess more accurately economic conditions before implementing the appropriate macroeconomic policies.

I will consider each paper separately and focus on some of the monetary policy related issues that have been highlighted in the two papers. In discussing these issues I will make some reference to the situation in my country, Malta, which over the last decade has carried out a number of reforms in the statistical field to improve the quality of macroeconomic data and strengthen the credibility of the national agencies involved in the statistical compilation process.

I will commence my remarks with reference to the paper presented by *Phousnith Khay* of the National Bank of Cambodia ("Development and use of statistics for monetary policy in Cambodia"). The paper first describes the *monetary policy framework,* which is formulated and implemented in the context of the IMF supported programme. It is evident, from this description, that the ability of the National Bank to pursue an effective monetary policy is severely constrained by the high level of currency substitution and the absence of market driven interest rates. The paper says that due to the unavailability of information on the amount of foreign currencies in circulation it is difficult to estimate correctly such indicators as the money multiplier and the velocity of money. Similarly it is difficult to arrive at an indicative short term interest rate in the absence of money market instruments, particularly treasury bills. In this regard therefore it is encouraging to note that under the government's Vision and Financial Sector Development Plan steps will be taken to establish a sound market based banking system and money and capital markets. These should certainly inspire more confidence in the domestic currency and the emergence of a market driven interest rate. This will then facilitate the National Bank's efforts to pursue a market oriented monetary policy.

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1   *IFC Bulletin No, 16, July 2003, pp. 31-34.*
2   *IFC Bulletin No, 16, July 2003, pp. 35-37.*

With reference to my country, Malta, I would like to say that until the late eighties the financial system was rigidly controlled. It was only after a newly elected government de-nationalised the commercial banks, removed controls on interest rates and developed a capital and money market that the Central Bank was able to formulate and implement a market-oriented monetary policy. Consequently, despite the small size of the financial market the Central Bank is today able to carry out open market operations in line with its monetary policy objectives.

The paper then focuses in detail on the *development of statistics for monetary policy.* It stresses the important role played by the National Bank in collecting and compiling monetary and balance of payments statistics. This is a function undertaken by many central banks including my own. However, the paper also highlights the significant steps that are also being taken to strengthen co-ordination and co-operation among the relevant agencies that produce economic and financial statistics. This is an important point since decisions on monetary policy can only be made effective if the policy makers have complete information on developments in the economy and the financial system. In many instances a central bank, which has to take these decisions, has to rely on other essential macroeconomic indicators, such as GDP data, producer and consumer price movements and fiscal data, which it does not collect or compile directly itself. It is therefore necessary that the central bank and other statistical agencies within the country, particularly national statistical offices, co-operate actively and provide each other with statistical information.

The paper indicates that the collection of monetary statistics, which are key indicators for monetary policy, has progressed efficiently and the National Bank appears to enjoy the full co-operation of the depository corporations. This is another essential pre-requisite for developing the statistical infrastructure for monetary policy. The banking system provides almost all the input on monetary aggregates and their counterparts. In my country it is the banking institutions which not only provide timely and regular information on the monetary sector but also on the balance of payments (on a cash basis). In the case of the National Bank of Cambodia it is therefore important that continuous contacts are maintained with the depository corporations to ensure their effective co-operation. In this regard the National Bank could reciprocate by taking the initiative to organise seminars and training courses for the staff of the corporations involved in the collection of the raw data, in order to enhance their knowledge and understanding of the reporting requirements of the National Bank.

In highlighting the limited potential of monetary policy in the current Cambodian environment the paper observes that the *use of statistics for monetary policy* is likewise limited in scope. Much attention in fact is given to the exchange rate as a policy instrument since this has important implications for inflation. This notwithstanding it appears that on the basis of the regularly available monetary indicators the authorities are able to put in place a fairly accurate picture of developments in the economy. In fact the paper says that in recent years the inflation rate has been low, implying that the National Bank has achieved its main policy objective, and that GDP grew at the projected rate. It is only with regard to broad money that targets have not been reached but in the highly dollarised Cambodian economy, this can be expected given the unreliability of measures related to the velocity of money.

The significant problem that dollarisation poses is clearly emphasised in the last part of the paper. Since this is a matter of a lack of confidence in the domestic currency the government of Cambodia, quite rightly, adopts a gradual approach to the *de-dollarisation* of the economy. In this regard the recommended initiatives, that is, maintenance of macroeconomic stability and the introduction of attractive domestic investment products will surely contribute to a reversal of this trend.

Finally, as I referred to earlier, the government's strategy for developing the financial sector will surely lead to long term benefits. In this regard the National Bank, in its role as the banking supervisory authority, has a vital role to play to ensure that the government's plans to implement institutional reforms in the financial sector are accompanied by the establishment of a sound and stable banking system.

The paper presented by *Shelquim Cani and Gramos Kolasi* of the National Bank of Albania ("The role of statistics in the conduct of monetary policy in Albania") gives an interesting account of the development of statistical output since the early nineties when the country abandoned a centrally planned economic system and gradually transformed itself into a market economy. The progress achieved in first constructing, and then upgrading, its statistical system over the years was reflected in Albania's decision to accept the obligations of membership in the Fund's GDDS.

Albania's monetary policy has also continued to evolve over the years. Price stability was immediately recognised as the ultimate goal of the National Bank's monetary policy and the implementation of such a policy developed from one based on direct controls to a more market oriented system. The monetary policy regime is now being refined further with the adoption of an inflation targeting strategy that has inflation as both its ultimate and intermediate objective.

While acknowledging the desire of the National Bank to continue to evolve and upgrade its approach to monetary policy I would venture to ask, at this juncture, whether the adoption of this new strategy by the National Bank may be premature given (i) the still early stage of development of the country and (ii) the fact that an important pre-requisite for the successful implementation of this more sophisticated approach is a steady flow of reliable economic and financial data. In fact the paper clearly highlights the weakness of some of the statistical output. Thus, while it appears that financial statistics and consumer price data are timely and accurate, statistics on real economy indicators, such as the national accounts, GDP growth and unemployment, are generally unreliable. There are also long lags in the publication of data on the fiscal accounts and the balance of payments which, in addition, are only published on a quarterly basis.

To a large extent the paper acknowledges that an inflation targeting regime can only be implemented effectively if certain deficiencies in the statistical infrastructure are addressed. In this regard it mentions a list of work priorities which should be undertaken to establish the appropriate environment for the implementation of an inflation targeting strategy. I will elaborate briefly on some of these priorities:

1. The first one focuses on the need for a clearly recognised policy making body which should be recognised as the authority on statistics. This certainly would be a positive step forward. Here I would like to refer to my country's experience in this regard. In 2000 Malta reformed its statistics law and established the Malta Statistics Authority as an independent institution responsible for all matters related to the collection, compilation and publication of official statistics. The Authority not only ensures that official statistics are produced in accordance with international standards but is also ultimately responsible for all matters related to methodologies. It therefore monitors all statistical agencies in Malta, where statistical issues are concerned, including the Central Bank and the National Statistics Office. There is no doubt in Malta that the setting up of this Authority has inspired more public confidence in the reliability of official statistics and has thus encouraged greater use of such information. The Authority is run by a board which includes representatives of bodies and organisations that have an interest in statistics. These include trade unions, organisations representing private enterprise, the university, the central bank and the financial community.

2. This brings me to the second priority point mentioned in the paper, which is the lack of private sector co-operation, in Albania, in providing raw data to the statistical agencies because of public distrust in the agencies and a suspicion that the information will be used for other purposes. This is typical of many countries especially those in Southern Europe and the Mediterranean! As I mentioned above in the Malta case the appointment of an independent authority with representatives of the private sector sitting on the Board has, to some extent, assured private sector providers of statistical information that the data submitted is treated with the utmost confidence and secrecy. While the legislation itself ensures co-operation in a forceful way, that is, through the imposition of fines and penalties, the attitude of private sector reporting agents in recent years has been generally positive and co-operative. This has reflected a new found confidence in the official statistical agency following its change of status. In the Albanian context, another possible way of addressing this lack of public trust in the statistical agencies could be to assign a greater role, in the collection and compilation of statistics, to the National Bank of Albania, which presumably enjoys public esteem in matters related to finance and the economy. There are many countries where central banks are substantially involved in the statistical process, an example being the National Bank of Belgium. Of course this will necessitate a strengthening of resources in the National Bank of Albania to cope with this additional responsibility.

3. The problems of conducting surveys are well brought out in this section of the paper, particularly the difficulties encountered in estimating the magnitude of the informal market. In Malta the statistical agencies have conducted a number of surveys but due to the small size of the country these may sometimes give erratic results due to the relatively large margin of error of the samples. This notwithstanding the authorities have persisted with the use of sample surveys for obtaining data on a number of variables as the information collected through this method is timely and cost effective. The Central Bank of Malta also conducts a regular survey on business perceptions in order to assess economic activity and expectations in the private corporate sector. I would therefore encourage the Albanian statistical agencies to persevere with survey methods of collecting data in order to build up a time series of data, which, despite a lack of accuracy at this stage, will provide them with a historical data base for future use in the construction of econometric models that could be used for macroeconomic analysis and projections.

4. In an important final point the paper focuses on the dissemination process. Conveying statistical information to the user in the shortest time possible and at regular intervals is a matter of utmost importance. The issue of an advance calendar and the shortening of the time between the processing of final data and their release are two objectives that should be pursued with urgency. The achievement of these objectives will surely enhance the reputation of the producers of the statistics and encourage greater use by the interested parties. Of course a lot can be achieved through the use of the web sites of the agencies responsible for the issue of official statistics. While, at this stage, use of the internet may be limited there is no doubt that cheaper costs and rapid innovation in technology will lead to greater access to internet sources of information. No doubt this is already happening in Albania and so the authorities there should be encouraged to continue to develop this form of dissemination of statistical information.

On this same subject I would like to conclude my contribution by extending my congratulations to the National Bank of Albania for their attractive web site it has set up. I visited this web site in recent weeks to learn more about the Bank and its monetary policy. I must say I found it to be very user friendly and informative. I certainly would encourage the Bank to continue to develop this important source of information which is easily accessible to users both inside and outside the country.

Finally I would like to thank most sincerely the organisers of this meeting, in particular, Ms Armida San José, who kindly invited me to express some views on this interesting topic. Unfortunately I was not able to attend due to pressing work commitments.

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Use of statistics in developing monetary policy

Part II

Diwa C. Guinigundo (Central Bank of the Philippines)

Papers for discussion:

1) **Ivan Matalik and Josef Arlt, "Use of Statistics in the Monetary Policy of the Czech National Bank"** [1]
2) **Craig Lindsay and Robin Lynch, "Use of statistics in developing UK monetary policy"** [2]
3) **Stefan Brunken, "Statistics on euro area banks' deposit and lending rates – Analytical use, concept and implementation at the Bundesbank"** [3]

First of all, let me stress the obvious responsibility of statistical authorities, including the central banks, and this is to ensure that the system of economic indicators in their respective countries are timely, accurate and reliable, coherent, as well as comprehensive. These goals are beautifully embodied and addressed in the three conference papers, which individually underscore the importance of having timely, accurate and comprehensive economic statistical information as a prerequisite to successful monetary policy. We cannot disagree with that.

Secondly, I also wish to keep our feet on the ground. Statistical priorities must always be matched with the amount of resources at the disposal of statistical authorities. Resource constraints, whether in terms of funding, manpower, and equipment, are a genuine problem in the case of developing countries, where statistical concerns generally yield to more pressing social safety-net programs of the public sector. Priority funding during fiscal budgeting exercises is highly skewed away from statistical programs to achieve greater accuracy and reliability of statistics made available in the public domain. Thus, it is fair to say that the range of available statistical information in a given country often reflects not only the breadth of demand from end-user but also the amount of resources available to statistical agencies. But having said that, we should not lose sight of the fact that the papers made us aware that there lies a great deal in existing and perhaps soon-to-be collected statistics. The paper on the analytical use of euro interest rates is a good example of how rich is the analysis that can be derived from existing for some countries, and perhaps soon-to-be collected statistics for the rest, on interest rate margins. This is also true of the rich analytical value of labor market statistics, as discussed by the UK paper. No doubt, many of these statistics are not currently available in many developing countries. But to the extent that they are available, a good number of important inferences on monetary transmission can already be derived from them.

Having said these general principles, let me take the pleasure of briefly commenting on the three excellent papers. With regard to the paper by *Ivan Matalik and Josef Arlt* ("Use of Statistics in the Monetary Policy of the Czech National Bank"), we believe that the experience of countries in transition such as the Czech Republic holds useful lessons for developing countries. For example, changes in the institutional setup and the structure of the economy pose considerable challenges to statistical authorities in terms of responding to new data requirements. Transition countries also share the developing countries' need for capacity-building in the production and dissemination of

1 *IFC Bulletin No. 16, July 2003, pp. 38-48.*
2 *IFC Bulletin No. 16, July 2003, pp. 49-52.*
3 *IFC Bulletin No. 16, July 2003, pp. 53-56.*

economic statistics to enable them to expand the economic database and lengthening the available time series. The experience of the Czech Republic in seeing a decline in importance of monetary aggregates and growing use of financial market data is not uncommon. We can expect to see more of these experiences as new financial innovations, products and services are put on stream, and in the process, alter the existing patterns of money demand in the economy. Parenthetically, as a way of side comment, the decision to shift to IT, to me, is something that one must decide if the present mode of monetary policy formulation is no longer effective in capturing the monetary transmission process, rather than the presence or absence of a high-frequency, reliable information set. If monetary targeting, for instance, is no longer relevant, and statistics are not up to IT requirements, something has to be done to improve on statistics while preparing to go into IT. In the Philippines, for example, financial innovation and its subsequent impact on the money–price level relationship was one of the main factors that led to the decision to adopt inflation targeting. We shifted to inflation targeting in January 2002 by announcing that both 2002 and 2003 inflation targets are transitional targets considering that monetary policy works with a long and variable lag. Since then, the conduct of monetary policy in the Philippines has been both more significantly transparent and forward-looking. This has added to the urgency of having more reliable, more coherent, and more comprehensive data sets, many of which are completely new. Inflation targeting has made it important to have a wide array of information about the state of the economy in order to arrive at an accurate assessment of price and output conditions as a basis for a forward-looking monetary response. The Czech Republic's increasing demand for data on the real economy first, then on public budgets is a classic example. It will be useful to know if in the context of inflation targeting, the CNB measures and includes the output gap in its policy reaction function. Including this important component in our experience has significantly improved our inflation forecast and needless to say has helped sharpen the calibration of monetary response. (Of course, this is hardly universal.)

With regard to the paper by *Craig Lindsay and Robin Lynch* ("Use of statistics in developing UK monetary policy"), we find commendable the continuing efforts of UK statistical authorities to align their priorities with the needs of users, particularly policymakers such as the Bank of England. Ensuring the coherence of existing economic statistics is an important step towards coming up with a reliable system of indicator variables for monetary policy. But this will always be difficult especially on those statistics that involve the labor market, and this is particularly so in the case of developing countries. Statistical authorities in developing economies continue to face considerable challenges in compiling statistical information on key areas such as labor market activity, and have a great deal to learn from their industrial country counterparts. A large portion of our labor market remains unorganized. Gathering data on unfilled job vacancies, labor demand, skills shortages and even worker inactivity in the expected level of disaggregation will be a continuing challenge. It will be useful to learn from our UK authorities a few details as to the specific methodology for measuring NAIRU and what sort of information provides us with the options for validating or counter-checking the estimates produced by the Bank of England.

In my country, the Philippines, authorities have also begun initial efforts in using business attitude surveys as an input to the monetary policy decision-making process. The Bangko Sentral ng Pilipinas (BSP) conducts a quarterly Business Expectations Survey (BES), which solicits perceptions of business and industry executives on short-term prospects of the economy to provide policymakers with indicators on the current and prospective business outlook. By next year, we expect to expand this beyond Metropolitan Manila to include all the key cities in the country. We also intend to cover consumer sentiments as additional basis for judging the prospects of effective demand in the country. Over the medium term, we also hope to implement a comprehensive system of leading indicators that would tell us the likely path of business and consumer activity in the Philippines.

Lastly, concerning the paper by *Stefan Brunken* ("Statistics on euro area banks' deposit and lending rates – Analytical use, concept and implementation at the Bundesbank"), we wish to comment that the efforts to produce harmonized interest rate statistics for the euro area will be particularly useful for the analysis of prevailing monetary conditions as well as monetary policy transmission in both the euro area as a whole and in the individual member countries. The absolute size of the population of financial institutions in industrial countries presents significant challenges in aggregation. Thus, emerging markets are in that sense fortunate because their jurisdiction includes only a smaller population of reporting institutions. Volume weighting of interest rates would be in general an easier process. Nevertheless, it remains a challenge for emerging markets to be able to come up with detailed breakdowns of the reporting framework to allow for the determination of systemic differences in transmission for various products and economic sectors. For instance, it will be a useful statistic to see how banks react quantitatively by instrument to changes in the policy rates, or

how their market share influences their price and quantity reactions. Finally, on another issue, we would argue that while the interest margin between deposit and lending rates can indicate price competition, we should also recognize that other factors might also be at work in influencing financial intermediation, including regulatory policies.

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USE OF STATISTICS IN DEVELOPING
MONETARY POLICY

The role of statistics in the conduct of monetary policy in Albania

Shelquim Cani and Gramos Kolasi (Bank of Albania)

Sound policies are driven by sound statistical support, specially in the case of transition economies where changes are ongoing and frequent. The same is true for Albania, being a transition country, where maintaining an accurate and reliable database has become a key issue in conducting economic policies.

This paper tries to give an overview of the statistical information available in Albania pointing out main problems with their collection and compilation. Furthermore, it describes the use of the statistics in formulating economic policies in the country, with a focus on monetary policy. A brief history of monetary policy and plans for the future are also described in order to give a full picture of the context in which monetary policy is conducted in Albania.

1. Introduction

Albania, like many other transition countries, started the huge detachment from the centralized economy at the beginning of `90s. The start of the difficult transition did not save anything comprising statistics contributing to a fast and deep degeneration in the process of data collection, data processing and data dissemination. Even though the central statistical unit in Albania never put its existence into doubt, in the early '90s, that unit was not anymore capable of providing any valuable piece of statistical information to decision-making bodies.

For many reasons, during 1990-1993, the statistical output was very poor, due to the incapability of authorities to monitor, measure and publish the main macroeconomic statistics categories, the low degree of coverage of the private sector of the economy, numerous delays in preparation and publication, etc.

The initial serious efforts to install and use an up-to-date output system of macroeconomic statistics in Albania date back to year-end 1992. For the first time, due to the assistance provided by the IMF Statistics Department, such statistical outputs as the balance of payments, money and banking statistics, consumer price index, etc., were conceived and presented. Since that time onwards, although during the transition period Albania experienced various twists, the overall statistics compilation process in general, has progressed continuously.

In September 1996 the money and banking statistics produced by the Bank of Albania were considered complete, reliable and appropriate to be included in the Albanian page at the IFS. The progress picked up 1998 when the Albanian authorities approved the country's membership to the International Monetary Fund's General Data Dissemination System (GDDS). On May 22, 2000, Albania joined eight other developing countries as the first set of countries included when the

GDDS site was officially launched. It should be mentioned that Albania was selected by the IMF as a pilot country to prepare a set of information on the national statistical practices (metadata). Its metadata were used as a model not only for Europe, but also for many other countries.

At present, the aforementioned statistics are produced by three different institutions: Bank of Albania, INSTAT and Ministry of Finance.

The *Bank of Albania* (the central bank) is responsible for producing and publishing monetary and banking statistics on monthly basis and balance of payments statistics on quarterly basis. In some cases the BoA has financed several statistical projects, especially surveys which aim to capture the performance of separate economic sectors.

INSTAT (statistical institute, government body), being the national statistical agency, is responsible not only for producing and disseminating statistics on national accounts and demography, but also has the legal right[1] to formulate and implement policies on compilation and management of statistics in Albania.

The *Ministry of Finance* is responsible for production and dissemination of government finance statistics on quarterly basis.

2. Macroeconomic Statistics in Albania

In a transition country, there is need for timely and accurate statistics in order to be able to take appropriate policies in reaction to rapid changes in the economic environment Therefore, the demand for statistical information has increased both in terms of the type of information and in terms of quality. Over the past years, the collection of statistics by the authorities in Albania has improved as new information which was not available in the past is being obtained. Now, data on monetary aggregates, the banking system, balance of payments, and major data from the real sector are available. On the other hand, accuracy of the data has increased, thus adding to the reliability of this information. The processing of the statistical data is based on internationally standard methodologies, allowing also for comparison among countries. In addition, specially in the case of monetary data and CPI, the set of data is suitable for application of various statistical analyses and econometric methods which assist the monetary policy decision making.

However, the decision making process in Albania still cannot fully rely on the statistical information available. Despite the major improvements with regards to the collection and processing of this information, macroeconomic statistics still face some crucial problems.

The data coverage is not complete. With an exception of monetary statistics and consumer price indices (which are produced on a monthly basis), all other groups of statistics have a relatively longer periodicity (mostly three months). The timeliness of data availability is also of a big concern. In most cases, data are disseminated with a lag of three to four months after the end of the reporting period. In short, the weaknesses can be summarized in the following key areas:
• lack of satisfactory national accounts data;
• insufficient account of the private or informal sector activities;
• need for improving various surveys and estimation procedures;
• inadequate legal and institutional framework for statistic;
• low degree of statistical information exchange;
• short time series that date back to the beginning of the '90s, with recurrent interruptions because of methodological changes.

It is important to stress that weakness of the system of data collection, processing, compilation and publication are already identified. The responsible institutions are also committed to eliminate these weaknesses as soon as possible. We believe that the challenges facing the Albanian authorities in the coming two to three years will be to ensure that significant efforts are made in improving the governance of the statistics sector. In that respect, we would like to list the work priorities as follows:

1. Build a clear and unambiguous policy-making body. Although, according to the existing law, the highest authority is the Council of Statistics, it should be noted that *de facto* it plays only an advisory role. It remains unclear who is responsible for the decision making process with regard to statistics in Albania. Although this problem has been identified long ago, unfortunately, no solution has yet been found to this legal vacuum. The draft law which is foreseen to be approved by the end of this year will settle this issue.

2. Increase data coverage to include all private sector. The private sector accounts for almost 75% of GDP in the country, but few data are collected from this sector. A major reason for this is

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1 *These rights are expressed controversially and thus this topic is subject to strong disputes.*

the high level of informal economy in the country, which consequently does not provide any data on its activity to the authorities. Efforts of the authorities are recently concentrated in introducing appropriate measures to reduce the informal economy in the country.

It is very important that increasing data coverage be associated with increasing information reliability as well as strengthening the opinion that the information gathered by the state agencies will not be used for purposes other than those related to developing statistics. There are various reasons that encourage the registered private enterprises and agencies to ignore providing or to distort information given to the state agencies. The reasons, for example, are lack of knowledge with respect to the extent to which the information provided by the private sector is used by the state agencies, distrust in these agencies, degree of information confidentiality, competition in the market, etc.

3. Make use of surveys to extract valuable pieces of information. In Albania, basic data sources, particularly for capturing private sector and informal market activities and for estimating illegal transactions, are seriously inadequate. Therefore, for reliable macroeconomic statistics, estimates should be made based on data collected from well-designed surveys using appropriate samples, which are representative of the population. The Bank of Albania has started making use of surveys specially in the capturing balance of payments statistics, but statistical surveys to this end face sampling and representation problems and certain estimation procedures need to be revisited. Recently, the Bank is engaged also in constructing confidence indices, thus conducting surveys on businesses, consumers and the banking sector, and the results have been satisfactory.

4. Produce and publish national accounts statistics as soon as possible. INSTAT has made some attempts to estimate the national accounts and it has promised that all the data for the period 1995-2000 will be published. However, the greatest challenge will be the concern over the quality of the figures that will be published. To a significant extent, the data quality will be assessed based on how the consumers of this information will react as well as how the international institutions will view the data quality. Recently, there are some ongoing projects, which we believe will be a great help for bringing the national accounts statistics close to international standards.

5. Improve the dissemination process of the statistical information from the producer to the user. Although the authorities are committed to increase the quality and transparency of statistical data, overall attempts are needed from all of them with regard to outlining a publication calendar and shortening the time between the processing of final data and their release. Perhaps, from this point of view the greatest challenge relates to the usage of Internet and the design of functional web sites so that anyone interested in statistics can access the desirable statistical information. Although the Bank of Albania and INSTAT have already launched their web pages, it should be noted that the public does not have facilities to access them. Additionally, web sites are utilized to a level that is not fully satisfactory, especially because statistics presented in these sites are not selected on a professional basis. Anyhow, the increasing number of users should be considered as a good incentive for increasing further the quality and dissemination of national statistics.

6. Apply the information technology available today. The level of knowledge on Internet applications in Albania is low. In addition, many problems in the respective infrastructure do not allow us to take advantage of the rapid advancements in technology that the information world is experiencing today. Obviously, we are bearing in mind that the enlargement of the Internet usage with regard to the data collection process means more exposure to abuse and as a consequence the need for more prudential measures in providing confidentiality.

7. Train skills of producers and of analysts of statistics. The process of formulating policies is supported by various statistical analyses which are based on reliable data. Furthermore, to a certain extent, the reliability of the data depends on their producer. Currently, there is still room for improving the skills of the existing data managers in order to process information appropriately. In addition, few are trained to analyze the data statistically, to develop models using econometric methods, to apply these models on gives cases, etc. Thus, one of the priorities of the institutions that compile statistics is the training of their human resources (It should be noted that this training is costly, and sometimes it becomes a burden for these institutions.) Also, with the return of students who have qualified abroad, the authorities might be able to fill some of the gaps in their human resources skills (assuming that the authorities develop strategies to attract this part of potential employees).

3. The monetary policy in Albania

On the course of economic transformation usual for transition countries, monetary policy in Albania has undergone several changes. Overall, we distinguish three periods when major turning points were taken with regard to the policy. The first step relates to the central bank's attempts to achieve macroeconomic stability, the second relates to the collapse of the economy due to pyramid

schemes, when the monetary policy became almost powerless, and the third relates to efforts to recover and maintain the stability of the economy. In all stages, the monetary policy has followed a general path having as its final objective the stability of prices, and using intermediate targets to achieve this. The operational framework applied to control the targets has changed over time.

3.1. Monetary Policy during 1992-1996

As in many other countries of Eastern Europe the monetary policy in Albania started to be implemented in the early stage of the '90s. The breakdown of the centralized economy was followed by a sharp deterioration of macroeconomic stability. The outcome of that was a contraction of the entire economy, which was reflected in the destruction of production capacities, in the explosion of accumulated inflation as well as in the large number of the people losing their job. On the other hand, the haemorrhage of foreign currency was big, bringing official foreign exchange reserves to a very low level. At mid 1992 the foreign official reserves were practically nil, maybe equivalent to a few weeks of imports.

This critical environment coincides with the time when Parliament passed the Law on the Bank of Albania, in April 1992. In that Law, besides other issues, it has explicitly been stated that the main function of the Bank of Albania is to conduct the monetary policy of the country to provide and to maintain the price stability.

For the first time, a monetary policy was prepared and implemented mid 1992, when as a part of an emergency 6-months program (supported by the IMF through a Stand-By Agreement), the Bank of Albania presented some measures which aimed at putting the money supply under control. Apart from price stability, other final targets were set to provide economic growth and to balance the external position of the country.

The monetary policy of the Bank of Albania during this period can be summarized by the following scheme:
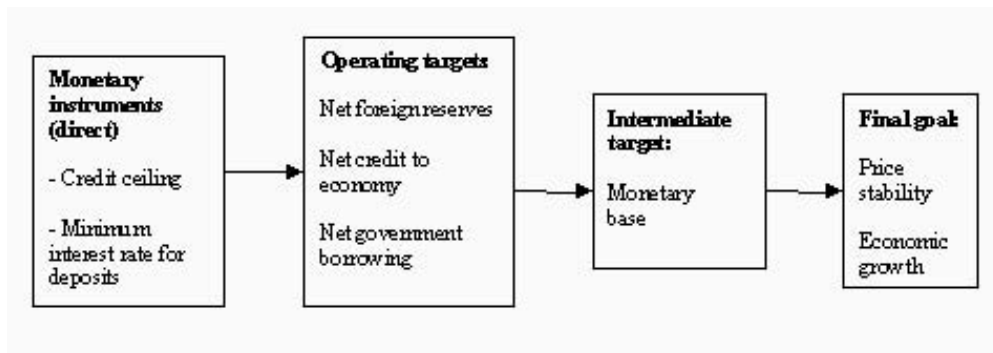
Since then – and up to the present day – the Bank of Albania has adopted a kind of monetary policy which is very close to a monetary targeting regime. This means that the intermediate target is the money supply, more concretely (in the Albanian case) the monetary aggregate M3. Taking into consideration the macroeconomic environment at the start of the period, it was decided to achieve control through implementation of direct monetary instruments, like a credit ceiling and administrative interest rates for deposits. This monetary regime was adopted together with a free float foreign exchange rate (which still exists). Since that time the restrictions on the current account movements have been abolished whereas the capital part of the balance of payments has remained limited as far as outward capital transactions are concerned.

1. Real GDP Growth (in %)
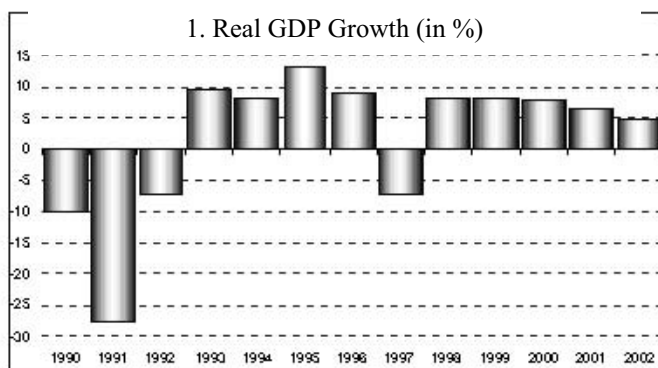
These measures, followed by a very tight fiscal policy (the first year of the newly elected government), were considered to be the main contributors in halting the further deterioration of the general equilibrium. At the end of 1992, inflation was reduced significantly, GDP real growth, even though negative, was four times smaller than in the previous year and, finally, foreign exchange reserves had increased remarkably to a level of three months of imports.

The process of macroeconomic consolidation continued very fast during subsequent years (1993-1995). During this period the efficiency of monetary policy was high, as obviously the market was affected in a direct way through imposing a restriction on the credit allocation and raising the floor of interest rates for deposits to a relatively high level. This stance of monetary policy (easy to establish) was one of the contributors in bringing inflation down year after year up to a single digit at the end of 1995 (Chart 2).

2. CPI (12-month change)
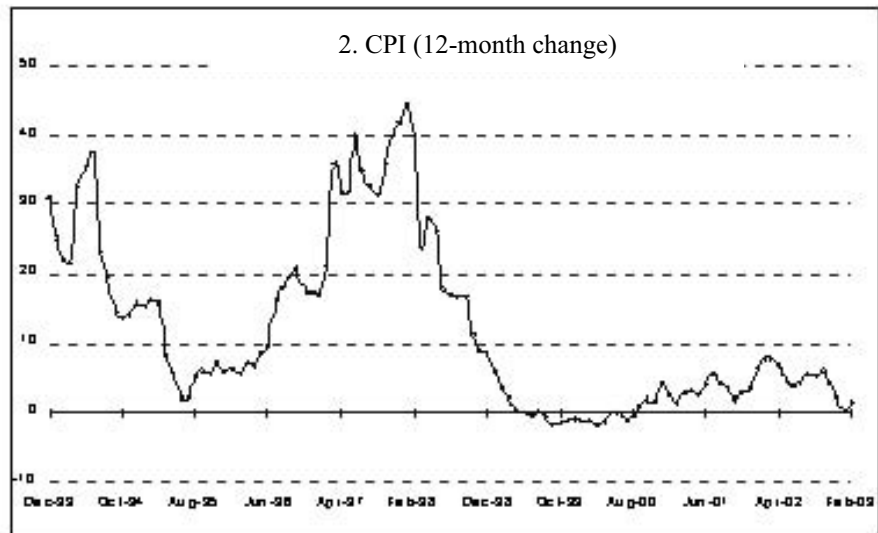
3.2. Monetary Policy during 1996-1997

The period 1996-1997 belongs to the fatal era of the so-called pyramid schemes. The very high and very attractive interest rates offered by the schemes substituted perfectly the interest rates set by the Bank of Albania, converting the monetary policy of the Bank of Albania simply into a notion. The high interest rates were the drive which absorbed all savings of the public. These rates varied from 12-30 percent a month. Some of the companies offered even to double the principal in two months. Investors were so much "infected" with the idea of getting rich without doing any work, that they started selling their assets, such as houses, and deposited the gains at the schemes. The due amounts were not withdrawn, even worse, they were re-invested together with the interest income amounts.

3. Fiscal and Current Account Deficits (in % of GDP)
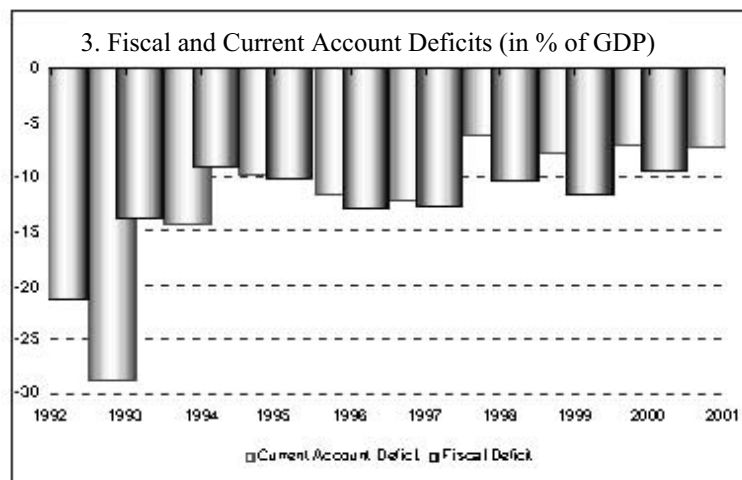
The limited ability of the companies to administer properly the deposits collected, obliged these companies to re-deposit the money in the banking system, in the form of current accounts, increasing enormously the level of excess reserves in the system, which is used heavily for financing bud-

get expenditures through buying treasury bonds. At the same time, two electoral campaigns were carried out in 1996, so the needs of the Government for liquidity was very high. As the consequence of this, at the end of 1996 the inflation rate was three times higher than in the previous year while the process of general failure of pyramid schemes had started (December 1996 the first one) in an irreversible way.

The eventual collapse of the pyramid schemes was catastrophic, both economically and socially. The loss of their savings drove the depositors to violent protests causing the destruction of many public and private tangibles. The economy came to an halt in the midst of a total social chaos.

Speaking of economic deterioration, the GDP fell by 7.3% while the inflation rate picked up to 42.1% in December. The unemployment rate rose while the domestic currency depreciated by almost 50%.

In such conditions the Bank of Albania had to increase once again the interest rates for deposits bringing it at 32 per cent. This time its task became harder as the credibility of the public in the banking system had been shaken. Yet, the measure resulted once again effectively in establishing control over inflation. By the end of 1998 the annual inflation rate had dropped to 8.7 %. The efforts of both monetary and fiscal policy were made more effective in the course of the consecutive years.

3.3. Monetary Policy during 1998-2003

Recent years have recorded a very low inflation rate, especially for an economy as Albania (this has happened in conditions of high economic growth). Even though some shock phenomena, i.e. the Kosovo crisis in 1999, the oil shock in 2000, were present during this time again, the inflation rate remained low due to the aforementioned reasons. From 1999 till July 2003, on the whole the Bank of Albania has cut the interest rates, but in real terms they have remained still high. It should be mentioned that the market reaction was still weak against such relaxation signals of monetary policy. This is reflected in the high difference between the minimum interest rates offered for time deposits and the treasury bills yield.

4. M3 Growth (in %)
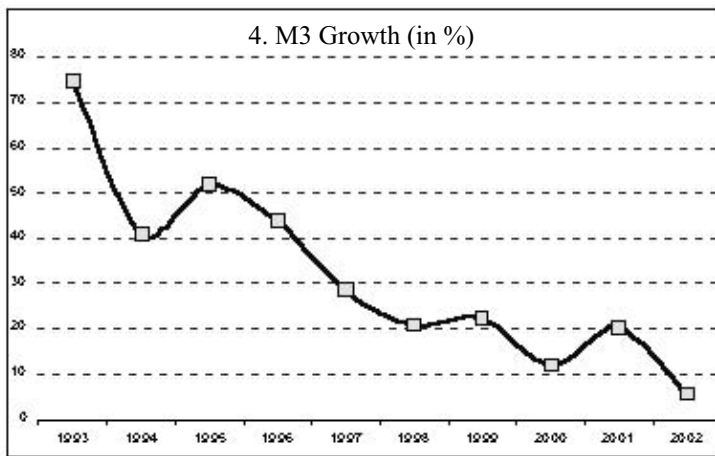
Under such conditions the Bank of Albania has moved one step ahead, changing its monetary policy strategy:
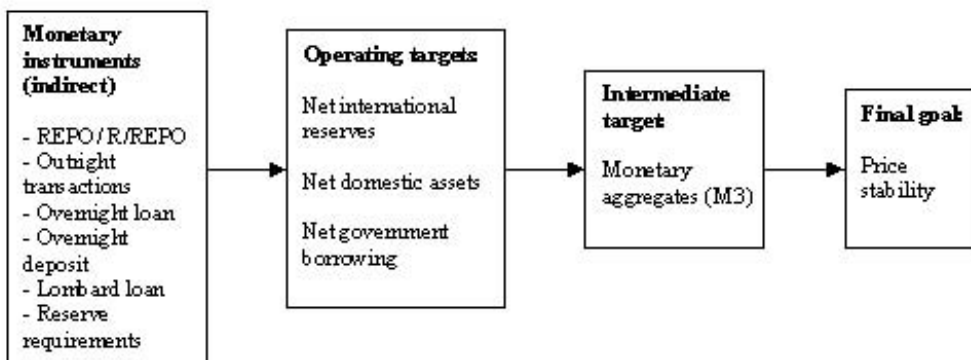
It has removed all direct instruments for controlling the money supply, aiming to explore a new way: that of ensuring monetary control through the market. Starting from the third quarter of 2000, the Bank of Albania is using the repo rates as the main instrument for achieving its monetary goals.

4. Statistics and the decision-making process

Despite the achievement scored in the last 10-12 years, it should be mentioned that the decision-taking process has not been an easy one. Considering a significant degree of absence of statistical information, particularly national accounts data, the BoA's decision-taking process basically has relied on the usage of monetary statistics.

This truth does not stand only for the Bank of Albania decision-making but for the entire decision-making process. However, undoubtedly, money and banking statistics have significantly been the basic nourishment for monetary policy.

Utilization of monetary and banking statistics
During the recent decade, monetary policy has undergone some changes. Since its starting point until the present day, the selected regime, with money as the intermediate objective, has remained unchanged. However, due to recurrent agreements with the IMF, the Bank of Albania constantly has to achieve its ultimate targets through the meeting of some quantitative restrictions on some monetary indicators (for more details, see the Annex).

This policy framework that is simple to a certain degree, enabled the money and banking statistics to be a sufficient statistical feedback for effective decision-making. The publication of such statistical documents as the monetary survey and monetary authority accounts, along with other data on financial markets and inflation, were deemed sufficient in considering any possible change of interest rate[1].

In the beginning of the 2000s, a kind of ineffectiveness of the above-mentioned policy instruments was evidenced. Therefore, after eliminating the credit restrictions in 1999, a year later (autumn of 2000) the monetary control was based merely on market instruments. To this end, a weekly repo auction was introduced, the market rate of which won the attribution of the basic percentage in the economy. Since that time, the Bank of Albania started to announce the desired figure of future inflation, fixing an interval of 2-4 per cent.

Unfortunately, the change in the operational framework is not associated with an enrichment of statistical information. Maybe, the only change rests on the fact that the statistical set available continues to increase the number of observations, manifesting a slight improvement on their quality.

Utilization of real sector statistics
Even currently, the statistical scarcity continues in the field of real economic indicators. Currently we have a new basket[2] of CPI, updated and enriched with additional articles, but, nevertheless, that does not mean a lot, as far as it remains the only qualitative development of the last three years. On the other hand, we have not yet a fully reliable statistical set of national accounts. The country's economic growth[3] still constitutes an estimation of a relatively low degree of confidence, while a GDP composition according to sectors or measured by expenditure or income, does not yet exist. Furthermore, the frequency of updating the GDP growth is low, at about 6 months.

The figures concerning the labor market are another story of statistical ineffectiveness in Albania. Even though it is claimed that the unemployment rate is measured in conformity with international standards, yet there exists a general idea that it conveys deviations from reality and that its utility is low. The large migrating movements from rural to urban areas or abroad make the measurement of employment indicators more difficult, damaging in this way the overall decision-making process.

Utilization of fiscal sector statistics
As aforementioned, it is the responsibility of the Ministry of Finance to compile and to disseminate the fiscal statistics. Currently, in Albania, though there has existed an independent local government for about one decade, yet its financial independence from the central government is very low. For this reason the balance is consolidated and part of the central fiscal balance published by the

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1 *During 90's the administrative interest rates on deposits in home currency, placed in state owned banks, played a key role in economy, some times 3-month deposits rate and some times 12-months maturity deposits rates.*
2 *The previous basket consisted in 241 articles, and it composed based on households consumption survey of 1993.*
3 *The estimation of GDP growth is based on some indicators like cement and electricity consumptions, prices of foreign partner countries, etc.*

Ministry of Finance. It should be stressed that despite the long time passed the periodicity of data is still once a quarter, while the release period takes three other months after the end of the reference period. However, considering the fact that the BoA and the banking system in general are having Government accounts, it is much easier for monetary policy to identify with a degree of accuracy the liquidity needs of the Government (naturally in very short-terms). This becomes especially important under conditions when the Bank of Albania is obliged[1] to partially cover the budgetary deficit with direct credit, as stipulated by law.

Statistics at the Bank of Albania

Undoubtedly, two more mature statistical categories are those that have to do with financial statistics and with the balance of payments. Both categories are produced since 1992 and in fact they constitute the basic information for the policy decision-making process at the Bank of Albania.

The balance of payments statistics are produced on a quarterly basis, with a lag of 3 months after the end of the reference period. However, some important parts of it, like foreign trade figures, services, remittances etc., are prepared on a monthly basis making it easy for us to have a better filling of the developments on the current account.

Currently, the Bank of Albania produces in parallel the complete financial statistics in compliance with the old and new statistical manual compiled by the IMF. In fact, the statistical input for the Bank of Albania decision-making consists of the statistical input produced pursuant to the previous IMF manual that was called money and banking statistics. More concretely, this statistical input includes:

- monetary authority accounts;
- Bank of Albania NFA;
- the deposit money banks consolidated balance;
- the monetary survey;
- performance criteria;
- interest rates and volume of transactions in financial markets (repo rates, interbank rates, treasury bills yields, lending and deposits rate);
- foreign exchange records; etc.

These data are produced on a monthly basis and recently the statistics department is taking steps to improve the method for calculating and presenting these data according to the new instructions of the IMF. Financial and banking statistics are published monthly and their release is notified in advance. In addition, daily and weekly information is obtained with regards to the interbank market, the money market, the forex market, and other operational information.

Other sources of information that the Bank of Albania is using recently to feed its monetary policy are constituted by surveys. Surveys with regard to the balance of payments face the problems of sampling and representation, and they are currently under review. However, since over a year ago, the BoA is involved also in building confidence indices and the surveys conducted appear reliable. More concretely, surveys are conducted quarterly on businesses, consumers and banks[2]. The results of these surveys are not published yet, as we are still trying to be fully convinced of the accuracy of the results, and also try to have a longer series of indices in order to be able to compare. It should be noted that the surveys are similar to confidence surveys conducted by other countries; therefore, in the future, figures could be compared across countries.

The combination of all this information, i.e. financial statistics[3] with CPI data and with data from the liquidity situation in the banking system, etc., forms the basic statistical input from the monetary and financial point of view, on which the decision on the next stance of interest rates is drawn.

In more detail, the Monetary Policy Department every month compiles and submits to the Supervisory Council the monetary policy report, a document in which proposals for future possible policy actions are specified. This report explains primarily the main developments on inflation and money, expectations and various forecasting methods on monetary aggregates, the exchange rate, and inflation. This document is subject to the Supervisory Council's judgement, which, at the end comes up with a conclusion whether it should be changed; to what direction and to what extent.

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1 *Conform Bank of Albania Law, the Bank of Albania is enforced to finance the fiscal deficit to a certain amount, which is equal to the 5 percent of the average fiscal revenues realized in the last three years.*
2 *Surveys on businesses and consumers are conducted in cooperation with INSTAT, which has the appropriate means and information to do the field work.*
3 *The statistical information is available monthly on 25th of the following month.*

Forecasting at the Bank of Albania

On the whole, the Bank of Albania's forecasting of monetary indicators is identified with the approach of the IMF that is known as monetary programming. According to this approach, the change: in net foreign assets[1], in the fiscal deficit[2], and in credit[3] to the economy, under the assumption of other assets remaining unchanged, is equal with the money supply growth. On the other hand, recently, we have started to use statistical information for econometric analysis. Also with the assistance of foreign experts, we are applying econometric methods to build models which might apply to our economic structure and trying to find and test linkages among macroeconomic indicators (it must be mentioned that as yet few series are long enough for such analyses.)

Since our main objective is price stability, the Bank of Albania has been more concerned with monitoring and controlling the process of inflation. Therefore, we have developed two very simple equations, aiming at inflation forecasting. In short, they consist of:

- an empirical approach on the historical inflation trend, where the highest importance is put to the most recent years and where the historical periods with considerable spikes on inflation, like 1997, are excluded;
- a more analytical approach, which considers those factors assessed to impact more significantly on inflation, measured as a monthly change of the consumer price index *P*.

$$P_t = \alpha_1 \cdot P_{(t-1)} + \alpha_2 \cdot m_{(t-3)} + \alpha_3 \cdot e_{(t-1)} + \varepsilon_t$$

where *m* is the monthly stock of monetary aggregate M1, seasonally adjusted, with three lagged periods and *e* the Nominal Effective Exchange Rate, seasonally adjusted with one lagged period.

The need to set up inflation forecasting models became concrete at the beginning of the 2000s, when it was verified that under conditions of meeting the quantitative targets of performance criteria, the money supply stock, many times recorded substantial deviations from programmed values while inflation[4] itself did not manifest such deviations.

However, the above-mentioned forecasting models are considered to have many limitations, especially from the point of view of the employment of econometric techniques. Therefore, it is being worked out in parallel to set up a more reliable model, on a quarterly basis, which has as its focus the division of the CPI into tradables and non-tradables. Similar analyses are also being made with regard to measuring the imported inflation and core inflation.

Finally, it should be mentioned that, based on the research made by the IMF Technical Assistance Mission in cooperation with experts of the Research and Monetary Policy Department, work has started a long time ago on the identification of the future monetary policy regime, trying to come up with an answer whether or not a change in the repo rate at a certain moment and to a certain degree has the desired impact on inflation.

5. The future: Inflation targeting or…?

Answering the above question, the Bank of Albania has presently taken a decision that essentially implies the adoption of an *Inflation Targeting Regime* (IT). The Bank has already understood that IT is a successful strategy if, on the one hand, it finds a sound macroeconomic and institutional environment and, on the other hand, it faces an audience (economic agents, individuals, general public) that understands and welcomes it.

In this regard, the Albanian reality, despite the impressive macroeconomic consolidation, can be assessed as still being far removed from the end of the long road towards a free market.

5.1. Macroeconomic aspect

Inflation: In general, the literature recommends that the step to an *inflation targeting regime* should only be taken after a period of two to three years of low inflation[5]. As a low rate is consid-

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1 *The information issued from the Balance of Payments statistics.*
2 *The information issued from the Government accounts statistics.*
3 *Credit to economy, according to the data of year-end 2002 is still in very low figures, at about 8 per cent of GDP or around 10 per cent of the banking system total assets. This implies an item not very difficult to be predicted.*
4 *The final monetary policy target consists in holding the headline annual inflation at the end of the year within the interval of 2-4 per cent.*
5 *Yet, countries like Czech Republic, Poland and other have adopted this regime in circumstances when inflation rate varied from 6 to 10 per cent.*

ered an inflation rate between 1-3 per cent. In general, during recent years, the trend was towards low rates and for almost two years, inflation has varied close to the upper level for the objective. In some years, *shock* factors were present leading alternately to high and low inflation. On average, the annual inflation rate from January 1998 to July 2003 has been 5.75 per cent, while during the last three years, July 2000-July 2003, it has been 3.44 per cent. If we look at each of the last five years, annual inflation rates were 21.6 per cent, 0.4 per cent, 0.0 per cent, 3.3 per cent and 3.8 per cent for 1998, 1999, 2000, 2001 and 2002 respectively.

Based on the inflation developments up to now, even though the current year implies that inflation is higher compared to that of the two previous years, it is believed that the preconditions to apply an IT regime almost exist.

Exchange Rate: The exchange rate regime is one of the other strong points for adopting IT. In the case of Albania, it is fortunate that the Bank of Albania has the exclusive rights to take decisions that choose and administer the type of exchange rate policy in Albania. Since 1992, the Bank of Albania has chosen a free floating exchange rate regime, whose main feature is that the currency price is determined by the supply–demand relationship. The existence of this regime is one of the criteria for adopting inflation targeting, and thus this indicator provides a strong point in its support. This becomes more plausible when considering the stability of the domestic currency, the lek, compared to the US dollar and the European currency, the euro. For the fourth year in a row, the lek has been stable, putting the Bank of Albania more or less in the position of a "simple spectator" of the developments in the foreign exchange market.

5. Foreign exchange rate (lek for the foreign unit)
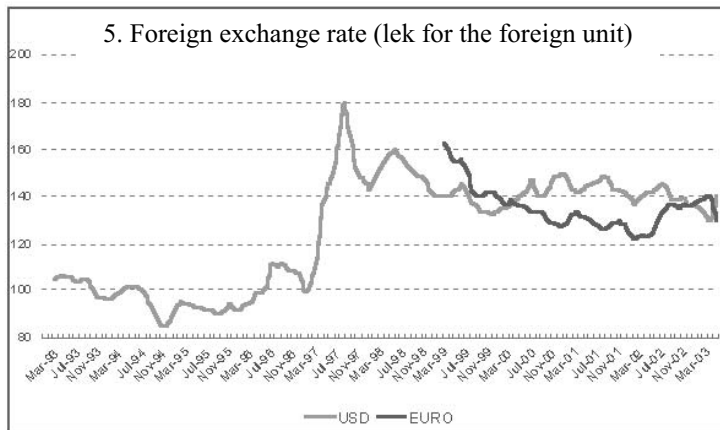
Fiscal consolidation: The last five years have marked important developments with regard to fiscal consolidation. The budget deficit has fallen from 11.3 percent of GDP in 1998 to 6.2 percent of GDP in 2002[1]. It is a fact that during the years 2000 and 2001, the budget deficit enjoyed the "fortune" of earning considerable revenues in foreign currency (financial assistance and privatization revenues). These revenues have smoothed out fiscal pressure on monetary policy and thus, the banking system has not faced liquidity problems, while the Bank of Albania has met the limits of the financing budget deficit as defined by the law.

However, fiscal stability and consolidation have not been achieved as yet. To say this, we consider the structure of budget revenues (a considerable part of these comes from the custom office), fiscal evasion and somehow arbitrary practices in collecting taxes and deciding on reference prices. On the other hand, the fiscal authority has not yet adopted the necessary transparency. This means that the efficiency of budget revenue utilization is not absolutely clear. Also, the low level of well-being in Albania (it is ranked as the fourth poorest country in Europe), a high unemployment rate (15.8 % at end of 2002) and the not so good practices of administering the budget revenue are factors which exert strong pressure on authorities to expand the budget deficit and to weaken the position of fiscal stability. From this point of view, and keeping in mind the difficulty of separating that part of inflation which is caused by budget policy, it can be stated that for as long as the treasury bills market will be the only securities market in Albania, for as long as the Bank of Albania lending to the Government will not be prohibited by law, for as long as there will be no credible engagement from political forces to administer fiscal revenues rigorously and with transparence, etc., a successful adoption of IT will be difficult.

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1 *Over the medium term, the budget deficit to GDP ration is projected at 5.2 by 2005.*

Financial Stability: If we look at the financial system crises, it seems that Albania has not gone through major ones. This holds true for that part of the economy, which is called "formal". In Albania, despite the establishment of five new insurance institutions, the *de facto* financial system can be identified with the banking one. On the other hand, we should not forget that the 1997 crisis, though it was not caused by the banking system, still was a typical financial phenomenon, the outcome of which on the main macroeconomic indicators, production, inflation, unemployment, balance of payments, etc., was unmeasurable.

In this context, the question arises: Which can be an immunity system protecting Albania against financial crisis? Despite the continuous attempts to strengthen banking supervision, yet our banking system is underdeveloped and offers a low level of intermediation. It shows large concentration and it operates in conditions where the risk is high (the whole spectrum from the political to the operational one), regulations are incomplete and where there are problems with implementing the rules, etc. One example of a combination of all this dates back to just one year ago when the financial stability of the banking system in Albania was threatened by the deposit withdrawals that took place during the period March-April 2002. The main subject of these withdrawals were the two largest banks. The reason behind this panic was purely psychological caused by a misinterpretation of the law for deposit insurance and the announced privatization of the Savings Bank, the largest and the only state owned bank in Albania. This panic materialized in 19.7 billion lek deposit withdrawals, from which 13.8 billion were in domestic currency and 5.9 billion in foreign currency. The fast increase in the currency outside banks, which faced an annual growth of 35.6 percent, was re-stabilized in the following months by the monetary policy of the Bank of Albania, whose main aim was restoring financial stability.

Apart from the banking market, other markets and financial institutions are almost inactive. They are newly born and the level of exposure is high.

An informal economy is still present and, despite the bitter experience, there are hints that borrowing activity in this market still continues, though to a low extent. According to the latest survey on businesses conducted by the Bank of Albania, the demand for credit in the informal market has fallen.

As might be noticed, a defensive mechanism of Albania towards financial crises suffers from many problems and although they are known for quite a while, it is not possible to eliminate them. The weak immunity system causes the Albanian economy to have a relatively high degree of exposure and consequently an important condition of an IT regime is not met.

5.2. Institutional aspect

While from a macroeconomic point of view there are factors that favor the choice of an IT regime as a monetary policy regime, it is believed that from an institutional point of view there are more disadvantageous points, which weaken this choice.

Central Bank independence: The law offers an independent position for the central bank, but in reality central bank independence is far removed from legal independence and under threat. It seems that other authorities have no intention to fully respect central bank independence. On the other hand, there is not sufficient guarantee that independence as granted by the existing law (all of it or specific aspects of it) will not be subject to later changes.

Central Bank transparency: Also, it is assessed that the central bank not yet fully applies transparency, especially on explaining the decision-making process with regard to monetary policy.

Central Bank credibility: It cannot be mentioned that the Bank of Albania enjoys full credibility in the public. On the other hand, adopting an IT regime weakens central bank credibility if the bank is shifting away from its objective.

Central Bank accountability: It is estimated that accountability should increase. The Bank of Albania has taken on to respect all the reporting requirements, but the quality of these reports is subject to further improvements that are expected to increase the Bank of Albania's accountability.

Not so good relationships with the Fiscal Authority: The coordination between the fiscal and monetary authorities is not at levels required by an IT regime. In practice, this lack of coordination hinders the Bank of Albania to implement efficiently the instruments to complete monetary policy.

Overall, the institutional aspect is considered a weak point in adopting *inflation targeting*

5.3. The level of understanding from the public

Albanians took the first practical lessons of what inflation is at the beginnings of the '90s. As years passed by, everybody understood that more or less, price increases erode their income and savings, however few understand that the difficult mission of keeping stable prices belongs to an institution named Bank of Albania. In fact, Albanians learned one thing; "short-term sacrifices can reap long-term rewards". Both main political forces called out this statement when each of them came to power. Despite this, they could not understand the mechanism that can take one from the devastated present to a richer and safer future. An evidence of this is the unending period of transition and the many failures during this period (mostly for subjective reasons). A limited number of people are able to explain why serious reforms are needed while some remain disappointed and the majority accepts them indifferently.

In this context, it is hard to believe that the Bank of Albania will find "suitable" partners on the other side that can rightly understand and perceive its decisions. When the public understands and welcomes central bank policy, then the public and its expectations of inflation (guided by the objective for inflation) turn into a factor that determines future inflation rates.

In fact, public awareness, its familiarity with policies, banking, etc. improvements in the institutional framework are today's tasks and they do not need to wait for the completion of other preliminary conditions. Some of the issues which need to be looked at are as following:

1. Increasing the Bank of Albania's transparency. For this reason, the central bank has increased the number of its publications, specially the explanatory ones, presentations with media, contacts with the public, meetings and seminars and has also approved a strategy and regulation on transparency which is in line with the Code of Good Practices in Monetary Policy approved by the IMF. Following this regulation, the decisions of the governing body of the Bank of Albania are not only published but also explained giving the context in which they are taken. Monetary policy reports are published on regular frequencies, and their release is made known to the public in advance. Statistical data produced by the BoA are fully explained in appendices. Currently, the methodology for compiling monetary and financial statistics (IMF's) is being published in Albanian.

The BoA has started the practice of organizing an annual conference with a different topic related to the BoA or economic and monetary policies and statistics (the conference of 2000 was dedicated to statistics only), which aim at bringing academics and experts together and in contact with the audience the BoA is trying to get attention of. Representatives of the governing body of the BoA have been engaged in meetings with students from Economic Departments, trying to point out the importance of role of the central bank in the economy and sharing the experiences in formulating policies.

2. Improving relationships with other state institutions. For this purpose, the Bank of Albania has adopted an intensive approach towards all international organizations (integration in EU, Stability Pact, and discussions of documents such as development strategies for SMEs). The most notable is the participation in the debt committee.

3. Increasing accountability. The Bank of Albania has increased its contacts and reports with and to the Parliament trying to expand on explanations about decision-making.

4. Increasing credibility. Apart from achieving the objectives and making these known, the Bank of Albania is trying to win the public and establish a regular communication with it. The bank is organizing campaigns (on lending), it is approaching businesses to understand the latter's expectations, etc.

5. Achieving education. The importance of training skills was also mentioned when discussing the steps to improve on statistics. Thus, the process of education has involved also the Bank of Albania itself, apart from other authorities and the public. The Bank of Albania has also offered financial support for this. The most recent example of training at the BoA is the 6-month school of Professional Education in Applied Statistics and Econometrics offered to its employees through the University of Tirana with the joint financial support from USAID.

6. Increasing central bank independence.

7. Getting involved in other issues which are not the Bank of Albania's direct concerns, but which affect the existence of required conditions to adopt IT. An example of this is the representation in the team responsible for the project of improvement of statistics and full implementation of GDDS

criteria. Annual contracts are signed with INSTAT, the national statistical agency, to facilitate the distribution of statistical data to users and to improve the quality of these data. Seminars and trainings are organized in cooperation with regard to real sector data (responsibility of INSTAT).

In order to comply with or improve each of the above-mentioned preconditions, a period of 2-3 years or more is needed. This time interval is based above all on the Bank of Albania's uncertainty about the commitment of other authorities to adopt this regime and about public reaction; on the need to build a macroeconomic model (including a trial period); on the increase of financial market efficiency with regard to absorbing informal assets, on further strengthening banking supervision, on the ability to collect new reliable statistical information and to increase the existing time series accurately; on improving the money market so that an efficient instrument to control money becomes available, etc.

6. Conclusions

The availability of a full set of statistical information which is timely and accurate is gaining great importance, as economic policies are being challenged to respond to the more complicated economic structures that are shaping the transition countries today. Unfortunately, in the case of Albania, there is still much to be done with respect to the provision of appropriate statistics. Focusing on monetary policy, this policy can rely only on monetary and banking statistics, produced by the bank. Improvements have been made with regard to the compilation and presentation of statistics bringing them close to international standards (IMF's) and thus ensuring a degree of comparison with other countries. Encouraging steps are taken regarding the forecasting techniques, which involve testing models by using econometric methods. Research work has been expanded in this area. All this has helped the governing bodies to formulate an adequate monetary policy over recent years. So far, the monetary policy followed by the Bank of Albania has been able to serve the bank's main objective, i.e. price stability. The inflation rate over the past year has been at around 3 per cent.

However, we have seen that the development of monetary policy, its transition from using direct instruments to indirect instruments, and the contemplation to change to an inflation target regime, put pressure on the demand for statistics, and such on the necessity to improve those further. The importance of this gains even more weight by our long term ambition to join the EU, and thus to bring our statistics at that level. As we have exposed our priorities how to reach there, we have also argued that it is a hard way.

Shelquim Cani and Gramos Kolasi (Bank of Albania)

ANNEX – Performance criteria

For as long as Albanian authorities are willing and accept to sign contracts with the IMF, they are obliged to meet some quantitative restrictions whose purpose is to control the domestic assets of the banking system and the assets of the central bank. In this context, these restrictions are vested with the quality of monetary quantitative objectives similar to the intermediary objective for broad money.

As aforementioned, Albania signed the first agreement with the IMF in the second half of 1992 and since then it has started to apply quantitative restrictions for the first time. The aim of these restrictions was to set upper and lower limits for indicators such as: net foreign assets of the Bank of Albania (floor), net domestic assets of the banking system (ceiling) divided in net claims on the Government and claims on the economy. The so-called criteria to achieve success are still used today, though somehow differently from the way used in the first years of transition.

Table 1 – Meeting the quantitative targets during 2002

	Dec. 01	Mar. 02	Jun. 02	Sep. 02	Dec. 02	Mar. 03	Jun. 03
NFA (in millions of USD)							
Target	542.6	536.6	530.6	546.6	558.6	560.6	582.2
Actual	542.6	547.5	550.1	570.9	562.2	596.2	606.5
Difference	0.0	10.9	19.5	24.3	3.6	35.6	24.3
NDA (in billions of lek)							
Target	78.1	83.6	89.1	90.1	95.1	97.1	98.1
Actual	78.1	84.8	87.6	83.5	87.1	76.5	68.9
Difference	0.0	1.2	-1.5	-6.6	-8.0	-20.7	-29.3
Net Credit to Government (in billions of lek)							
Target	237.5	238.5	244.2	247.0	257.0	263.7	267.7
Actual	237.5	240.5	246.8	247.0	259.6	263.1	263.1
Difference	0.0	2.0	2.6	0.0	2.6	-0.6	-4.6

TRADE IN SERVICES

Measuring Tourism in the context of International Trade in Services

Antonio Massieu (World Tourism Organization)

1. Introduction

Services transactions are increasing in importance, the impact of international trade in services on growth is now an area of particular interest for economic and policy analysis. The statistical measurement of international trade in services is also a subject of interest for trade policy analysts and international trade-in-services negotiators in the context of the General Agreement on Trade in Services (GATS). Among internationally traded services, "Tourism" is an area of special interest for a number of reasons. There are many economies in which the expenditure of international "visitors" is an important source of foreign exchange earnings and one that contributes substantially to employment and capital investment in the economy.

This paper will be concerned with the statistical measurement of the expenditure of international "visitors" within the larger picture of the domestic production of services and international trade in services. It will examine the concept of Tourism developed for the framework of the Tourism Satellite Accounts (TSA) in the context of the well-established and more traditional analytical frameworks such as the production accounts of the System of National Accounts and the Balance of Payments. It will explain the relationship between the concept of "visitors" developed for the new TSA framework and the main sources of available data to measure their expenditures, such as the Balance of Payments. For analytical purposes it is necessary to measure the number of visitors and other travellers who cross the border as well as the value of goods and services purchased by them. It is of interest to monitor the impact of their demand on the supply of those goods and services and the extent of import leakages, as well as the impact on GDP and GNP, on employment, capital investment and government revenues in the receiving countries, as well as the countries from which they travel.

Some mention will also be made of the use of the measurement of Tourism in the context of the GATS negotiations. Of the four modes of supply of services, mode 2 is "consumption abroad" and refers to the fact that international trade in services can occur by persons moving across borders to purchase and consume services in another economy. The expenditure of international "visitors" and other travellers, on services, is the most important component of mode 2. However, to the extent that they purchase the international transportation services of carriers belonging to countries other than the one in which they reside, the supply of these services are treated as mode 1.

2. Tourism, the TSA and other analytical frameworks

The production accounts of the System of National Accounts provide a framework to display the production or supply of products (both goods and services) by industries. They also display various categories of demand for those products, namely, intermediate demand for those products by businesses and final demand. Final demand is composed of the demand for products, by persons, by government, for fixed capital formation, and for exports. As demand when first compiled is for both domestically produced and imported products, in order to equate demand with domestic production, it is necessary to deduct imports.

The concept of Tourism can be related to the production accounts and the System of National Accounts. It can be approached from the demand side of the equation, "visitor" expenditure constitutes a sub-set of demand and international visitor expenditure is a sub-set of exports and imports. For purposes of Tourism analysis and to measure its contribution to the economy, the TSA has identified a set of Tourism characteristic products which in turn leads to the identification of a set

of Tourism characteristic industries for whom, visitor expenditure (domestic and international) accounts for a large proportion of their revenue.

The Balance of Payments is the most important source of information about international trade in services. Data collected and compiled for the Balance of Payments provides the data for the exports and imports of services in the production accounts of the System of National accounts. Goods and services produced within an economy are domestically consumed or exported. When international visitors and other travellers consume the domestic production of the economy to which they travel, the goods and services they consume are exports of that economy and are measured as part of the Balance of Payments. The fifth edition of the Balance of Payments Manual (BPM5) contains a Classification of International Transactions in Services, particular components of which can be related to the expenditure of "visitors" and other travellers.

The new Manual on Statistics of International Trade in Services (MSITS) has expanded the classification of services transactions contained in the fifth edition of the Balance of Payments Manual (BPM5) into the Extended Balance of Payments Services (EBOPS) classification. It has also expanded the concept of international trade in services and its measurement, to cover the GATS concept of modes of supply. It therefore adds to international trade in services the concept of "commercial presence" as a mode of supply and recommends the collection of Foreign Affiliate Trade Statistics. Possible approaches to the measurement of the GATS concept of "presence of natural persons" are suggested.

Given that the Balance of Payments is compiled world-wide, and it is expected that countries will start compiling EBOPS, it is useful to examine whether and how BOP and EBOPS data can be used in the analysis of Tourism.

3. Visitors and travellers

Tourism in the Tourism Satellite Account is defined as "the activities of persons travelling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes not related to the exercise of an activity remunerated from within the place visited". The persons referred to in the definition of tourism are termed "visitors". They may travel to destinations within the geographic boundaries of their own country or they may travel internationally. Their activity is measured in terms of their expenditure on goods and services. In the context of international trade in services it is the expenditures of "international visitors" that is relevant.

"Travellers" for purposes of the Balance of Payments and International Trade in Services are "individuals staying for less than a year in an economy of which they are not residents for any purpose other than (i) being stationed on a military base or being an employee (including diplomats and other embassy personnel) of an agency of his or her government (ii) being an accompanying dependent of an individual mentioned under (i) or (ii) undertaking a productive activity directly for an entity that is a resident of that economy". However, for purposes of the Balance pf Payments, currently, the one-year rule does not apply to students and medical patients, who are regarded as remaining residents of their economies of origin, even if the length of stay in another economy is for more than one year. Thus "international visitors" are a sub-set of "travellers".

The concept of "international visitors" covers the expenditures of tourists and same day visitors. It does not include expenditures of the following categories of persons included under travellers in the Balance of Payments. Commuters and seasonal workers, or students, persons travelling for medical treatment and ship's crews, travelling for periods of more than a year.

For the purposes of measuring the expenditure of "visitors", the TSA also includes consumption activity in anticipation of trips (such as purchases of luggage or travel insurance) and after they have returned home (such as having film developed for pictures taken during the trip). However, as these expenditures are undertaken in the country of residence, they do not enter into the measurement of international trade.

4. Tourism and the standard components of the Balance of Payments

Travel

"Travel" is one of the standard components of the Balance of Payments. The overall definition and content of Travel in the Manual on Statistics of International Trade in Services, is the same as in the Balance of Payments. The consumer (traveller) moves to the location of the provider (residents of

the economy) for the goods and services desired by the traveller. In the context of the GATS this is described as the second mode of delivery of services namely "consumption abroad".

Travel is different from the other *services* components of international trade in services because it is measured in terms of and includes the expenditure on both goods and services acquired by "travellers", from the economy to which they have travelled.

Estimates made for the Travel component of the Balance of payments is relevant for the measurement of international "visitor" expenditure for Tourism analysis.

However, as explained above, the Balance of Payments estimate has to be adjusted by the removal of the expenditures of commuters and seasonal workers, and the expenditures of students and persons travelling for medical treatment for more than a year and ship's crews.

In order for the concept of international "visitors" and "travellers" to coincide, the concept of travellers in the Balance of Payments (and international trade in services) would have to drop the exemption of the one year rule for students, persons travelling for medical treatment and ship's crews and exclude commuters and seasonal workers.

Passenger transportation

Travel is not the only component of the Balance of Payments relevant for Tourism analysis. The international carriage of travellers, namely "Passenger transportation" is also of concern for the statistical measurement of international visitor expenditure for Tourism analysis. Even though passenger transportation services provided to non-residents by resident carriers within the resident economies and cruise fares are included under Travel, excluded from Travel is the international carriage of travellers. This is covered under "passenger services" under "Transportation", which is a separate component the BOP classification of services transactions in BPM5 and in the EBOPS classification.

The standard component of the Balance of Payments "Transportation" covers all transportation (sea, air and other-including land, internal waterway, space and pipeline) services that are performed by residents of one economy for those of another. Of relevance to the analysis of Tourism is part of "Transportation" namely "Passenger Transportation" that is the carriage of passengers, rentals (charters) of carriers with crew and related supporting and auxiliary services used by visitors.

The convention of the Balance of Payments, also adopted for Tourism analysis is that passengers travelling abroad on a domestic transportation carriers e.g. airlines are treated as purchasing a domestic service whereas passengers travelling abroad on a foreign transportation carrier e.g., airlines are treated as purchasing a service from the country in which the foreign airline is registered.

Under the GATS concept of modes of supply, estimates of Travel are the main component of mode 2. However, the supply of international transportation services by domestic carriers to foreign visitors, is the direct supply of a service by mode 1.

Purpose of visit or travel

It is useful and necessary to distinguish travel in terms of the purpose of travel, and to make a distinction between those whose purpose of travel is business or personal, because for the production accounts of the System of National Accounts, business travel is an intermediate expense.

The Balance of Payments recommends a breakdown of travel into business travel and personal travel. MSITS recommends a further breakdown of business travel into expenditure by seasonal and border workers and all other business travel. The former includes the acquisition of goods and services for personal use by seasonal, border and other workers who are not resident in the economy in which they are employed and whose employer is resident in that economy. The latter includes the goods and services acquired for personal use by those travellers, whose main purpose is business, and covers goods and services acquired for their own use (including those for which they are reimbursed by employers) but not the sales or purchases that they may conclude on behalf of the enterprises that they represent.

Personal travel covers goods and services acquired by travellers going abroad for purposes other than business such as holidays, participation in recreational and cultural activities, visits with friends and relations, pilgrimage and education and health related purposes. The MSITS recommends a breakdown of personal travel into three sub-components, health-related expenditure, education-related expenditure and all other personal travel expenditure.

The further breakdowns are useful to be able to arrive at the expenditures required for the analysis of "Tourism".

Expenditures on services, of travellers, travelling abroad for business purposes, for less than a year, that are part of Travel and Transportation, are part of intermediate expenses in the production accounts of the System of National Accounts. They are also part of imports. They can be used to represent part of mode 2 and mode 1 of the GATS, respectively.

Incidentally, the value of services rendered by persons travelling for business purposes are exported services and would be included elsewhere in the Balance of Payments, they are not part of Travel or Transportation. They would be classified as exports of services in the relevant standard component including Other business services in the Classification of International Transactions in Services. Payments for these services are part of mode 1 and mode 4 for the GATS. Mode 4 covers "the movement of natural persons" which includes the value of the service rendered by persons, crossing the border to another economy to deliver a service. For the GATS, in principle, exports of business services would have to be split between mode 1 and mode 4, depending upon the amount of time spent delivering the professional service from within the country and abroad.

Goods and services purchased

In order to analyse the economic impact of travel on the economy it is of interest to measure travel in terms of the goods and services purchased by travellers. The BOP states "All goods and services acquired by travellers … from the economies in which they are travelling and for their own use are recorded under travel, These goods and services may be paid for by the traveller, paid for on his or her behalf, or provided to him or her without a quid pro quo (e.g. free room and board received by official visitors or by friends and relatives)… The most common goods and services entered in travel are lodging, food and beverages, entertainment, and transportation within the economy visited – all of which are consumed in the providing economy – and gifts, souvenirs and articles (irrespective of value) purchased for travellers own use and taken out of the economy visited." MSITS recommends an alternative disaggregation for travel services that separates expenditure on goods, expenditure on accommodation and food and beverage services and all other travel expenditure. This goes some way towards the greater disaggregation recommended for purposes of Tourism analysis. For Tourism analysis the aggregate must cover all the goods and services purchased by international visitors but detail down to the groups of Tourism characteristic products is recommended in the TSA.

As both the aggregate for Travel and that for international visitor expenditure includes expenditure on both goods and services, for use in the statistical representation of the modes of supply for the GATS, expenditure on goods has to be removed from these aggregates.

Foreign affiliate trade statistics (FATS)

MSITS describes the fact that in order to collect data to measure mode 3, commercial presence, countries will need to start collecting and compiling Foreign Affiliate Trade Statistics. Collection of FATS is just beginning. Once countries begin to collect such data, analysis of the extent to which Tourism services are delivered through commercial presence, will depend upon the extent to which Tourism characteristic industries as listed in the TSA are reflected in the data collection. Hotels and Restaurants are a recommended industry grouping for the collection of FATS.

Presence of natural persons

This is a concept of the GATS; it is the fourth mode of supply. For the GATS it is measured both in terms of the number of persons moving across the border temporarily to deliver a service and the value of services delivered. The number of international visitors whose purpose of travel is to deliver professional services in their own capacity or as employees of businesses delivering services, will be useful for a part of the measure of mode 4, if additional information about them were collected such as the industry to which they belonged, according to industry groups of the International Standard Industrial Classification, as well information about the occupational group to which they belonged.

5. Conclusion

Data compiled for the Balance of Payments and EBOPS, are necessary and useful in the measurement and analysis of international Tourism. Greater convergence between the concepts of the BOP and EBOPS and the Tourism Satellite Account would be mutually beneficial, in that similar sources and methods of data collection and compilation could be adopted to serve the needs of all three, which would contribute to enhancing the quality of data in all three frameworks and go towards meeting some of the needs for measurement of the modes of supply of the GATS.

Acknowledgement

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<u>TRADE IN SERVICES</u>

FATS statistics:
Multinational enterprises,
the globalization process and BoP data

Lessons from the French experience[1]

Frédéric Boccara and François Renard (Banque de France)

Introduction

Foreign Affiliates Trade Statistics (FATS) are developing in order to *measure the role of multinational enterprises (MNEs) in the globalization of the world economy*, that is the increased economic interactions and interdependencies among nations.

Foreign Direct Investments (FDI) represent the financial flows and stocks at the origin of the setting-up and of the development of MNEs. But it is necessary to go beyond this purely financial facet and to articulate it with the whole activity and structure of MNEs[2].

FATS provide a general and internationally agreed framework for achieving some of these needs. They aim at providing a measure of the activity and of the structure of the foreign-controlled affiliates of the parent companies in the compiling country (inward), and of the controlled affiliates abroad (outward).

The focus of FATS statistics has been primarily put on trade in services, as the transactions relating to these "products" take on different channels or modes of supply; the sales through affiliates take an important role among these channels, as for a large part of services are international transactions, there is a need of a commercial presence to meet the needs of the consumer. In fact however, *the concept of FATS applies to the whole of sectors,* including manufacturing, and corresponds to an organization of the production and of the markets which extends beyond the borders of national economies.

This paper intends to *illustrate the importance of FATS for the understanding of some new economic trends*, taking the example of the work which is presently done in France. It aims at presenting the measure and the practical use which is done with a first set of FATS indicators, and the challenges which are still pending to get an accurate view of the role of MNEs in the globalization.

The paper is organized along four parts:
- The first part is devoted to the *definition of FATS and to the institutional arrangements* which are taken for their compilation.
- The second one is devoted to *the way FATS are compiled in practice*. French experience is taken as an example.
- The next part is devoted to *the use of FATS*. The intent is to show that the topics covered by this concept are very wide, as through FATS and among other matters (a) one can analyze *the different features of the globalization* of the economies, (b) one can analyze *the role of foreign con-*

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2 *These needs and this double aspect have been raised for many years, see among others Hymer (1960), Kindleberger (1970), Caves (1971), Dunning (1990), Lipsey (2001), and CEIES (2003).*

trolled companies in the host economies, (c) and the *performances* of MNEs; (d) FATS bring the focus on the importance of the *services sector*, (e) and last but not least they can be used as an important piece for the understanding of the *links between national economies*.

- The last part deals with the *work which is in progress in France,* that is the building of an individual longitudinal database on FATS, and the efforts which are spent to apply the concept of Ultimate Beneficiary Owner (UBO) or more precisely the concept of Ultimate Controlling Unit, a concept which is recommended by international organizations, but which poses formidable statistical measurement problems.

1. What are FATS and who compiles them?

This general presentation will explain briefly (1) why there is a need for FATS data, (2) which variables represent FATS, (3) what are the conceptual and legal environment for FATS compilation, and (4) what are the various patterns of the institutional organization for the collection system.

1.1. The need for FATS statistics

FATS are statistics describing the structure and the activities of MNEs. Inward FATS relate to the foreign-owned affiliates in the reporting country, and *outward FATS* to the foreign-affiliates owned by investors of the reporting country and to the activity of parent companies controlling non resident affiliates.

Diagram 1 – Different FATS Sub-sets
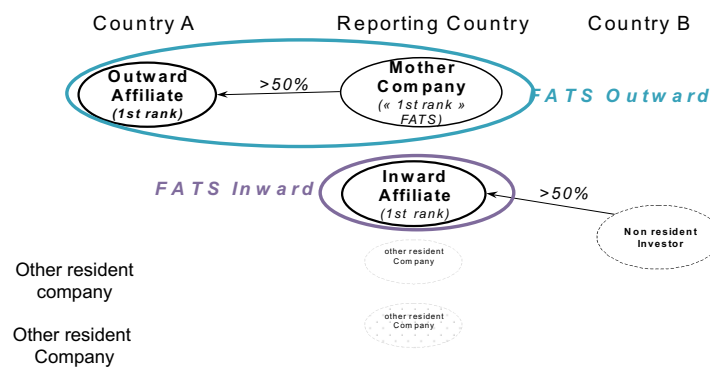
FATS statistics serve two main purposes:

(a) *They provide indicators that help to understand the phenomenon of "globalization"* of the world economy accompanying the phase of sustained growth of foreign direct investment which started in the eighties in industrial countries. One of the issues of FATS is the measure of the influence of foreign direct investments in the economic activity of the compiling country and in the activity of the foreign countries with controlled affiliates (employment, production…). *In this respect, the commercial presence of a company in a foreign country through branches or subsidiaries, represents a mode of supply which has to be considered together with foreign trade between residents and non-residents, as it is measured by the balance of payments.*

The focus put on FATS means that the approach based on the enterprises groups comes within a world economic context where those major economic actors pass through the geographical borders. It does not make any difference (or more precisely does not make the same difference as policy makers do) between cross-border flows and the economic activity supported by the integration of companies in host economies, even if this difference is important for policy makers and resident economies (see Renard 1996 and Boccara 1999).

(b) Closely linked to this phenomenon of globalization and its consequences on the organization of the economic markets, *FATS statistics aim at supporting GATS for trade in services topics,* and at providing a statistical background for dispute settlements (see MSITS, 2002). In fact trade negotiators refer to the four possible modes of supply which cover cross-border transactions

(exports and imports), but also consumption of services abroad, the presence of natural persons in the country where the services have to be supplied, and the commercial presence through a subsidiary (sales in the invested country or in a third country). This last channel is particularly important when considering trade in services which needs in most of the cases a close relationship between the producer and the consumer.

1.2. The content of FATS statistics

The domain which is covered by FATS statistics is at the crossroad of business statistics (domestic economic activity data), balance of payments (data on FDI flows, exports and imports of goods and of services) and International Investment Position statistics (IIP or FDI stocks).

(a) *FATS statistics apply to a subset of the FDI companies*, as these data cover only those affiliates that are *directly* controlled (majority-owned) by a foreign direct investor; as an example an inward affiliate is a resident enterprise of which more than 50% of the ordinary shares is directly[1] held by a foreign investor.

(b) The choice of variables representing the economic activity of multinationals is primarily based on the needs of GATS regarding transactions on services but also on the need to analyze the process of globalization, whatever the economic sector under consideration.

The basic variables are the number of companies, sales or turnover, value added, employment in the affiliates, exports and imports of goods and services.
- The *number of companies* is asked for at least two objectives: a comparison with the total number of firms making transactions in the economy, in order to measure the degree of penetration of the economies by foreign entities; a calculation of various ratios (such as the number of employees per company), which aims at comparing related performances with domestically owned companies.
- *Sales or turnover* measure the activity of affiliates within the host country and with third countries (exports). The local sales represent the GATS mode 3.
- The *value added* provides the contribution of foreign affiliates to host country gross domestic product (GDP).
- *Total exports and imports of goods and services* provide information on the linkages with BOP data. They need a geographical breakdown (with a focus to be put on the country of the parent companies), and a distinction which will have to be done between trade with related and trade with unrelated companies, as the former transactions have specific characteristics (for instance the use of transfer prices to value the transactions).
- *Employment* is used to determine the share of foreign-controlled companies in host country employment, and helps to analyze if multinational affiliates employment complements or substitutes employment by domestic firms; it is used to determine companies performances per head.
- The *industry classification of the affiliates*[2].

Other variables of interest are *compensation of employees*, *gross fixed capital formation*, *gross operating surplus*, and *research and development expenditures* (as the latter are considered as a vector for the creation of new products and a vector of technological transfers).

Rules to be used for attribution of FATS data:
- Since FATS statistics cover affiliates that are fully controlled, whatever is the holding rate (above 50%), 100% of the amount of the variable has to be allocated to the affiliate.
- The report of FATS variables has to be classified by activity. All activities are covered, but the focus is put on services.
- The geographical allocation of the owner of the *inward affiliates* has in principle to be done on the country of the ultimate beneficiary owner (UBO); the country of the first foreign parent is used in practice in most of the cases. The host country of affiliates is used for the attribution of *outward FATS*.

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1 *Progress is being made on the account of indirect control (see below and for a detailed presentation see OECD (2003b), pp 22-35.*
2 *And not the one of the whole enterprise group, as it is not yet clearly defined*

1.3. The legal environment

FATS data are compiled within a conceptual and legal framework which has been designed by international organizations as the principal aim of comparing countries fosters the need for international harmonization of concepts and definitions.

(a) The *Manual on Statistics of International Trade in Services* (MSITS) (and the Compilation Guide which is in preparation) describes the rationale of FATS, gives the standardized definitions of the conceptual issues and some guidelines for the collection and the compilation of the data.

(b) *A joint OCDE-Eurostat questionnaire* aims at collecting on a yearly basis from MS data on FATS with a double breakdown: (1) turnover, value added, total exports and imports of affiliates broken down by economic sector[1] and (2) turnover and employment of main sectors of affiliates broken down by geographical area[2], together with (3) a questionnaire on the activity of all firms in the reporting country, in order to calculate EU aggregates.

(c) *An output oriented regulation*, which is discussed with representatives of EU National Central Banks (NCBs) and National Statistical Institutes (NSIs), on the way to be implemented, and whose purpose is "to establish a common framework for the systematic production of Community statistics on FATS", will impose a common level playing field for all EU MS, with a common conceptual framework and a minimum common request.

1.4. Institutional organization

Depending on the country, the compilation of FATS data is done either by NCB alone, by NSI alone, by NCB and NSI together, or by a specialized institution.

In order to take profit of the whole statistical system, and taking account of the heterogeneous nature of FATS statistics, it has been decided in France to ensure a cooperation between different institutions:

(a) *There is a close cooperation between Banque de France and INSEE for inward FATS*. The French NSI brings its knowledge of the French multinationals networks and the indicators on the activity of the whole of French companies through business statistics framework; the Central Bank brings its knowledge of the FDI stocks statistics and of the related FATS variables.

(b) *The Banque de France is in charge of the outward FATS, which are a subset of the survey on outward FDI stock statistics*. A cooperation has started with the Department of Foreign Economic Relations (DREE) of the Ministry of Finances, as the latter organization collects interesting information on the activities of foreign subsidiaries of French companies through its embassies network.

2. The compilation of FATS data

The MSITS gives some guidelines on the compilation of FATS data, which will be reminded before a presentation of the French collection system.

2.1. General guidelines

FATS are basically statistics which have a close link with FDI, of which they represent the extension. The process of compilation needs (a) the identification of relevant companies and (b) the extraction of FATS variables.

(a) The *identification of majority-owned companies* has to be done from the use of an extended business register including the characteristics of individual companies, tagging those of them

1 *The economic sector of the affiliate is deemed to be the one of the mother company when considering the outward FATS; it is the activity sector of the affiliate itself when considering the inward FATS (for example: wholesale trade, even if the affiliate belongs to a car building services enterprise group).*
2 *The geographical allocation corresponds to the one used for FDI: FATS are attributed to the immediate investing country (inward) or the immediate host country (outward).*

which are foreign direct investors (outward) or invested (inward). The organization of this database depends on the way the compilation of direct investments is done (FDI transactions and/or position). Whatever the organization, this database has to include the ownership criterion from which it is possible to determine if a company is foreign controlled, and especially to spot majority-owned companies.

(b) *The compilation of FATS data is generally different when considering inward and outward data.*
   • Inward data are in most of the cases a subset of business statistics on resident enterprises, of which basic data are in the hands of NSI and / or in the hands of Central Banks.
   • Turning to outward data, the solution which is generally used is the recourse to a survey, getting the data from the mother company located in the compiling country, as there are legal obstacles to get the information directly from foreign affiliates of resident companies. It is obvious that this approach could encounter difficulties of implementation.

2.2. The French case

Statistics on FATS in France have been provided and produced by the Banque de France BOP Directorate since 1995 as a reference year, following the requests of the OECD-Eurostat common questionnaire. The compilation relies mainly on the combination of various already existing sources, matched by the use of the unique company's identification number, taken from the General Business Register which is under the responsibility of the French NSI (INSEE). This combination of sources needs an important effort of comparison, rectification and harmonization, to be put on the data which are provided by companies.

(a) The *selection of majority-owned resident or foreign companies*, which correspond to the FATS universe, is an extract of the FDI stocks surveys database carried out by the BOP Directorate on a yearly basis. This database covers the whole economic sectors, but it is focused on the direct control. Inward and outward subsets of companies include at least 9000 units (for each of them and depending of the reference year) with at least 2000 French mother companies.
   Another database (called Lifi, that is a database on the financial links between companies), which is under the responsibility of the French NSI and which covers the sole resident companies, takes account of direct and indirect links of these companies with other firms. This database will be used to tackle FATS statistics by taking account of the indirect ownership and the Ultimate Beneficiary Owner (UBO) (or, better, the controlling unit) in an inward perspective. It can be supplemented by the information taken from the Banque de France companies database called FIBEN, which contains data on the financial links between companies.

(b) The sources which are used to compile *inward FATS* are (1) a database covering the accounts of a large number of companies, which is under the responsibility of the Banque de France Business Directorate (value added, employment, sales), (2) specific databases for banks and insurance (sales and employment), (3) BOP flows (exports and imports of goods and services), (4) business sector aggregates relating to the total economy to be compared to FATS variables (NSI).

(c) *Outward FATS* are compiled through an adding question on the turnover of the affiliates to the existing survey on outward FDI stocks. The scarcity of data relating to outward FATS is explained by the fact that affiliates of French multinational companies are indirectly surveyed through the mother company located in France.

(d) France has chosen to adopt a *step by step approach* to enrich the basic data which are presently compiled.
   • A first piece of work which is on the go is the *integration of indirect control* for inward FATS, matching the FDI and Lifi databases (see developments below).
   • Another work which is in progress is the *building of a database on FATS*, putting together the characteristics of *individual companies* with their identification number and the associated FATS variables. This database will permit to make an in depth analysis of FATS over time, taking account of the changes in ownership intervening in the population of companies which could hamper the interpretation of the indicators.
   • A third piece of work, which will be done as soon as possible, is the *enlargement of the set of variables* which are reported (employment for outward FATS, exports and imports between related companies, profits, investment, assets…).

3. The use of FATS data

The topics which are covered by FATS are very wide, as through FATS:
- one can analyze the *role of foreign controlled companies* in the host economies (inward/outward),
- FATS statistics allow a comparison betw4een the *performances* of MNEs and those of nationally controlled companies,
- they bring the *focus on the role of the services sector* in the economy,
- FATS give some elements for the explanation of *the links between national economies,*
- one can *compare the different features of globalization of the economies*,
- last but not least, *FATS have to be related to FDI stocks*, even if other sources of funds can be used to finance the overall operations of affiliates (this topic is not dealt here).

3.1. The role of foreign controlled companies in the host economies

FATS data can be used to measure the role of foreign controlled companies in the host economies. It is necessary to get disposal of a coherent set of statistics, in order to compare the figures relating to MNEs to those of the whole economy or to those of the sector of MNEs affiliates. The indicators which are presented below, are comparable to the one proposed in the *Manual on the Globalization Indicators* (Hatzichronoglou, 2003a, OECD 2003a and b).

a) Inward FATS

Global approach

Different approaches can be used in order to *measure the weight of MNEs in the compiling economy,* depending on whether we consider the number of employees, the sales, the value added, or the total exports and imports of goods and services. The corresponding aggregates for the total economy, or more precisely for the total of resident companies are used to calculate the share of MNEs.

Table 1 – Share of inward affiliates in some macroeconomic aggregates in France
Share of MNEs (in %)

	1995	2000
Turnover	10	10
Value added	10	11
Employment	7	6
Exports	20	28
Imports	30	37

Source: INSEE, Banque de France.

Taking the French economy as an example, the *share of MNEs foreign affiliates in the value added* of the whole of companies was 11% in the year 2000. This share is lower (6%) when considering employment; one of the reasons is the importance of holding companies, as they are invested from abroad, while the employees work in other companies, which belong to other various sectors and which are under the control of those holding resident companies.

Another interesting indicator is the *share in the trade in goods and services (exports and imports).* This share which amounts to 28% for the former and 37% for the latter, illustrates the key role played by multinationals in foreign trade[1].

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1 *Some data on intra-firms trade are available in France, but are not compiled for the moment within the FATS framework. It is a specific survey covering a restricted field (affiliates of manufacturing groups) and relating to the years 1993 and 1999.*

Sector approach: penetration

It is possible to analyze the *share of foreign affiliates on a sector basis,* insofar as inward FATS are detailed statistics split by sector (the economic sector of the affiliates in the compiling economy) (see table 2).

- Hence, it appears that high-tech sectors, as pharmaceutical, chemicals, electrical and electronic components, are those where the share is the highest;
- it also appears that wholesale and retail trade affiliates play a predominant role in foreign trade, a smaller role in terms of value added, and a much smaller one in terms of employment;
- the role of the holding companies is difficult to interpret as production or services activities are not directly made by these companies[1];
- services sectors are missing among the 10 first sectors. Computer services come on the 13th position for sales and VA[2].

Table 2 – Share of inward affiliates in resident companies totals (%)

					VA
		Inward affiliates/total sector Ranking according to:			
	Employee number		Sales		VA
1	Pharmaceuticals, perfume	24%	Electrical and electronic components	32%	27%
2	Chemicals, rubber and plastic products	24%	Chemicals, rubber and plastic products	30%	28%
3	Holdings	21%	Manufacture of coke, refined petroleum products and nuclear fuel	27%	22%
4	Electrical and electronic components	20%	Pharmaceuticals, perfume	26%	27%
5	Mechanical equipment	13%	Mechanical equipment	20%	17%
6	Other mineral products	13%	Food, beverage and tobaccos	18%	35%
7	Motor vehicles	13%	Manufacture of wood and paper	17%	17%
8	Wholesale and retail trade	12%	Holdings	16%	17%
9	Manufacture of wood and paper	11%	Trade and repair of motor vehicles	15%	7%

Sector approach: attractiveness

Going further, FATS data are very useful to *evaluate the attractiveness of the different sectors invested by MNEs* (see Cœuré, Rabaud, 2003 for a discussion on needs and indicators). They add to the information carried out by FDI statistics, as the weight of some sectors in terms of the invested funds can be much lesser when considering employment or value added (and vice versa).

For that purpose, we have to rank sectors by the number of employees in inward affiliates, and not by the share of inward affiliates in the total of resident companies. *The wholesale trade sector is the first invested sector in absolute terms, followed by the manufacturing sector* (of which electronic components, manufacture of pharmaceuticals, chemical products, cars); the business services sector comes to the fifth rank in terms of employment, whereas for FDI stocks holdings, real estate and finance stand at the first ranks (Graph. 1).

b) Outward FATS

Sectors weight

Turning to outward FATS[3], the manufacturing sector comes at the first rank with 33% of the outward turnover, just before services with 27%, (holdings excluded); holdings control 29% of the total turnover, and the wholesale and retail trade the remaining 9%. It is of course possible to detail

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1   *The holding companies belong to the business services sector in the NACE classification, whereas many users consider that they are a component of the financial services.*

2   *It is useful to recall again that FATS statistics relate here to the first rank affiliates.*

3   *For the moment, in France, an outward company is classified by the sector of its mother company (the investing one).*

Graph 1 – Attractiveness: Inward Affiliates Employment versus FDI stocks
by Sector
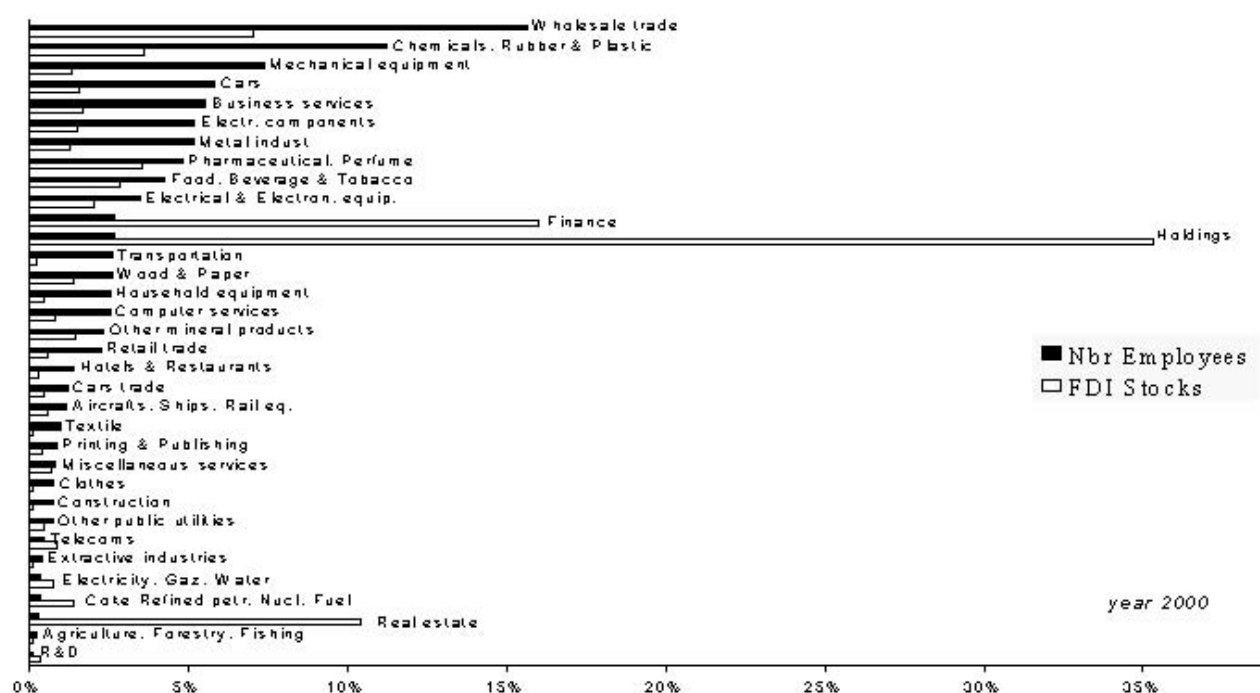
this diagnosis; for example manufacturing of cars and telecommunications represent respectively 13% and 8% of the total (see Table 3, column 1).

Table 3 – Outward FATS: Weight of the different sectors (Year 2000)

	Weight of the sectors (outward turnover : sector/ all the sectors)	Extroversion of French mother companies (outward turnover/ turnover of mother companies)
Manufacturing	33%	49%
Food, beverages and tobacco.	3%	35%
All chemical products	3%	40%
Manufacture of metal products	3%	58%
Manufacture of motor vehicles	13%	68%
Electricity, gas and water supply	1%	6%
Construction	1%	51%
Total trade	9%	49%
Wholesale trade	7%	42%
Total services (excluding Holdings)	27%	130%
Telecommunications	8%	146%
Financial intermediation	6%	345%
Real estate and business services (excl. holdings)	10%	215%
Holdings	29%	731%
All sectors	100%	80%

Many holding companies (denominator) have no sales but only financial income, since their outward affiliates can have high sales.

Sectors extroversion

Another interesting indicator is the ratio comparing the turnover of outward affiliates to the turnover of their mother companies. This indicator constitutes a measure of the extroversion of French mother companies; as we could guess, this indicator is particularly high in the services sector (130%) compared to manufacturing (49%) (see Table 3, column 2).

3.2. Performances of MNEs

The comparison of performances of MNEs to those of all the companies is another and crucial field of investigation (see OECD, 1994). Some of the questions to be raised when making this comparison are:

- Is there a difference in the propensity to import and to export, and what is the net contribution of MNEs to the surplus in the trade of goods and services?
- What is the magnitude of job creation by MNEs?
- Do performances measured by labor productivity and capital productivity significantly differ? …

Taking account of the available data on FATS, this analysis is easier to do on the inward than on the outward side.

a) Performances of inward affiliates

Foreign trade

The role of MNEs in the trade in goods and services is considerable in France, whether they are the affiliates of foreign companies or French mother companies (see Table 4). The former represent 26% of the total exports and 39% of the total imports and are at the origin of a deficit, mainly due to trade affiliates established in France. The latter represent 48% of the total exports and 35% of the imports and are at the origin of a significant surplus which relates mainly to manufacturing companies.

One of the factors explaining the high level of the propensity of MNEs to export and to import is the *share of intra-group transactions*. Unfortunately the statistical framework in France cannot already give a complete picture on these transactions. However, the Ministry of Industry carries periodical studies on its own domain, and *the latest estimates were a share of 41 % of intra group transactions on the export side and 36% on the import side.*

Table 4 – Performances of inward affiliates in trade in goods and services

Table 4a – Balance of goods and services *(Year 2001)* *Billion EUR*			Table 4b – Weight of Foreign Trade Flows *(Year 2001)* *%*		
	Inward affiliate	French mother companies		Inward affiliate	French mother companies
Balance of goods and services	-25.7	34.7	Exports G&S	26%	48%
Of which manufacturing cies	-0.7	43.6	Imports G&S	39%	35%
Of which trade companies	-22.8	-7.8			
Of which services compan	-2.1	0.9			

Employment

The job creation by affiliates of foreign companies is an important matter of discussion in the debates about the effects of the globalization of economies. But taking account of the present methodology in France, it is impossible today to get a clear view on that point. Indeed the apparent evolution from 1995 to 2000 shows a 2% decrease against a 7% increase for the whole resident companies, with as a result a decrease of the share of inward affiliates from 7% to 6% of the total employment (see Table 5).

In fact these percentages have to be analyzed cautiously, because *the measure of the employment in inward affiliates meets two kinds of limits*:

- *This measure is restricted to the first rank affiliates*, that is those which are immediately under the control of a foreign company. As a consequence, it tends to limit the number of employees, as an important number of FDI transactions rests on holdings which hold participations in manufacturing companies. Those indirectly controlled companies, not yet included in our FATS statistics, are likely to concentrate an important part of employment. *A first estimate, taking ac-*

count of the indirect control, would change the number of employees of affiliates in the year 2000 from 773 700 to 2 000 000.

- Another limit relates to the fact that the population of companies which is under scrutiny *does not cover a steady perimeter*, when important changes appeared during the period under review.

Table 5 – Performances of inward affiliates in terms of employment and VA

	Inward affiliates			All resident companies
	1995	2000	Growth	Growth
Employment (number of employees)				
	790 000	773 700	-2%	+7%
(Share in the total employees)	(7%)	(6%)		
Value Added (billions EUR)	52.3	63.0	+20%	+25%

Productivity

A proxy of labor productivity is the average ratio comparing the turnover and the number of employees. This ratio can be calculated for different categories of companies, including MNEs.

Table 6 – Labor productivity
K EUR/employee

	Turnover / number of employees		
	Inward affiliates	French mother companies	Whole economy
MANUFACTURING	311.0	389.9	221.6
CONSTRUCTION	185.6	172.6	92.6
TRADE	553.9	578.7	291.7
Of which wholesale trade	523.4	658.8	447.7
SERVICES (Excluding trade)	176.6	129.1	119.8
Of which financial sector	101.2	*43.5*	519.5
Of which Holdings	285.2	202.8	378.6
ALL ACTIVITIES	329.2	273.3	184.2
All activities, excluding financial sector and holdings	336.9	301.3	172.9

Year 2000.

Table 6 shows that *MNEs, whether they are inward affiliates or French mother companies, bring out a higher average labour productivity than other French resident companies*, which is probably among other reasons due to the size of multinationals, irrespective of the size of the company (affiliate) itself. This table shows also that differences between economic sectors are sizeable, generating high composition effects in aggregates performances and justifying the pressing necessity of using industry breakdowns.

b) Performances of outward affiliates

Given the lack of FATS data relating to outward affiliates, which are limited for the moment to sales, *the only way to measure the performances of foreign affiliates of French companies is to compare the evolution of their sales to the one of the French mother companies or to the whole French resident enterprises*. This comparison gives an idea on the way foreign affiliates supplement the sales of domestic companies.

The high level of the growth rate of outward sales (75%) during the period, compared to the one of the sales of all French resident companies (35%), covers important changes in the perimeter of foreign affiliates. However when limiting to the companies which were present in 1995 and still in 2000, the growth rates reached 54%, which remains a high level (table 7).

Table 7 – Evolution of sales of outward affiliates
Billions of current EUR

	1995	2000	2000/1995 Evolution	Contribution
Outward affiliates Sales	156	273	+ 75 %	-
Of which present in 1995 and 2000	*82*	*126*	*+ 54 %*	*+ 28 %*
Of which new comers affiliates	*0*	*144*	*-*	*+ 92 %*
Of which companies which are not anymore foreign affiliates during the second period	*74*	*0*	*-*	*- 46 %*
Sales of Mother (French resident) companies	300	440	+ 47 %	-
Sales of all French resident companies	1 806	2 437	+ 35 %	-

3.3. A focus on the services sector

Sales via affiliates are an important channel for international transactions in services, given the fact that in many cases these transactions need a close relationship between the services supplier and the consumer. Focusing on the French economy, the table below (Table 8) shows that the role of services in international transactions is much higher when considering not only imports and exports (respectively 16% and 19% of trade in goods), but also sales through affiliates[1] (respectively 23%, and 50%[2] of trade in goods).

A comprehensive view of services sales needs in addition to consider the role of manufacturing companies on these transactions. The share of the foreign sales of services by the manufacturing sector amounts to 20% of their turnover. Taking account of this estimate as a proxy for foreign affiliates belonging to this sector, the international services transactions would amount to 32% against 16% (imports) and to 56% against 19% (exports) of goods transactions (see Table 8).

Table 8 – The Role of Services in the French Foreign Transactions

		Imports and Inward Affiliates	Exports and Outward Affiliates
Foreign Trade Only Foreign Trade + FATS Estimation 1 :	$\text{Foreign Trade}_{\text{Services}}$/ $\text{Foreign Trade}_{\text{Goods}}$	16 %	19 %
	$(\text{Foreign Trade}_{\text{Services}} + \text{Sales}_{\underline{\text{Services sector}}\text{ affiliates}}) / \text{Foreign Trade}_{\text{Goods}}$	23 %	50 %
Estimation 2 :	$(\text{Foreign Trade}_{\text{Services}} + \text{Sales}_{\underline{\text{Services sector}}\text{ affiliates}} + 0{,}2.\text{Sales}_{\underline{\text{Manuf}}\text{ affiliates}}) / \text{Foreign Trade}_{\text{Goods}}$	32 %	56 %

Foreign Trade = Imports or Exports, Sales = Turnover Year 2000.

Table 9 below on the sector breakdown of trade in services confirms for resident companies (inward part) the *important role played by the manufacturing sector* and by the trade sector (mainly merchanting). *The trade in services deficit of the inward affiliates of MNEs is due for 50% to the manufacturing sector (an important consumer and importer of services), and the surplus of the French mother companies is mainly due to the services sector itself.*

3.4. Linkages between economies

One of the channels explaining the increased interdependence between economies is obviously the role played by MNEs in economic operations, following the rapid expansion of direct investment[3].

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1   *In this table, double accounting cannot be avoided, as exports (imports) can be (re)sold by outward (inward) affiliates.*

2   *This data has to be considered cautiously as the sector of the outward affiliate is the one of the mother company located in France.*

3   *See for an empirical detailed investigation « More synchronous cyclical movements through mergers and acquisitions » De Nederlandsche Bank Quarterly Bulletin- March 2003*

Table 9 – Sector breakdown of trade in services
Year 2000

Affiliate Activity sector	French mother companies			Foreign affiliates (inward)		
	Services Exports	Services Imports	Balance (billions EUR)	Services Exports	Services Imports	Balance (billions EUR)
Manufacturing	24%	31%	-0.8	21%	25%	-0.5
Trade	19%	22%	-0.2	43%	44%	-0.4
Construction	4%	2%	0.4	2%	1%	0.1
Services	51%	42%	2.3	34%	31%	-ε
All activities	100%	100%	1.6	100%	100%	-0.8

The underlying mechanisms are complex and various, but without doubt, the share of foreign subsidiaries in domestic production is an important element and can be considered as one of the indicators which could be used to measure the sensitivity of the economy of a given country to foreign shocks. In France for instance the influence of foreign companies through their subsidiaries represents 11% of the business sector contribution to GDP in the year 2000[1].

Conversely, it is important to consider also the outward direct investments and the turnover of outward affiliates compared to the total turnover of French resident companies. The twofold increase of the outward sales (+98%), which increased this ratio from 10% in 1995 to 15% in 2001[2], gives an idea of the *growing extroversion of French companies whose activity is more and more dependent of foreign economic trend.* It is especially the case when considering the importance of the sales of French affiliates in the USA, which represented in 2001 25% of the sales with the different zones with a growing relative importance (+6 points of percentage between 1995 and 2001, see Graph 2).

Graph 2 – Weight of different geographic zones in the sales
by foreign affiliates of French MNEs
(Years 1995 and 2001)
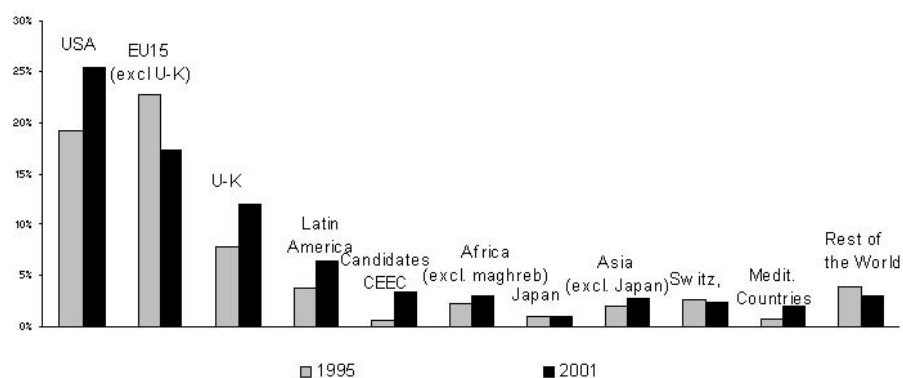
3.5. A measure of globalization of economies

The different trade patterns of the world economy have to be taken into account when measuring globalization, as sales by MNEs and cross-border trade represent two alternative forms of international transactions which do not have the same impacts on the sensitivity of economies to changes in the economic context. In particular, exports participate to the value added of the exporting country as sales by outward affiliates are a component of the value added of the invested economy. Conversely exports and sales by affiliate may react differently to the same factor. For instance, an increase of prices in the partner economy would favour exports price competitiveness, as they would deteriorate price competitiveness of the sales by affiliates, to the extent of their local production.

A first set of indicators of the globalization pattern of economies relates to the structure of the international transactions, the second set relates to the measure of the degree of openness of them.

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1   *almost 15%, if indirect controlled companies are taken into account (see infra).*
2   *For outward sales, we use in this section here first results for 2001 year, since in the rest of the paper we use year 2000.*

a) Internal or external globalization through affiliates

It is interesting to compare for different countries:
- the indicator on the *external globalization*, aiming at measuring the role played by non resident affiliates under domestic control through their sales versus exports;
- the indicator on the *internal globalization*, comparing the sales in the compiling economy by resident affiliates under foreign control to the imports;
- these indicators are supplemented by *two synthetic indicators*: one measuring the extension of the globalization, and the second the orientation (inward or outward[1]).

Referring to the Table 10 and Graph 3 below, it appears that:
- some countries are mostly externally-globalized through affiliates (Japan),
- others are internally-globalized through affiliates (Austria),
- and a third set of countries appears to be both internally *and* externally globalized (France, Germany, USA).

This typology can be brought together with the related FDI stock (inward or outward). For instance the specific position of the USA[2] is explained by the dominant role of affiliates in international transactions, together externally (with sales through affiliates which represent 40% of exports) and internally (with sales through affiliates which represent 36% of imports). The slightly positive value of the indicator of orientation shows that sales by affiliates just compensate the huge US deficit of cross-border transactions.

In *France*, the positive balance of the sales by resident and non-resident affiliates add to the surplus of the cross-border transactions in goods and services, with as a result an indicator of orientation which reaches 10%.

b) Further developments on the degree of openness of economies

In order to get a clear view on the way countries contribute to the globalization, it is important to add an indicator of their openness. That is why the international economic transactions (inward and outward) have been compared to the GDP for four important countries (France, Germany, Japan, USA).

The openness refers traditionally to the sole foreign trade. *The inclusion of sales by foreign affiliates gives a better view of the openness of economies*. As the graph below shows, the hierarchy between the four countries becomes slightly different. For outward openness, for instance, France comes close to Germany (with a difference of 5 points), whereas the gap is much higher (30

Table 10 – International Comparison of the Globalization by affiliates:
External versus Internal (%)

	Outward sales / Exports	Inward sales / Imports	Globalization Synthetic Indicators	
	non resident Affiliates under domestic control External Globalization (a)	Resident Affiliates under foreign control Internal Globalization (b)	Orientation (Ext-Int) = (a) – (b)	Extension ½(Ext+Int) = ½[(a)+(b)]
USA	40	36	4	38
Japan	19	1	18	10
Germany	8	6	2	7
France	20	10	10	15
Austria	2	9	–7	5
Finland	13	6	7	9
Portugal	27	40	-13	33
Belgium/Luxembourg	7	3	4	5

*Source: OECD, Measuring globalization, 2001, reference year 1998, except for Japan (1997).*

1 In particular, we extend here to FMNs the distinction between "two types of outward orientation, in trade and in foreign investment" made by Bhagwati, Srinivasan (1999), distinction on which they base an important part of the discussion about relations between free trade, openness and growth.

2 And Portugal to a lesser extent.

points), when referring to the sole exports. Another interesting feature is the openness of USA which becomes, at least on the imports side, significantly higher than Japan's one when adding inward sales (Graph 4).

Graph 3 – Globalization by affiliates: extension and orientation
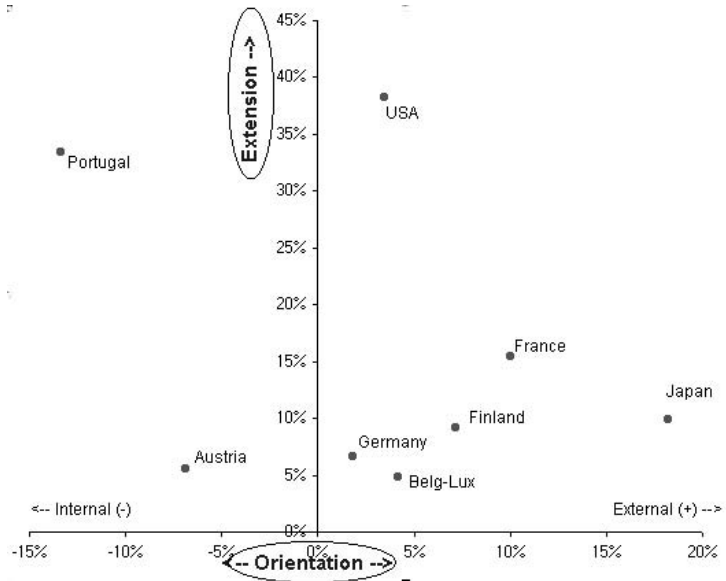
Graph 4 – Foreign Affiliates Sales and Foreign Trade compared to GDP
Index 100 = average ratio for the four countries.

4. Work in progress in France

Important efforts are and will have to be spent in France in several directions to develop FATS and to get disposal of a performing statistical tool.

4.1. The development of the use of FATS

A growing number of countries now produce FATS statistics, and the use of standard definitions is going well, favouring international comparisons. This is an incentive to develop the use of the concept, being today at a stage where the supply of statistics creates the demand.

This development necessitates an effort to be done by statisticians to propose easy to understand indicators to potential users. A recent workshop, organized by the Banque de France, and

bringing together the producers of statistics, the users and academics, has been a first step in France on that way (Banque de France, 2002).

4.2. The continuation of a step-by-step approach

The step-by-step approach chosen by France consists:
- In a progressive *enlargement of the available variables*, which will be extended as soon as possible (1) to the wages, the gross operating surplus, the gross formation of fixed capital, the tangible assets for inward FATS, (2) and to the employment in foreign affiliates, for outward FATS (on the way to be included in the outward FDI survey).
- The building and use of an *individual longitudinal database* in order to catch the different explaining factors of the overall evolution of FATS variables.
- An effort to take account of *indirect control*.
- A *statistical treatment of some specific cases* for which an individual treatment is costly (joint ventures, holdings…).

4.3. Integration of indirect control

FATS already go beyond sole foreign trade and their scope is wider than "foreign affiliates", since mother companies are to be covered in order to analyze the role and performances of inward as well as outward affiliates. Indeed FATS are devoted to domestic and foreign activity and structure of MNEs, together with a country approach. This rises the *need to consider the enterprise group level.*

Concept. This implies, in the French context, to distinguish between ownership share[1] and the notion of control, which is derived from ownership share, but is different and needs to be calculated. For example, in Diagram 2 we see that on the sole basis of ownership share of 36% by A in company C, company C would not be classified as foreign affiliate of company A, although it is in fact controlled by A at a level of 60%. The pattern is similar for mother companies (see OECD, 2003a for detailed explanations).

Diagram 2 – Control versus Ownership
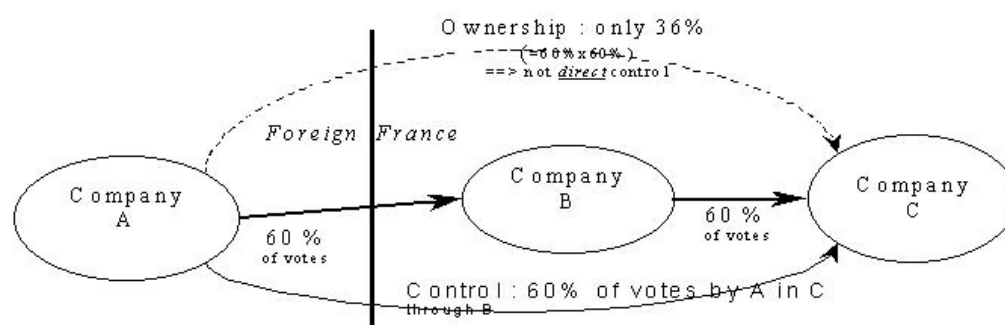
 Estimates. We presently compile FATS on the basis of the first rank of control (direct control) This corresponds to our FDI surveys[2]. *We are however on the way to integrate indirect controls, matching the database on FDI and French databases covering the financial links of resident companies*. The first results show that for 2001, employment in resident French affiliates under foreign indirect control would add some 1.3 millions to the 800,000 in direct controlled affiliates. The magnitude is similar for mother companies (Table 11).

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1   *Or, better, votes.*
2   *Aiming to avoid capital overlapping generating double accounting between a head and its affiliate(s).*

Table 11 – Weight of direct control

	Direct control/(direct+indirect control)	
	Inward	Mother Cies
Employment	49%	38%
Turnover	52%	44%
VA	52%	48%
Tangible Assets	51%	57%
Profits (operating)	48%	51%
Wages	53%	47%
Productive Inve4stment*	46%	38%

Productive investment = new tangible+intangible assets.
Source: Banque de France (FIBEN,FATS).

Methodological problems. The integration of indirect controlled companies raises important questions relating to the availability of information – at national and international level – and to the methodological principles to be used to consolidate FATS variables amongst controlled companies. (a) It would necessitate, in a country like France, the use of a database on financial links between each of all resident companies, and also between non resident companies. (b) Secondly, each of the variables need a specific treatment, as some of them are submitted to double accounting (e.g. total assets) and others are not (VA, tangible assets)..

5. Concluding remarks

5.1. Need of normalization and cooperation

It is important to stress the need of normalization of concepts and definitions as well as the need of cooperation between different agencies, in order to ensure international comparability and get meaningful indicators at a reasonable cost.

At international level, there is:
- a need of a share of *information on the identification of enterprises groups*. Especially, it is necessary that a company being classified as "under foreign control" by a given country has the same treatment in other countries.
- a need of *accounting standards*, in order to have similar definitions for the variables (such as value added).

At national level, the *cooperation between national organizations*, notably NCB and NSI, as we experience in France between Banque de France and INSEE, allows a significant improvement of FATS data. More generally, we experienced that an accurate cooperation with various institutions, enterprises, users and providers, can significantly foster and accelerate the development of FATS statistics[1].

5.2. The need of a step-by-step approach

The FATS framework can take place in a step-by-step development of statistics, beginning by the production of some limited but meaningful indicators, to give users the willing for having more, before extending the coverage and the number of variables.

5.3. The key role of services

FATS are a necessary tool to illustrate the key role of services in today's economies, and they have been developed primarily for this target. However it is proved to give new insights concerning all sectors and the overall economy, notably on the importance of both vertical international integra-

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1   *See Cnis 2001 and Banque de France 2002.*

tion (integration of services and industry) and horizontal integration (integration of services and services, see Markusen, Maskus, 1999).

5.4. The need of developing new economic concepts

Together with FATS, new concepts are developing in parallel with the globalization of economies. It is the case of the concept of *trade balance based on the notion of ownership*, which can be combined with the trade balance based on the residency (De Anne, 1990, Landefeld, Lowe, Wichard, 1993, Lowe, 2002). It is also the case of the *balance of MNEs international operations* (see Hymer 1960). Other concepts will probably be necessary in order to take account of the MNEs use of domestic funds for international investment (see Boccara 2003), or to describe the contribution of MNEs to the connection between GDP and Gross National Income.

The aim with these new concepts is to go further into our understanding of the articulation between world economy, MNEs and national economies given by BoP and IIP statistics.

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TRADE IN SERVICES

Implementing the Manual on Statistics of International Trade in Services: Are we progressing?

William Cave (OECD)

1. Introduction

The new Manual on Statistics of International Trade in Services (*Manual*) was recently published jointly by six international agencies. It first appeared in English in December 2002.

Surely then it is too early to ask about, let alone measure, progress? Not so. The user community of trade analysts, governments, business and trade negotiators need more relevant and more detailed data on trade in services and they need them urgently. There is a need to monitor progress in implementation so that attention can be focused on problem or priority areas. It should also be appreciated that, although only recently published, the Manual was a long time in preparation. Drafting of the Manual began as far back as 1996 and some countries had been improving their trade-in-services data collections prior to its publication and had anticipated the new international standards in order to meet their own user needs.

By what instruments and criteria could progress be measured? First there are a number of core recommendations in the Manual and some other main recommendations. We could look for progress in the number of countries reporting such data for each recommendation. Associated with this would be whether international organisations are collecting and disseminating the data. Finally data quality – what can be said about changes in data quality and international comparability?

2. Core Recommendations of the Manual

Some core recommendations call for implementation of pre-existing standards. The core recommendations of the Manual, which are *new*, may be summarised as follows:

a. to collect trade in services data in the balance of payments (BOP) context broken down:
    (i) by type of service in the Extended Balance of Payments Services (EBOPS) classification,
    (ii) by partner country;

b. to collect data on Foreign Affiliates Trade in Services (FATS) statistics for basic variables broken down:
    (i) by activity – according to the ISIC Categories for Foreign Affiliates classification (ICFA),
    (ii) by partner country.

A key feature of the Manual is the description of trade in services in terms of four modes of supply following the descriptions in the General Agreement on Trade in Services and in order to clarify how services are actually traded, but statistically this is an area that needs further development.

3. Balance of Payments Services

BOP trade in services data collection is relatively well established and widespread according to the principles and framework of the IMF's fifth Balance of Payments Manual (BPM5). An impressive

and continuing increase in detail by type of service has been noticed since around 1995. The data collection of IMF, OECD and Eurostat is currently being adapted to allow reporting according to the EBOPS classification.

BOP trade in services statistics broken down *by partner country* are disseminated by Eurostat in the "New Cronos" database, and in 2002 OECD published trade in services by partner country data for the first time for 22 countries. OECD plans to publish partner country data for 27 countries in September 2003 with some disaggregation by type of service. These 27 countries' trade in services that can be allocated by partner country accounts for around 75 per cent of world trade in services (see Table 1). A partial picture of the majority of the remaining 25% of world trade in services emerges if *mirror* data are used to estimate missing values. For example the author is unaware of any partner country data for exports of trade in services by any African country. Nonetheless if reported imports of services from Africa by the 27 countries, that report partner country data, are examined about three-quarters of Africa's reported service exports can be accounted for in terms of reported bilateral flows. The accuracy of these *mirror* data as a substitute for reported data is evidently uncertain.

Table 1 – Coverage of reported service exports (BOP) in partner country data

Exporting region	Total service exports 2001 (billion US$)	Total available export data by partner country, as % of total exports	
		Reported data	Reported data supplemented with *mirror* data
World	1,494	75	92
Africa	32	0	77
America	370	84	99
Asia and Oceania	333	42	74
Europe	757	88	97
OECD	1,165	94	98

Sources: OECD, IMF

4. Foreign Affiliates Trade in Services

Compared with trade in services in the balance of payments, foreign affiliates trade in services statistics are relatively undeveloped. But data collection and dissemination of FATS statistics are growing at Eurostat, OECD and UNCTAD fuelled by the growth in national activity in this area.

The OECD FATS database covers, in principle, the economic activity (for turnover, employment, value added, exports and imports) of foreign affiliates in the services sector related to OECD member countries by activity and by partner country. Both inward and outward FATS statistics are requested. Not all these requested data can be provided by countries but about 20 countries provide some of these. OECD published FATS statistics for the *first time* in 2002, based on two surveys conducted in 1998 and 1999. The 2003 OECD survey is expected to yield information from a larger number of countries. It should be noted that OECD does not yet collect FATS by activity data according to the ISIC categories for foreign affiliates, as recommended in the Manual. Table 2 sets out in very summary fashion the reporting to OECD of trade in services statistics according to the Extended Balance of Payments Services (EBOPS) classification, as well as inward and outward FATS statistics.

Table 2 – Current Situation of OECD Member Countries Reporting of EBOPS and
         FATS statistics

Country	Number of EBOPS components reported	FATS inward	FATS outward
Australia	48	No (but planned 2004)	No (but planned end 2003)
Austria	22	Yes	Yes
Belgium-Luxembourg	62	-	-
Belgium	-	Yes	Yes
Luxembourg	-	Yes	No
Canada	45	No	Yes
Czech Republic	75	Yes	No
Denmark	4	Yes	No
Finland	52	Yes	Yes
France	47	Yes	Yes
Germany	58	Yes	Yes
Greece	55	No	Yes
Hungary	20	Yes	No
Iceland	26	No	No
Ireland	41	Yes	No
Italy	62	Yes	No
Japan	25	Yes	Yes
Korea	16	No	No
Mexico	304	No	No
Netherlands	44	Yes	No
New Zealand	29	No	No
Norway	56	Yes	No
Poland	62	Yes	No
Portugal	68	Yes	Yes
Slovak Republic	31	No	No
Spain	53	No	No
Sweden	58	Yes	Yes
Switzerland	10	No	No
Turkey	20	Yes	No
UK	46	Yes	No
USA	52	Yes	Yes

Sources:
i) "OECD Statistics on International Trade in Services 1992-2001".
ii) "Measuring Globalisation: The Role of Multinationals in OECD Economies Volume II Services" and OECD Foreign Affiliates Trade in Services Database.

5. Assessing Data Quality

Given that measurement of trade in services is more difficult than measurement of trade in goods, how can we assess data quality? In principle, the exports declared by one country should be approximately equal to the imports declared by the partner country. Although in a few cases, for example merchanting services in the BOP, there are inherent asymmetries between treatment of imports and exports of services. Bilateral asymmetries exhibited in mirror statistics and global imbalances, between exports and imports of particular services, can provide an indication of international comparability of data and allow this to be tracked over time. Some examples of bilateral asymmetries in BOP trade in services between EU, US and Japan in 2001 are shown in Table 3.

    A second tool that has proved useful in other areas, for example with foreign direct investment statistics, is a methodological soundness questionnaire. OECD-Eurostat have together launched such a questionnaire (for BOP trade in services) in 2003. This should provide comparable information on the statistical methods, data sources and their coverage that are used in compiling trade-in-services statistics in their various member countries.

    It is clear from existing bilateral partner country data, global imbalances, and information on the variety of data sources used by countries that data quality and comparability are and will be important concerns.

Table 3 – Selected examples of bilateral BOP trade-in-services asymmetries

Exporting country with partner	Total services ($bn)		Asymmetry Coefficient
	Exports 2001 (X)	Mirror imports 2001 (mM)	(X-mM)/((X+mM)/2)
EU to Japan	15.8	20.9	-0.28
EU to US	108.1	73.7	0.38
Japan to EU	13.1	10.0	0.27
Japan to US	20.6	18.6	0.10
US to EU	88.7	109.8	-0.21
US to Japan	31.3	35.4	-0.12

6. What Next?

Future work of the participating agencies to implement the recommendations of the Manual will include:
- more guidance on compilation of trade-in-services statistics;
- more focus on the needs of developing countries;
- widening coordinated international data collection by the agencies on trade-in-services statistics;
- more emphasis on the estimation of the relative importance of the various modes of supply of services, including the difficult issue of how to measure mode 4 trade (presence of natural persons);
- data quality monitoring and feedback,
- participation in the IMF's revision of the Balance of Payments manual concerning services trade.

7. Conclusions

On the criteria suggested above, important progress is being made in implementing the core recommendations of the Manual. Much, but certainly not all, of this is occurring in OECD countries. Some important progress is already being made in reporting of BOP services; on FATS and in both cases with partner country data. The monitoring tools described above on country reporting and data quality will be essential in highlighting priorities for further work and improvement. For the trade negotiations there is a need to focus more on developing country perspectives including measurement of mode 4 trade in services.

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Abstract

Although only published very recently, pressures from data users are helping to ensure that progress in implementing the Manual on Statistics of International Trade in Services is monitored. A tool set for assessing progress is outlined. Important progress is being made in implementing the core recommendations of the Manual. Much, but certainly not all, of the current progress is occurring among OECD countries. Important

progress is being made on BOP services; on FATS and in both cases with partner country data. The monitoring tools described above on country reporting and data quality will be essential in highlighting priorities for further improvement.

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TRADE IN SERVICES

Travel in Balance of Payments Statistics

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1. Introduction

As part of the international economic relations statistics, the Croatian National Bank (CNB) is responsible for the Balance of Payments (BOP) Statistics. The BOP statistics are based on official data sources (like those from the Croatian Bureau of Statistics (CBS)) and data compiled inside the CNB (from the International Transactions Reporting System (ITRS), specialised statistical surveys, data on reserves assets etc.). Having in mind the importance of tourism for Croatia, the CNB in co-operation with other agencies conduct the Survey on expenditures of foreign tourists in Croatia and Croatian travellers abroad (the Survey).

This text concentrates on the Survey methodology and data sources used for the estimation of travel revenues in the BOP. Concepts and definitions on which the Survey is based are presented in the first part of the text that is followed by an overview of the methodology of the Survey. After that, the Survey sample and allocation to stratums are defined. Finally, the text concludes with the identification of problems and possible solutions that should be applied in the following years.

2. International guidelines

Eurostat defines a traveller as a person travelling to a place other than that of his/her usual environment for less than twelve consecutive months and whose main purpose of travel is other than the exercise of an activity remunerated from within the place visited. An international traveller travels outside his/her country of residence. A tourist is a visitor who stays at least one night in an accommodation, while same-day visitors do not spend any night in the country visited.

It is defined in the EC and Eurostat manual that in order to gather accurate data needed for the estimation of travel revenues/expenses, the population of travellers should be divided into homogenous groups with similar characteristics (country of residence, way of travel etc.). These groups are called stratums, so surveys on travellers should be based on stratified samples. Besides simple stratified sampling, systematic or even multistage stratified sampling can be used.

According to the IMF, all travellers expenditures made during travel should be regarded as travel-related, even if a traveller buys a car and drives it back home. Only goods purchased in places of travel, as gifts to residents of the country of travel, should be reclassified to the goods account.

BOP standard components separately treat business and personal travel, the later divided into education, health-related, and other personal travel. It is obvious that this distribution is based on the motives of travel.

3. The concept of the Survey

Prior to the introduction of the Survey, there were no data sources that were able to cover travel expenditure during the whole year, or that covered all tourists that spent a night in Croatia. Furthermore, same-day travellers were completely left out from the official data sources, as well as foreign tourists that stayed in their own vacation houses or non-commercial accommodation (mostly with friends and relatives).

In order to overcome this problem and to follow international guidelines for the BOP statistics (primarily the IMF Balance of Payments Manual, 5th Edition), the CNB tried to estimate travel revenues and expenses by combining various data sources (the ITRS data on inflows and outflows of foreign currencies, data on tolls paid in foreign currencies, average expenditures from the TOMAS survey, the number of arrivals and overnights in hotels, motels, camps etc., according to the CBS and some other data sources). After the military actions that ended the occupation of some parts of our country, due to large inflows of foreign currencies into the banks that were reflected in the ITRS this methodology was abandoned. When the CNB made the decision that the coverage of travel in the BOP must be improved, the first thing to do was to contact the CBS and ask for help in conducting a new comprehensive survey. Unfortunately, the CBS failed to meet our needs, so the CNB turned to the Croatian Institute for Tourism (CIT).

The general idea was to survey a sample of foreign travellers when leaving Croatia and esti-mate their total expenses that cover expenditures for accommodation, food, souvenirs, excursions, communication, part of transportation costs, etc. We have concentrated on the coverage of road and air border-crossings (first stage of stratification) because travellers that enter Croatia by plane or road vehicles are the most important for our estimates.

A major problem is how to conduct such a survey on more then 90 border-crossings with a lim-ited amount of money and time and not to cause even worse traffic jams that are so usual during the summer season. The solution is to try to group them into homogenous groups that should cover tourists with an expected low variance in terms of average expenses because we expect more or less similar behaviour for tourists from a specific country. The number of arrivals in commercial accommodation according to the CBS data for 2002 (table 1) show that the majority of foreign travellers in Croatia are residents of 7 European countries, so we have tried to organise bor-der-crossings in a way that enables us to successfully identify and gather separate data from travel-lers who are residents of these 7 countries, as well as from other travellers (2nd stage of stratifica-tion).

Table 1 – Number of arrivals in commercial accommodation in 2002 (CBS data)

Country	No. of arrivals
Austria	690,366
Czech Republic	697,902
Italy	1,099,427
Hungary	318,015
Germany	1,481,659
Poland	358,065
Slovenia	869,900
Other European countries	1,291,184
Other countries	137,827
TOTAL	6,944,345

Most travellers from the EU enter Croatia from Slovenia or Italy. On the other hand, Hungarians or Bosnians will cross the frontier on different border-crossings. During the last few years (1998-2002), road border-crossings were grouped according to geographical criteria: there were five groups of road border-crossing to Slovenia, two to Bosnia and Herzegovina, one to Hungary, one to Serbia and Montenegro. Airports are separately grouped. Following the first and the second stage of stratification, other types of border-crossings, namely sea and rail, are represented by the results of the survey for a specific road group, depending on the country to which they relate.

Based on daily data from the Ministry of internal affairs (MUP), it is possible to identify the most frequent border-crossings in terms of number of visitors and vehicles (separate data for trucks, buses and cars). Unfortunately, the structure of them according to the country of residency is unknown: MUP reports do not separately treat travellers or vehicles from Germany, Italy or Ro-mania, to name a few. Figure 1 shows the distribution of the number of arrivals of foreign tourists and same-day travellers between 10 groups of border-crossings for 2002.

Further analysis of MUP data revealed that crossings in weekends and holidays are much more fre-quent then on working days. Groups were further divided according to the type of day (3rd stage of stratification), so we ended up with the minimum number of 10 times 2 subgroups for each month.

Figure 1 – Number of arrivals of foreign visitors in 2002 (MUP data)
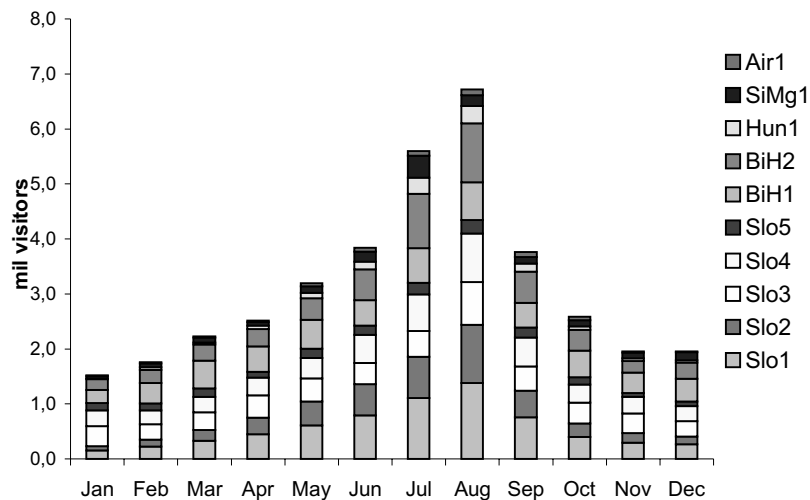
Beside the three criteria explained so far, the structure of expenses depends on several other important determinants that can help in stratification: (1) type of accommodation (paid, unpaid, transit); (2) reason of travel (business, education, health-related, or other personal); and (3) length of stay. However, these are not applied because usable supplementary data sources that can help in the identification of needed distributions for population of foreign travellers simply do not exist. We will shortly illustrate this problem with the type of accommodation.

Legal entities and households who are registered as providers of commercial accommodation provide data on the number of tourists and overnights for tourists who spent at least one night in commercial accommodation. Based on this, the CBS derives aggregate monthly reports with a breakdown by countries, type of accommodation and Croatian counties, but the problem is that some tourists appear more then once in these reports, because if they spend a night in one place, and three in another, the official statistics will count two arrivals.

Furthermore, foreign tourists who spent at least one night in their own vacation houses or with resident friends or relatives must be treated as a special group because their expenses are not similar to the previous group. The number of these tourists is still unknown to the official statistics.

Same-day visitors are a third group of travellers, whose average expenditure should be lowest, so this group's influence on the BOP may not be of great importance. Like the one before, the number of these travellers is unknown.

Other distributions of foreign travellers (reason of travel and length of stay) are part of the same black box because there are no data sources that can be used to derive all figures for the population, so the only way to solve this was to design a survey that will include various indicators which will be combined with the only usable data source, MUP.

4. The methodology of the Survey

Each group of border-crossings is represented by one, most frequent of them, on which the Survey is conducted each month. It is defined that travellers on each representative border-crossing must be surveyed at least three times during the month, but not more than fifteen times. The number of days ($d_{m,j}$) is actually a function of the number of foreign travellers ($N_{m,j}$) on a representative j during the previous year (t-1) relative to its lowest frequency in the same year ($N_{k,j}$). Also, to minimise the influence of possible large oscillations on a certain representative, its relative importance (w_j) in the total number of foreign travellers during the same year is also taken into consideration:

$$(1)\ d_{m,j} = f(N_{m(t-1),j}, N_{k(t-1),j}, w_j), \qquad d_{m,j} \in [3,15]$$

The daily frequency of a number of travellers during the previous year and a value of $d_{m,j}$ define which days will be surveyed in a particular month.

The definition of $d_{m,j}$ gives a better coverage of travellers during the summer season. The number of travellers that should be surveyed can not be less then 50 for each survey day and each repre-

sentative (the CNB and the CIT arbitrary decision), so if we multiply 50 by the sum of $d_{m,j}$, we will get the total number of travellers that should be surveyed during the year. For example, the sample in January 2002. covered 1800 foreign travellers (d_1=36), while during the most frequent August there were 7700 foreign travellers (d_8=154) in the sample (table 2).

Table 2 – Sample size of foreign travellers and monthly number of survey days during 2002

Month	Sample	dmonth
January	1,800	36
February	1,800	36
March	2,100	42
April	2,650	53
May	3,400	68
June	4,050	81
July	6,600	132
August	7,700	154
September	4,100	82
October	2,600	52
November	1,950	39
December	2,000	40
TOTAL	40,750	815

The Survey form is designed to collect data about total expenses in Croatia, country of residence, way of travel (plane, car, bus, truck), motive, length of stay and accommodation (paid or unpaid)[1]. Based on these answers, we are able to produce various reports on an aggregate or detailed level (i.e. total expenses of Italians in Croatia, or expenses of Austrians who arrived by plane and stayed in hotels in Dubrovnik County for at least 3 nights).

Following the three-stage stratification outlined in the previous part, a systematic stratified sample is used. Each stratum is based on type of border crossing and type of day (working or weekend). For each month (m), each answer j about total expenses ($c_{m,i,j}$) is classified in stratum (there are L_m stratums) and weighted by the ratio of total ($N_{m,i}$) and surveyed ($n_{m,i}$) number of visitors in the stratum i. Aggregate monthly expenditure equals the sum of the stratum's expenditure, while average monthly expenditure ($\overline{C}_m$) is a fraction of total expenditures and the number of foreign visitors in the month:

$$(2)\ \overline{C}_m = \frac{\sum_{i=1}^{L_m} \sum_{j=1}^{n_i} \frac{N_{m,i}}{n_{m,i}} * c_{m,i,j}}{\sum_{i=1}^{L_m} N_{m,i}}$$

The total number of visitors in a stratum is derived from MUP's reports on the daily number of foreign travellers leaving Croatia.

5. Problems with the methodology

We have identified four major problems: (1) different numbers of nights spent in commercial accommodation recorded by the CBS and the Survey, (2) problems with the homogeneity of groups of border-crossings, (3) accuracy of MUP's data and (4) unknown structure of foreign travellers.

(1) The number of nights in commercial accommodations (hotels, motels, camps etc.) according to the official CBS data and the number of nights in the same accommodations from the Survey results are different (CBS's number is a few times lower). Fortunately, it is possible to identify the distribution by countries and type of accommodation in the official data, so by combining the "appropriate" selection of the questionnaires with the official number of overnights (breakdown by countries), we were able to compare the estimated average expenditure and standard deviations.

The first step in this analysis was to identify a group of "appropriate" questionnaires for foreign tourists who have spent at least one night in a commercial accommodation. After that, three different sets of weights were constructed using (a) MUP data, (b) a combination of MUP data and the Survey data and (c) CBS data.

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1 *There are some other questions on 2003. survey forms, but these are less important for our analysis.*

Average expenditure (c_MUP) and standard deviation (stdev_MUP) were calculated using MUP data combined with the structure of foreign travellers from the Survey results for construction of weights. The second step was to calculate similar estimates (c_ANK and stdev _ANK) using the average number of passengers in a vehicle and a number of vehicles according to MUP supplemented with data for other means of transportation. Finally, weights were constructed using the CBS distribution of the number of arrivals in commercial accommodation and combined with the same selection of questionnaires (c_DZS and stdev _DZS).

Large differences between average expenditures, together with changing maximum variance proved that the choice of weights has a large effect on our estimates. It was obvious that we have serious problem because the survey results are completely different if we use weights based on data sources that should be very similar (figure 2).

Figure 2 – Impact of weights on average expenditure and its standard deviation
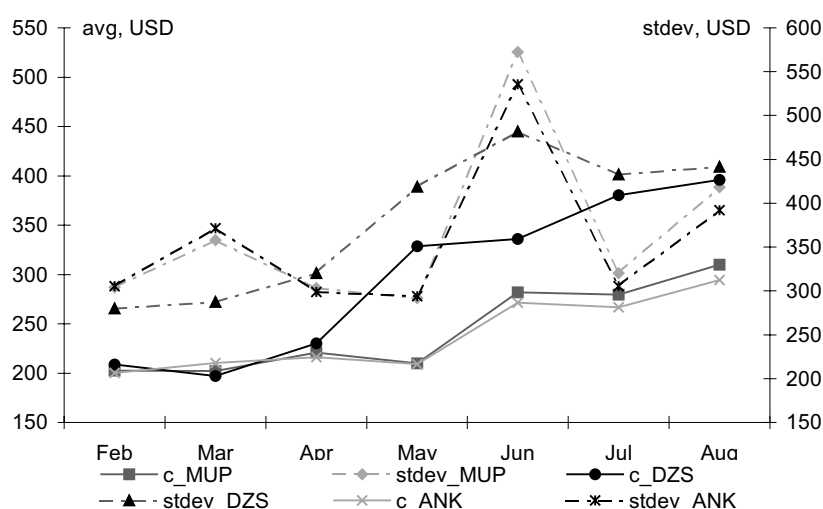
(2) We also questioned the homogeneity of border-crossings groups. During 2001 and 2002, three times a year estimated revenues for each group's road representative are checked with second largest road border crossing and data from rail and seaports. As a result, we were faced with different estimates of expenditure and a different structure (country, motive, accommodation etc.) for border-crossings from the same group, so we have concluded that groups have not been as homogenous as we wanted them to be.

(3) In addition, we have found unexplained differences in the monthly number of travellers entering Croatia by comparing neighbouring country data on the number of passengers leaving that country with mirror MUP's data. Slovenian statistical office, for example, records a number of travellers leaving Slovenia and entering Croatia that is 40% lower or 30% higher then those of the CBS, depending on the month and the year. Also, according to MUP, there is a significant number of foreign tourists that failed to leave Croatia during the last year (table 3).

Table 3 – Number of foreign travellers entering and leaving Croatia in 2002 (MUP)

Month	Arrivals	Exits	Net
January	2.1	2.0	0.1
February	2.0	1.9	0.1
March	2.7	2.4	0.3
April	2.9	2.9	0.2
May	3.7	3.4	0.2
June	4.5	4.1	0.4
July	6.6	6.6	0.6
August	7.2	7.1	0.1
September	3.8	4.0	-0.2
October	3.0	2.9	0.1
November	2.5	2.4	0.1
December	2.5	2.4	0.1
TOTAL	43.5	41.5	

In order to overcome these problems, the CNB tried to alternatively estimate the number of foreign travellers during 2002. For each type of road vehicle (car, bus or truck), it was a product of the number of foreign-plated vehicles and the average number of passengers in the vehicle according to the Survey data. These estimates (met2), combined with MUP's data for travellers who arrived by train, ship or plane, are a bit lower then those of the original methodology, met1 (figure 3).

Figure 3 – Revenues from foreign travellers in 2002
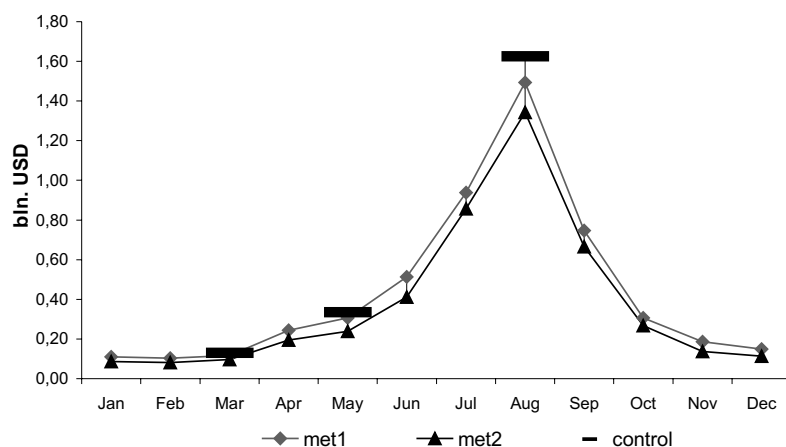
(4) Finally, the unknown structure of foreign travellers was estimated from the Survey results. This approximation lowers the quality of our estimates because it depends on segment of surveyed travellers, but as already noted the Survey is the only available indicator of this structure.

6. Methodological improvements in 2003

During 2003, the CNB in cooperation with agency that conducts the Survey introduced some methodological innovations that should improve the quality of estimates and help in better identification of the structure of foreign travellers.

Partial counting of foreign-plated vehicles, broken down by countries, should solve the problem of the different number of travellers leaving neighbouring countries and entering Croatia. Also, this should be a solution for improvements in the identification of the structure of foreign travellers because we will get supplemental reports with a breakdown by countries.

Homogeneity of the stratums should be improved by parallel coverage of several representative border-crossings for most frequent stratums. As a result, it is possible that there will be more stratums in the future (each of the present stratums will be divided according to the breakdown of foreign travellers by countries).

In addition to the short-term goals, we will continue to seek for reasons that lead to significant differences between the CBS data on nights spent in commercial accommodations and the Survey results.

7. Conclusion

In this paper, Croatia's efforts in estimating travel revenues in the BOP have been described. Estimation based on ITRS and some other data sources was replaced with the Survey since the beginning of 1999. The Survey's concepts and methodology are based on international standards and statistical theory on stratified samples. Due to problems that have crystallised in previous years, the CNB tried to identify their main reasons and has introduced some methodological improvements like control surveys, partial counting of foreign vehicles, and parallel coverage of several representatives from the same group. In the future, these innovations should improve the quality of travel estimates and overall BOP.

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Résumé

Dans cet article on présente la méthodologie et des problèmes d'estimation des revenues enregistrés dans la balance des paiements sous "voyages". On identifie des problèmes de groupement des passages routières de la frontière, de choix des représentants des groupes, les différences entre les nombres officiels des touristes et les résultats de l'enquête. On a introduit une nouvelle méthode selon laquelle on a augmenté le nombre des représentants de chaque groupe pour contrôler les groupes qui existent déjà et pour créer des nouvelles groupes. La numération de contrôle de la circulation rendra possible une meilleure estimation de la structure des touristes selon les pays d'origines.

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<u>TRADE IN SERVICES</u>

Multidimensional insights on Italy's outbound business travel

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1. Introduction[2]

This paper analyses Italy's outbound business travel, which is defined as the economic and social phenomenon constituted by the activities of Italian residents travelling abroad for professional reasons.

Considering both the business and non-business segment, the dimension of outgoing travel has significantly increased in Italy over the last two decades. The expenditure of Italian travellers abroad, which remained constantly around the level of 0.5% of country's GDP in the period 1970-1985, sharply increased in following years, reaching a level around 1.5% of GDP. Among the factors that supported this fast growth, a relevant role was played by the lift of exchange controls, completed in the second half of the 80s, the deregulation of air transport and the consequent reduction of average fares, a general spread of a positive attitude towards international travelling.

Business travel is an essential component of Italy's outbound travel, both in monetary and in physical terms. In 2001 the expenditures carried out by residents travelling for professional reasons accounted for 41% of the total outbound travel expenditure. In physical terms, 31% of residents who travelled abroad in the same year, undertook the trips for professional reasons.

Business travel is considered a strategic segment. It is characterised by some positive features, the most relevant of which are:

1. the average daily per capita expenditure of a business traveller is generally significantly larger than that of leisure travellers. This gives rise to a more intense impact on the economy visited for a given level of exploitation of the resources (infrastructures, environment, etc.) and more opportunities to generate value added.

2. the seasonal pattern of business travel is clearly opposed to that of personal travel: the former slows down in summer and during weekends, when the latter is at its maximum. This complementarity implies that an appropriate mix of business and non-business travel is essential to ensure an optimal utilisation of tourist fixed assets (accommodation establishments, carriers, travel agencies, etc.).

Nevertheless, the number of studies on business travel is less than proportional to the relative size of the segment. Partially as a consequence of the reduced attention of researchers to the subject, the elaboration of a theoretical paradigm is less progressed in the business travel area than in other areas of tourism demand.

2. Objectives and method of the study

The objective of this paper is to contribute with a study on Italy's outbound business travel, an area of the tourism sector that is still relatively neglected by researchers, compared to its magnitude.

As far as the method of the study is concerned, three points are essential:

a) The recognition of the lack of an acceptable theoretical paradigm, i.e. the practical unavailability of a model to test, led to the decision to use descriptive / exploratory tools rather than explanatory tools.

b) One of the basic assumptions is that business travel is not homogeneous, as motivations, expenditure patterns and behaviours differ from one sub-segment of the market to the other. A multi-factor feature of the phenomenon is, therefore, also assumed: it suggested the adoption of multidimensional approaches.

c) Consequently, the feasibility of the study relies on the availability of relevant and highly disaggregated data. The source of data is constituted by the results of the Italian border survey on international tourism. This extensive survey is carried out by the Ufficio Italiano dei Cambi (UIC) on a continuous basis through around 150,000 annual face-to-face interviews of a representative sample of both residents travelling abroad and non-residents travelling in Italy. This database allows an in-depth investigation, thanks to the availability of a large number of observations (around 900,000 face-to-face interviews from the start of the survey in 1996 until the end of 2001) on numerous qualitative and quantitative attributes, analytically describing the characteristics of travellers and their behaviour.

The study consists of two parts, both addressing the common objective of an exploratory and multidimensional analysis of Italy's outbound business travel market, but relying on two different statistical tools and approaches. The reiteration of the analysis with different methods allows, through the cross-comparison of results, to point out the findings that appear more stable.

The specific objective of the first part is the identification of the essential features of the phenomenon. This is carried out by highlighting the most relevant relationships between the attributes describing travellers' characteristics (e.g. sex, age, profession) and behaviour (e.g. length of stay, accommodation used, countries visited, Italian area of origin, level of expenditure). The microdata drawn from the border survey are used as the input of a multiple correspondence analysis, whose main outcome is a low-dimensional graphical representation of the large number of qualitative and quantitative attributes available in the UIC database.

The second part aims at identifying homogeneous groups of travellers according to the countries of destination. To this end, hierarchical clustering analysis is used. Following a strategy commonly followed with this type of statistical methods, various aggregation criteria are implemented in order to verify the robustness of the results.

The two approaches are generally classified in a common and specific category of statistical techniques, named data analysis. In the case of economics and other social sciences, data analysis methods realise a reduction of the complexity, through the elaboration of a synthesis.

The methods consist in a process of extraction, from a data matrix representing the phenomenon under investigation, of the main dimensions, structures of associations, relationships of proximity / opposition among the variables.

3. Application of multiple correspondence analysis

In investigating a given phenomenon, researchers very often treat data in the form of a two-dimension matrix, in which rows represent the investigation units (or observations) and columns represent the qualitative variables (or attributes) observed on the investigation units. Qualitative, rather than quantitative variables (that can be transformed into variables of the first type, by converting continuous or discrete values into classes) are indicated here to generalise the applicability of this data structure.

Multiple correspondence analysis (MCA), which is an extension of (simple) correspondence analysis (CA) to the case of three or more attributes, was introduced with the specific objective of tackling the problem of the exploration of the relationships "hidden" in such data matrices. The purpose of MCA is in fact essentially that of allowing a simultaneous view on a set I of observations and/or a set J of attributes. In other words, the approach aims at putting in geometric form the system of relationships existing:

a) among the elements of one set (I) and the elements of the other set (J)
   and / or

b) among the elements of set I
   and / or

c) among the elements of set J.

In this study, as frequently happens in concrete applications, objective c) is only pursued. In fact, in the present case the goal is to find out relationships among attributes rather than among the individual travellers (the investigation units) included in the sample data.

MCA allows a peculiar way of "reading" data matrices, consisting in providing a global, rather than punctual, insight of the data, i.e. an exploratory synthesis about the essential characteristics of the phenomenon under investigation. Depending on the purpose of the investigation, this may either conclude the task of the researcher or constitute the basis for subsequent analysis, possibly based on statistical approaches of different nature, e.g. through methods aiming at the verification of the fit to a given theoretical model, such as regression analysis.

The input data set contains analytical data from the UIC sample survey at borders. It consists of 114,049 observations (interviews) on resident outbound business travellers, carried out during the five-year period 1997-2001. After grossing-up, the observations refer to a population of 70,261,000 travellers. The 15 attributes considered form a total of 85 categories, which are listed in Table 1:

Table 1 – Attributes and categories in the input data

Attribute	Category
Quarter of the year	Qtr1 • Qtr2 • Qtr3 • Qtr4
Sex of interviewee	Female • Male
Age of interviewee	Age 15-24 • Age 25-34 • Age 35-44 • Age 45-64
Profession of interviewee	Employed (subordinate) • Self-employed
Type of business travel	Business-Other • Congresses, conventions • Seasonal/border workers
Mode of transport	Air • Rail • Road • Sea
Italian area of origin	North-West • North-East • Center • South and Isles
Destination country	Africa-Oth. • America-Oth. • Asia-Oth. • Austria • Belgium • Brazil • Canada • China • Croatia • Denmark • Europe-EU-Oth. • Europe-Extra-EU-Oth. • France • Germany • Greece • Hungary • India • Japan • Netherlands • Oceania-Total • Poland • Portugal • Romania • Russia • Spain • State not classified • Sweden • Switzerland • Tunisia • Turkey • UK • USA
Length of stay	0 nights • 1-3 nights • 4-7 nights • 8-14 nights • 15-28 nights • 29-91 nights • 92+ nights
Type of accommodation used	Community • Guest of relatives/friends • Hotel, tourist village • Motor caravan, camper • Owned dwelling • Rented dwelling • Ship (cruise) • Tent, caravan • Youth hostel • Other accommodation • None (no overnight stay)
Number of countries visited in the same trip	More destinations • One destination
Use of advance payments	Advance payments • No advance payments
Use of all inclusive package	All inclusive • Not all inclusive
Level of per capita expenditure	Low per cap. exp. • Medium per cap. exp. • High per cap. exp.
Level of daily per capita expenditure	Low daily exp. • Medium daily exp. • High daily exp.

The two attributes related to expenditure, i.e. "Level of per capita expenditure" and "Level of daily per capita expenditure", were created by transforming the original quantitative variables into classes. In particular, the range of variation of the variables was divided in three parts, using the criteria of having classes with same frequency. Table 2 shows the expenditure ranges corresponding to each class/category. The expenditure follows the balance of payments concepts, to which the UIC survey is targeted. Therefore, it includes expenses carried out by travellers in relation to the journey abroad for nearly any type of goods and services (accommodation, meals, articles bought in shops, etc.), paid before and during the trip, but excluding international transport fares.[1]

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1   *For details on the content of "Travel" expenditure see International Monetary Fund (1993).*

Table 2 – Ranges used for the conversion of per capita and daily per capita expenditure into classes

Level of per capita expenditure	Low per cap. exp. Medium per cap. exp. High per cap. exp.	Less than 465 euros 465 – 1402 euros More than 1402 euros
Level of daily per capita expenditure	Low daily exp. Medium daily exp. High daily exp.	Less than 39 euros 39 – 140 euros More than 140 euros

We then start the analysis of the MCA output by looking at the inertia explained by each dimension (Table 3). With MCA, the maximum number of dimensions is given by c-k, where c is the number of the columns (categories) of the binary matrix and k is the number of attributes: in our case it is 85 – 15 = 70. Table 3 only reports 29 dimensions because of the use of the method of adjustment of the inertia of factors proposed in Benzécri (1979) in order to take into account the distinctive features of MCA compared to CA.

The adjusted inertia appears to be strongly concentrated on factor 1, which takes into account by itself 87.8% of the total. This indicates that the association between categories is almost one-dimensional. The first two factors explain together 93.9% of the variability of the phenomenon. This suggests to limit the analysis to these two dimensions, as the first factor plane will represent most of the variability and, consequently, will allow a good approximation of the real spatial relationships between points.

In order to interpret the nature of these two dimensions, we first find out the categories that contribute most to the inertia of the factors. An abstract of the full list of indicators that aid the interpretation, tailored to the specific need of interpreting the character of factors, is reported in Table 4 and Table 5. They show, respectively, for dimension 1 and dimension 2 the ten categories with the largest partial contributions, along with the signs of their co-ordinates on the same dimensions.

From Table 4 we then derive that the direction of axis 1 is mostly determined by the opposition of two groups of travellers, characterised by one or more of the following characteristics:
- on the negative side, people who do not spend the night in the country visited (excursionists), visiting Switzerland, with a low daily per capita expenditure;
- on the positive side, people travelling by air, paying part of their expenses in advance to the journey, staying in hotels, with a medium-high level of expenditure.

It seems therefore that dimension 1 essentially opposes excursionists to high-spenders / overnight visitors.

Table 5 suggests that factor 2 is mainly created by the opposition of the following two other groups of travellers:
- on the negative side of the axis, people who stay abroad for a relatively short period (1-3 nights), coming from the North-East of Italy, using "Other accommodation" (in many cases a dwelling offered for free by a firm abroad) and visiting Germany and Austria;
- on the positive side of the axis, people with a high expenditure per person, travelling by air, visiting the United States, staying abroad for a relatively long period (29-91 nights), of female sex.

Hence, dimension 2 seems to oppose, in the sub-segment of overnight stays, short to long distance/duration trips. However, some justifications are required to explain the presence of the categories "North-East", "Other accommodation" and "Female". In the case of the first two categories the explanation of their crucial location on the negative part of dimension 2 comes from the association of these categories with short stays (1-3 nights).[1] The relevant influence of "Female" on the positive side is instead explained by the higher average length of stay for women, in the segment of overnight visitors (15.3 nights, against 10.1 for men).

On the basis of this first hints we proceed with the analysis by looking at Figure 1, that shows the plot of the point-categories on the first factor plane, in order to pursue the interpretation of dimensions and the understanding of the overall structure of the cloud of points. To this end, the basic plot generated by the MCA algorithm has been integrated with two additional graphical aids, as it is illustrated in the following.

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1 *The analysis of input data, i.e. the crosstabulation of the attributes 'Italian area of origin' and 'Length of stay' indicates that people coming from the North-East spend 1-3 nights abroad in 35.1% of the cases, against an average of 20.7%. Similarly, the crosstabulation of the attributes 'Type of accommodation' and 'Length of stay' indicates that people using 'Other accommodation' stay there for 1-3 nights in 66.3% of the cases.*

Table 3 – Inertia explained by each factor

Dim	Inertia	Adjusted Inertia (*)	Cumulative percent	Percent
1	0.37758	0.11097	87.8	87.8
2	0.14868	0.00772	6.11	93.91
3	0.12116	0.00341	2.7	96.61
4	0.10293	0.00151	1.19	97.8
5	0.09642	0.00102	0.8	98.61
6	0.09069	0.00066	0.52	99.13
7	0.08368	0.00033	0.26	99.39
8	0.08202	0.00027	0.21	99.61
9	0.07852	0.00016	0.13	99.74
10	0.07573	0.00009	0.07	99.81
11	0.07436	0.00007	0.05	99.86
12	0.07238	0.00004	0.03	99.89
13	0.07213	0.00003	0.03	99.92
14	0.0716	0.00003	0.02	99.94
15	0.07121	0.00002	0.02	99.96
16	0.07043	0.00002	0.01	99.97
17	0.06984	0.00001	0.01	99.98
18	0.06942	0.00001	0.01	99.99
19	0.06855	0	0	99.99
20	0.06835	0	0	100
21	0.06794	0	0	100
22	0.06785	0	0	100
23	0.06755	0	0	100
24	0.06733	0	0	100
25	0.06705	0	0	100
26	0.06703	0	0	100
27	0.06692	0	0	100
28	0.06687	0	0	100
29	0.06682	0	0	100
	Total	0.12639	100	

(*) Inertia adjusted according to the method proposed by J. P. Benzécri; see Benzécri (1979).

Table 4 – Categories with the largest partial contribution to dimension 1. Partial contributions of the points and signs of their coordinates on the dimension

Category	Partial contribution to dimension 1	Sign of the coordinate of the point on dimension 1
Air	0.0895	+
Advance payments	0.0835	+
0 nights	0.0649	-
None (no overnight stay)	0.0649	-
Hotel, tourist village	0.0645	+
High daily exp.	0.0496	+
Medium per cap. exp.	0.0452	+
Switzerland	0.0407	-
Low daily exp.	0.0388	-
High per cap. exp.	0.0377	+

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Table 5 – Categories with the largest partial contribution to dimension 2. Partial contributions of the points and signs of their coordinates on the dimension

Category	Partial contribution to dimension 2	Sign of the coordinate of the point on dimension 2
1-3 nights	0.1137	-
High per cap. exp.	0.0908	+
North-East	0.0786	-
Other accommodation	0.0785	-
Germany	0.0533	-
Air	0.0434	+
USA	0.0333	+
Austria	0.0315	-
29-91 nights	0.0293	+
Female	0.0271	+

1. The analysis of partial contributions suggested a relevant role of the duration of the stay and of the level of expenditure in the construction of factors. It is therefore helpful to highlight the position of the relevant categories. This is carried out by taking into account the ordinal feature of the attributes "Length of stay", "Level of per capita expenditure" and "Level of daily per capita expenditure", through the "chaining" of the categories, joined with oriented segments (arrows).

2. The overall visual analysis of the projection of the cloud of points on the factor plane suggested the presence of three quite clearly separated areas, named Classes 1-3, which have been highlighted within ellipses. The points near the origin (centroid), i.e. representative of the average behaviour, have been intentionally excluded from the ellipses, as we are mainly interested in categories contributing to the variability (inertia) of the phenomenon.

By first looking at the chaining of attributes we can clearly see that the horizontal axis (dimension 1) separates excursionists, on the left (negative) side, from overnight visitors, on the right (positive) side. The vertical axis (dimension 2) correctly orders the various levels of duration of the stay for overnight trips, from "1-3 nights", at the bottom, to "92+ nights", at the top.

We also notice that factor 1 correctly orders the levels of daily per capita expenditure: "low" on the right, "medium" near the origin and "high" on the left; total per capita expenditure is instead only split in two parts on this axis: "low" on the right side and "medium-high" on the left side. Dimension 2 does not discriminate daily per capita expenditure, whereas this dimension clearly separates the "low-medium", slightly under the origin, from the "high" total per capita expenditure, at the top.

Thus, the analysis of the chaining of the attributes unveils that the two dimensions tend to order the ordinal attributes in a consistent way. It is important to notice that this does not originate from the properties of the method adopted, since input data do not provide information on the inherent ordering of categories. Hence, the correct ordering of trip lengths for overnight trips on the second dimension indicates that the latter "measures" the former variable with a good approximation. Similarly, factor 1 seems a good proxy of daily per capita expenditure.

We can then deepen the analysis of the structure of the cloud of points by looking at the three ellipses we drafted on the factor plane. In the following we will summarise the feature of the corresponding classes. In carrying out the synthesis we will take into account the quality of representation of the points on the plane, focusing on categories with better quality.

Class 1 – It is completely located in the negative part of dimension 1 and around the origin of dimension 2. Consequently, this class can be considered as almost exclusively representative of same-day visits. The analysis of the categories included in the ellipse tells us that the segment includes travellers from the North-West of Italy, with Switzerland and France as the most frequent destinations. The short distance travelled allows to use road means of transport. A low level of expenditure is sufficient for this type of trips and no advance payments is generally required. As expected this pattern often applies to seasonal and border workers. The association of the point "Female" to this class was less foreseeable; actually, the analysis of input data shows that the probability that the business trip is a same-day visit is higher for women (70.3%) than for men (47.3%). Input data tell us that the size of the segment of same-day visits is rather relevant in physical terms, with 51.3% of the total number of travellers, but rather small in economic terms, with only 2.4% of the total expenditure.

Class 2 – It lies mostly in the bottom-right quadrant of the plane, i.e. in the positive part of dimension 1 and in the negative part of dimension 2. As a result, this class represents the segment of

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Figure 1 – Output of multiple correspondence analysis.
First factor plane (horizontal axis = dimension 1, vertical axis = dimension 2)
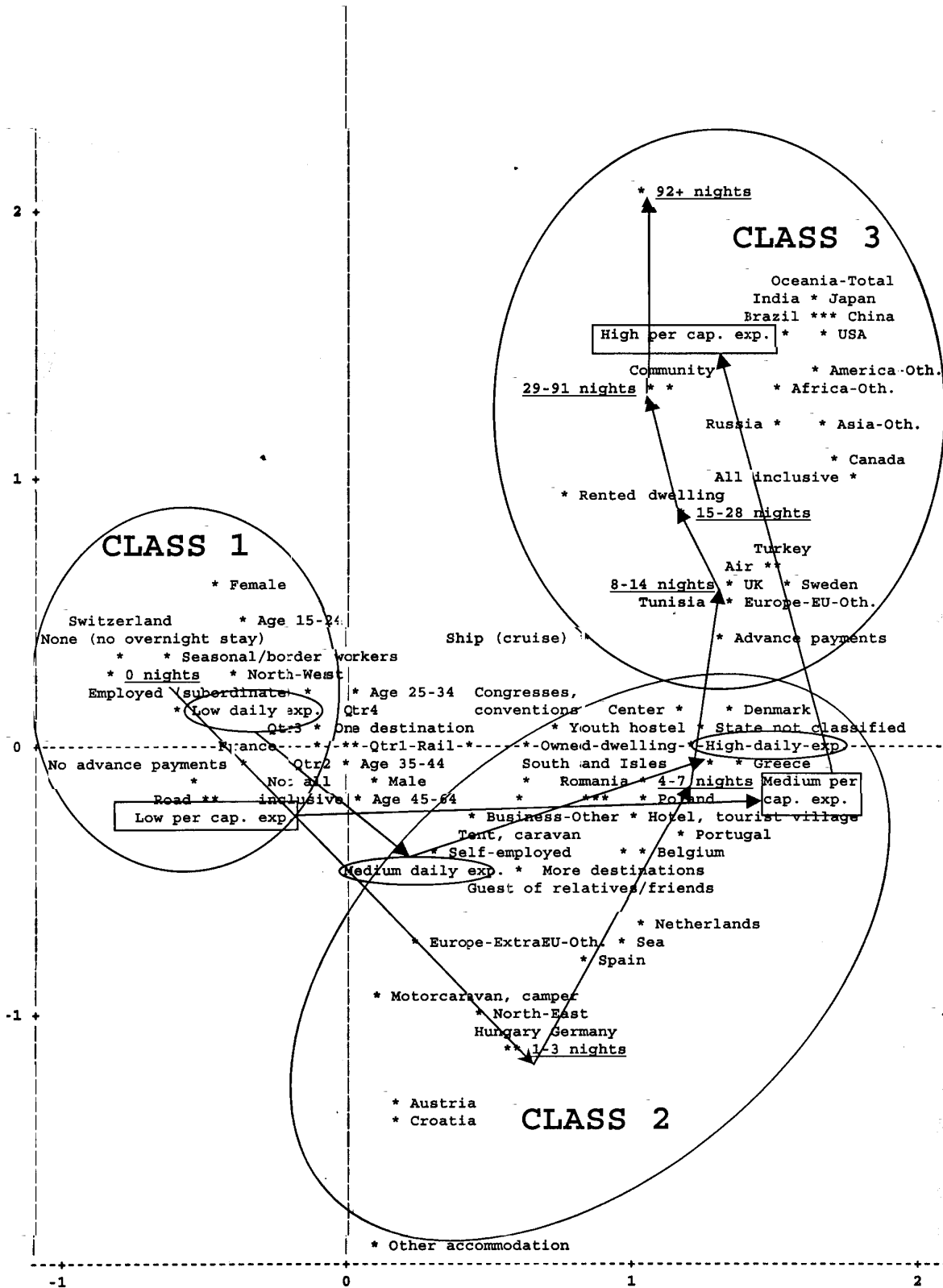
short overnight stays (length of stay is in the range 1-7 nights). It is characterised by a medium-high daily per capita expenditure and a medium total per capita expenditure. Regular business travellers ("Business-other") are a typical category of this class and the type of accommodation used is mostly the hotel. Travellers come from the North-East and, mainly for stays between 4 and 7 nights, from the Centre of Italy. Germany, Austria and most European countries are included

among the most frequent destinations. The size of the segment of short overnight stays (1-7 nights) is rather relevant in physical terms, with 35.2% of the total number of travellers, and even more important in economic terms, with 44.6% of the total expenditure.

Class 3 – It is completely situated in the top-right quadrant of the plane, i.e. in the positive part of both dimensions. As a result, this class represents the segment of long stays (more than 7 nights). Also because of the high average duration of journeys, the total per capita expenditure is here at the top level. Rented dwellings are a typical accommodation for this class. Destinations include mostly non-European countries, with longer stays for farther countries. Air travelling is obviously predominant. The organisation of trips includes advance payments and sometimes, especially for longer trips, the purchase of all inclusive packages. The size of the segment of long overnight stays (8-92+ nights) is not particularly relevant in physical terms, with 13.5% of the total number of travellers, but very important in economic terms, with 53.0% of the total expenditure.

It can be therefore concluded from this part of the analysis that the length of stay is a key variable for the interpretation of Italy's outbound travel market. It has been implicitly demonstrated that the information on this variable on its own, even at the ordinal level (0 nights, 1-7 nights, more than 7 nights), allows to infer with a good approximation the average behavioural pattern of travellers (level of expenditure, destination countries, accommodation used, trip organisation, etc.).

This finding suggested testing whether this feature might be extended to the segment of Italian outbound leisure travel. To this end, MCA was repeated, applying it to the relevant information in the UIC database. The input data, still referred to the period 1997-2001, contained 449,621 observations, corresponding to a population of 73,593,000 travellers, on which the same 15 attributes of previous analysis were defined. MCA on this data showed that the first and the second factor, according to the Benzécri adjusted inertia indicator, accounted also in this case for a big part of total inertia, respectively 76.7% and 7.7%. Figure 2 represents the first factor plane, on which only the point-categories of the attribute "length of stay" are represented. By comparing the path of the categories in this plot with the path of the same categories in the factor plane related to business travellers (Figure 1), we notice a broad similarity. In Figure 2, dimension 1 seems to oppose excursionists to overnight visitors whose length of stay is four or more nights, with category 1-3 nights close to the origin of the axes. However, it can not be neglected that a "linear" ordering of the various categories of duration cannot be found on the plot for stays over 7 nights. In fact, categories "8-14 nights", "15-28 nights", "29-91 nights" and "92+ nights" are close each other (in the top-right quadrant of the plane), indicating that travellers with these lengths of stays have similar behavioural patterns. Hence, the attribute length of stay appears less usable for outbound leisure travellers as a low-dimensional proxy of the overall structure of the phenomenon, since this attribute does not seem able to suggest specific patterns for medium-length journeys on one side and long-length journeys on the other side.

Figure 2 – Output of multiple correspondence analysis on the population of travellers whose purpose of trip is "leisure"
First factor plane (horizontal axis = dimension 1, vertical axis = dimension 2).
Plot of categories of the attribute "length of stay".
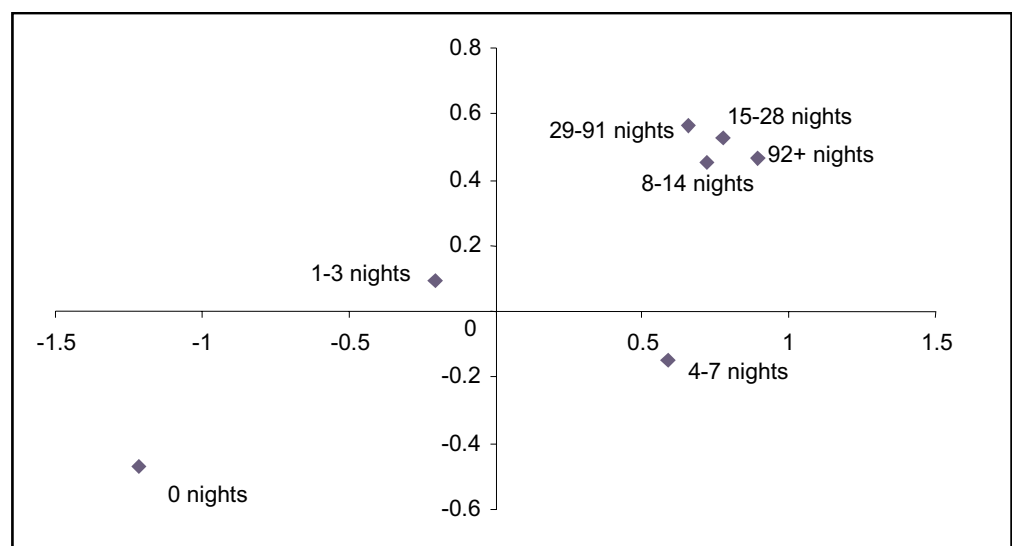
In the following paragraph the results related to business travellers will be further tested, by applying a different method and focusing on the variable "destination country". The continuation of the study will provide a more in-depth insight on this variable, which could not be represented in detail on the factor plane illustrated in this paragraph. In fact, apart from biggest partners (Switzerland, Germany, USA), point-countries showed a quite low quality of representation.

4. The cluster analysis approach

4.1. Overview

Classification problems are frequent in most behavioural analysis: reality is not always easy to synthesise, particularly in absence of an interpretative model to apply to data. In addition, when the number of classification variables is large (this is the general case of socio-economic sciences), difficulty strongly increases. Cluster analysis is the main statistical method attempting to solve classification problems with many variables. The grouping is only dependent on data, without any distribution hypothesis.

In this section of the paper, a hierarchical clustering method is used, in order to assess the identification of homogeneous groups of Italian business travellers according to the visited countries. The analysis should bear out the results found in the correspondence analysis issued in the previous paragraph, particularly the dependence of Italian business travellers' patterns of behaviour mainly on the length of stay and its correlated characteristics. A graphical representation of hierarchical cluster analysis results, called dendrogram, is produced. In a two-dimensional plane, aggregations between statistical units and aggregation distance levels are plotted on the two axes, up to the making of one only cluster.

4.2. Cluster analysis: the adopted method

The purpose of cluster analysis is to place observations into groups or clusters suggested by the data, not defined a priori, such that observations in a given cluster tend to be similar to each other in some sense – whose meaning may be vague – and observations in different clusters tend to be dissimilar.

The degree of similarity is given by a distance measure: groups are formed by observations having minimum distance among themselves. Among the several methods of the cluster analysis available, Ward's method is preferable in this work for these reasons:
- the distance between two clusters – in Ward's method – is the ANOVA sum of squares between the two clusters added up over all the variables. At each generation, the within-cluster sum of squares is minimised over all partitions obtainable by merging two clusters from the previous generation. At the starting point, when each observation makes up one cluster, the between-clusters deviance is 0; on the contrary, when all the units are joined in one cluster, between deviance is maximum (equal to the total sum of squares of the observations). Dividing the within-clusters sum of squares by the overall sum of squares, proportion of variance explained (R^2) is obtained.
- Ward's method tends to join clusters with a small number of observations; for this reason (the analysis aims at pointing out groups of countries rather than single states) it is preferable compared with other cluster analysis methods.

4.3. Input data

The analysis is based on a transformation of the binary matrix used in the previous paragraph for the application of MCA. The binary matrix has been first converted in the form of a Burt table. The Burt table is a matrix, also two-dimensional, containing all pairs of crosstabulations among the set of attributes in raw data (in our case, all the categorical variables). In order to obtain consistent results – i.e. studying the behaviour of Italian travellers according to the state of destination – the Burt table has been modified in this way:
- only rows referred to countries of destination were maintained;[1]
- columns referred to countries were eliminated.

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1 *The category 'State not classified' has been dropped from the analysis for its scarce operational significance.*

Figure 3 – Ward's method: dendrogram.
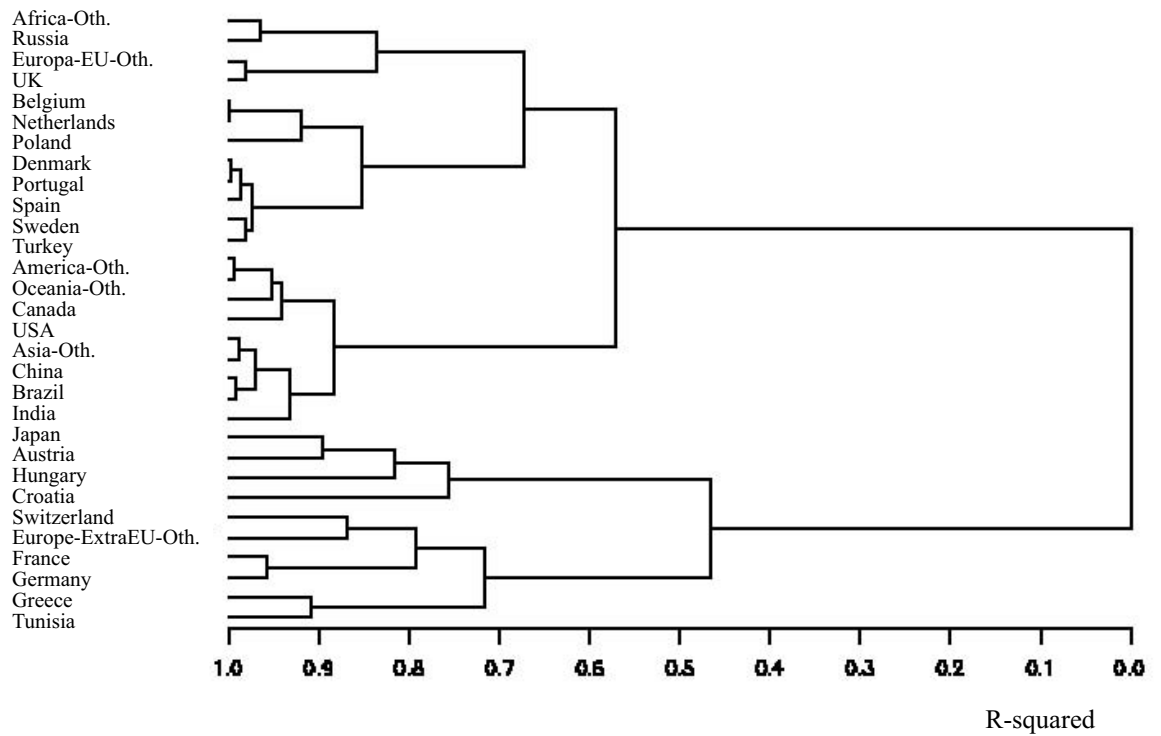
Most cluster analysis methods tend to be influenced by extreme data. For this reason, absolute frequencies have been converted into relative ones, summing up to 1 for the categories of each attribute.

4.4. Characteristics of groups

A general practical rule (descending by both heuristic considerations and probabilistic tests) for deciding how many cluster must be retained in Ward's method is: if the increase in deviance between the clusters (or the decrease in the R^2) when passing from k clusters to k-1 clusters is high, an appropriate number of clusters is k. Looking at the dendrogram (Figure 3), the major relative decreases of R^2 occur when the number of clusters is 2 or 4. In this analysis, as considering only two groups could lead to an excessive loss of information, grouping countries in 4 clusters seems to be more meaningful and appropriate.

Once the number of cluster to retain is established, it is possible to examine the composition of the groups after the application of Ward's method (Table 6).

Table 6 – Composition of clusters

Clusters	Countries
Cluster 1	Africa-oth., Russia, Europe-EU-Oth., UK, Belgium, Netherlands, Poland, Denmark, Portugal, Spain, Sweden, Turkey
Cluster 2	America-oth., Oceania-total, Canada, USA, Asia-oth., China, Brazil, India, Japan
Cluster 3	Austria, Hungary, Croatia, Switzerland
Cluster 4	Europe-Extra-eu-oth., Romania, France, Germany, Greece, Tunisia

The first group is composed by twelve countries. Most of European countries are present here, together with Africa-oth. and Turkey. It is the group of destination countries located at an intermedi-

ate distance from Italy (neighbouring countries are clustered in other groups). As it is shown in Table 7, group 1 is characterised by a high level of average length of stay and per capita expenditure, and by a medium-low daily per capita expenditure. There are almost only overnight visitors in this cluster (see Table 8). The analysis of input data shows that more than two thirds of Italian travellers of this cluster visit Spain, UK and Africa.

Table 7 – Characteristics of clusters: expenditure (global, per capita and daily), number of travellers, number of nights and average length of stay. Italian outbound business travellers, years 1997-2001

Clusters	Expenditure(mln. euros)	Number of travellers (x1000)	Number of nights (x1000)	Average length of stay (days)	Per capita expenditure (euros)	Daily per capita expenditure (euros)
Cluster 1	7,848	8,282	100,945	12.2	947.54	77.74
Cluster 2	12,317	5,577	94,270	16.9	2208.54	130.66
Cluster 3	2,446	29,336	36,740	1.3	83.37	66.57
Cluster 4	8,591	26,936	130,509	4.8	318.92	65.82
Total	31,201	70,132	362,464	5.2	444.90	86.08

The second cluster includes nine elements, exclusively extra-European countries or zones at the largest distance from Italy. In this cluster, the countries in which Italian travellers stay and spend the most are present, both in absolute and in average terms. Input data reveal that this is especially true for Japan and China. The group presents the highest percentage of self-employed and male travellers. Obviously, excursionists are not included.

However, excluding the length of stay and the expenditure, the difference between the first and second cluster is rather small. Travellers in the two groups are characterised by almost the same distribution as regards profession, sex and type of visitor. This is confirmed by the proximity of the two clusters in the dendrogram: the union between 1st and 2nd cluster is the next union after four clusters.

Table 8 – Percentage composition of travellers by profession, sex and type of visitor. Italian outbound business travellers, years 1997-2001

	Profession		Sex		Type of visitor	
	Employed (subordinate)	Self-employed	Male	Female	Excursionist	Overnight visitor
Cluster 1	69.3%	30.7%	90.2%	9.8%	0.3%	99.7%
Cluster 2	66.6%	33.4%	91.0%	9.0%	0.0%	100.0%
Cluster 3	74.6%	25.4%	76.5%	23.5%	18.0%	82.0%
Cluster 4	67.9%	32.1%	89.0%	11.0%	3.3%	96.7%
Total	70.8%	29.2%	84.1%	15.9%	2.4%	97.6%

The third cluster is composed by four European countries, neighbouring or relatively near Italy. It is the cluster with the largest number of travellers and the lowest global expenditure. Input data show that most travellers in this group go to Switzerland and a relevant part of them are excursionists. It is also the cluster with the highest frequency of subordinate workers and women.

The peculiarity of the fourth cluster is its hybrid composition. It merges five European countries – including among the others "big" destinations as France and Germany – and Tunisia. From input data it is derived that the weight of travellers towards France, Germany and Slovenia is prevailing, with the last country included in "Europe-Extra-eu-oth." The countries are therefore all relatively close to Italy: this allows the possibility of having excursionists in the group. The countries of this cluster are somewhat heterogeneous. Therefore, in this case the group seems to originate from an average of different situations rather than from homogeneous patterns. This is evident from the dendrogram: with the exception of France and Germany, countries of cluster 4 aggregate at a relatively high level.

4.5. Robustness of results

In order to test the stability and the robustness of the analysis, three other hierarchical agglomerative clustering methods have been applied to the data. The objective of this paragraph is to show that the change of clustering method does not radically alter the composition of the four clusters found with Ward's method.

In Table 9 below, the countries included in the four clusters with each method are reported. It is clear how single and average methods tend to group observations in chain, forming one big cluster (including most countries) and several clusters consisting of few observations. Nevertheless, it is possible to judge the robustness of the clustering method adopted, looking at the composition of clusters produced by each method.

It is quite clear that the structure of the partition obtained with Ward's method is as well traceable when other clustering methods are adopted, i.e. countries grouped in the same cluster with the former method tend to be joined together if another clustering method is applied: the robustness of the analysis can be inferred.

Table 9 – Country composition of clusters by method of clustering

	Ward	Complete	Average	Single
Cluster 1	Africa-oth., Russia, Europe-EU-oth., UK, Belgium, Netherlands, Poland, Denmark, Portugal, Spain, Sweden, Turkey	Africa-oth., Russia, Europe-EU-oth., UK, Belgium, Netherlands, Poland, Denmark, Portugal, Spain, Sweden, Turkey, Greece, Tunisia	Africa-oth., Russia, Europe-EU-oth., UK, Belgium, Netherlands, Denmark, Portugal, Spain, Sweden, Turkey, America-oth., Oceania-total, Asia-oth., China, Brazil, India, Canada, USA, Japan	Africa-oth., Russia, Europe-EU-oth., UK, Belgium, Netherlands, Poland, Denmark, Portugal, Spain, Sweden, Turkey, America-oth., Oceania-total, Canada, USA, Asia-oth., China, Brazil, India, Japan, Europe-Extra EU-oth, Romania, France, Germany, Greece, Tunisia
Cluster 2	America-oth., Oceania-total, Canada, USA, Asia-oth., China, Brazil, India, Japan	Romania, France, Germany, Europe-Extra EU-oth.	Europe-Extra EU-oth., France, Germany, Romania, Greece, Tunisia	Croatia
Cluster 3	Austria, Hungary, Croatia, Switzerland	America-oth., Oceania-total, Canada, USA, Asia-oth., China, Brazil, India, Japan	Austria, Hungary, Croatia	Austria, Hungary
Cluster 4	Europe-Extra EU-oth., Romania, France, Germany, Greece, Tunisia	Austria, Hungary, Croatia, Switzerland	Switzerland	Switzerland

5. Conclusions

The first part of the study, through the application of the multiple correspondence analysis approach, suggests that the multidimensional structure of the Italian outbound business travel market can be efficiently summarised in its fundamental features by a single variable: the length of stay. This finding implies relevant operative applications, as the information on the length of stay, even at the ordinal level (0 nights, 1-7 nights, more than 7 nights), would make possible to deduce the whole behavioural pattern of travellers (level of expenditure, destination countries, accommodation used, trip organisation, etc.), with a loss of precision still acceptable in specific domains. The analysis also shows that the major role of this variable seems to be specific of the business travel segment, as for leisure travel its "explanatory" potentiality appears to be weaker.

The major importance of the variable "length of stay", and consequently the distance of foreign countries from Italy, seems to be confirmed by the application of cluster analysis in the second part of the study. In most clusters, countries having similar physical distance are grouped. Moreover, the aggregation between countries geographically close each other occurs at the lowest levels of distance. The choice of the number of clusters is studied from a methodological point of view. Both heuristic and probabilistic reasons suggest the adoption of four clusters. The robustness of the method adopted is checked through the analysis of the different composition of clusters produced with the various clustering methods. The methods applied confirm that the partition induced by Ward's clustering algorithm is substantially stable.

These findings may be further developed. A first direction of study could consist in the testing of the role of the variable 'length of stay' for other market segments, i.e. inbound business travel, outbound business travel of other countries, etc. Alternatively, still in the domain of outbound business travel, the classification of countries of destinations could be used in a study of the determinants of the country's global business travel expenditure from a macro-economic standpoint. Business travel expenditure could be explained by variables such as GDP, foreign direct investments, goods and services import/export of both origin and destination areas. The latter could be classified according to the clusters identified in this research, rather than by individual country, in order to increase the significance of the model.

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Abstract

Business tourism is a relevant segment of Italy's outbound tourism. This paper attempts to outline its fundamental features by exploiting the potentialities of statistical tools for multidimensional analysis.

The lack of a theoretical framework suggested the adoption of exploratory – rather than explanatory – statistical tools. The source of data is constituted by the results of the extensive UIC (Ufficio Italiano dei Cambi) inbound-outbound border survey on international tourism.

In the first part of the paper, data are submitted to a multiple correspondence analysis. This allows the identification of the essential features of the phenomenon, leading to the conclusion that the multidimensional structure of the Italian outbound business travel market can be efficiently summarised in its fundamental features by a single variable: the length of stay.

The second part aims at identifying homogeneous groups of travellers according to the countries of destination. To this end, Ward's hierarchical clustering technique is used (the application of other clustering methods verifies the robustness of the results). The analysis confirms that the duration of the stay is the key variable of the phenomenon.

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THE USE OF SURVEYS IN
FINANCIAL STATISTICS

Sample surveys at the Bank of Italy

Raffaele Tartaglia Polcini (Banca d'Italia) [1]

1. Description of the surveys conducted by the Bank's Research Department

The Research Department of the Bank of Italy is directly responsible for the implementation of some regular surveys on households and businesses. These surveys complement the other sources of financial data available from the databases on the credit sector.

(i) Survey of Household Income and Wealth (SHIW)

The survey is carried on since 1965 (micro-data are available from 1977 on) with the purpose of acquiring information on the economic behaviour of households. The main topics investigated are income, wealth, consumption, means of payment. This survey was conducted on an annual basis until 1984, then every two years (with the exception of 1998). The sample consists of 8,000 households living in 300 municipalities, drawn by a population of approximately 19 million households. Data are collected from the households by a market research firm by means of personal interviews (using CAPI). A report containing the main results of the survey is published. Anonymized microdata and a full documentation are also provided to the public (through a CD-ROM and the Internet[2]) for research purposes only.

Recent economic studies based on this survey cover: the household real and financial assets also from a historical point of view; risk aversion, wealth and financial market imperfections; the dynamics of household wealth accumulation; payment systems used by the households; geographical gaps in interest rates; tax evasion. The financial section of the survey has been extensively exploited also for studies on the financial structure of the Italian economy.

(ii) Survey of the investments of industrial firms

The survey is carried on since 1984 on an annual basis (in Spring) with the aim of acquiring precise information on the economic behaviour of enterprises. Main topics are investments, turnover, employment and information on the financial structure of the firms, including self-financing.

Until 1999 only enterprises in the manufacturing industry with 50+ employees were interviewed. In the most recent years the sample has grown from 1,000 to 2,800 units, both to allow more precise estimates at the sub-area level and to include "small" enterprises (20-49 employees). Thus we limit our interest to firms with 20+ employees, for evident reasons of timing and resources.

The sample is one-stage, stratified by size (no. of employees) and sector of economic activity. The technique used to build up the sample is modelled on Neyman's *optimal allocation to strata*, where the size of each stratum is taken proportional both to the sampling fraction and to the variability within the stratum. The Bank branches directly collect data. The main results are published in the Bank's Annual Report.

Main economic studies based on this survey cover: the financial structure of the borrowing of the firms, credit rationing, trade credits; investments and demand uncertainty; time, labour and wage flexibility in the Italian industrial sector.

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1 *The opinions expressed in this paper are the author's own and do not necessarily reflect those of the Bank of Italy.*
2 *http://www.bancaditalia.it.*

(iii) Survey of the services sector

This survey started in 2003 as we felt the growing importance of the service sector and needed to start handling also microdata of services firms to meet our economists' research needs. Bank and insurance services, social services (health, schooling) are excluded from the survey. Also in this case we limit our focus to firms with 20+ employees. The sample comprises initially some 1,000 sampling units.

This new survey is run under the same scheme as the survey of industrial firms (one-stage stratified with Neyman's allocation). Also in this case the Bank branches directly collect data. The main results are published in the Bank's Annual Report.

(iv) Survey on the short-term economic outlook

The survey is carried on since 1992 on a annual basis (in Autumn) with the aim of acquiring information on the short-term trends of exports, investments, prices, turnover, demand, profits, wages and employment. This survey contains only qualitative questions, most of them on short-term expectations, so that analysis tables contain exclusively percentages.

The original sample was of some 600 industrial firms; in the last three years it grew up to 2,600 and from 2003 it is fully coincident with the sum of the samples used for the surveys of industrial and services businesses (ca. 3,800 firms). This survey can thus be seen as a "fast update" of the results of those surveys (the interviews of which take place in Spring instead).

Results are made available to our researchers in two weeks' time from the end of the interviews (conducted by our branches through telephone interviews) and are published and analysed in a dedicated box on the Fall edition of the Bank of Italy's Economic Bulletin.

(v) Survey on expectations of inflation and growth

The survey is conducted quarterly from 1999 in co-operation with "Il Sole 24 Ore" (the most important Italian financial newspaper). Information are collected on consumer inflation expectations (both in Italy and in the Euro area), on the expected variations of the firm prices and further aspects of the short-term expected evolution of the economy. The sample includes 450 firms of both manufacturing and service sector. Data are collected by a market research firm by means of fax/telephone interviews or by e-mail/internet. A report containing the results of the survey is made available on the web.

(vi) Survey of the infrastructure sector

This survey started in Fall 2002 with the aim of monitoring orders and investments for state-financed building projects. The survey is conducted twice a year on a quota sample. Interviews are carried out by the Bank branches.

(vii) Special purpose surveys

The Surveys and Statistical Methods Division conducts also on-purpose surveys, driven by the research interests of the Bank. In recent times, a survey on information and communication technology and a survey on the use of trade credits have been completed.

2. Methodological issues and research

The research activity is devoted both to economic applications (see paragraph 1) and statistical methods[1]: quality of estimates and of microdata is in the focus of most recent methodological research. Main research topics include: robust estimates of investments; non-sampling errors (under-reporting and other measurement errors; non-response); outliers detection and analysis; selective editing; small area estimators; techniques of deflation of investments and of revenues.

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1   *See also the References.*

3. Organisational aspects

The unit responsible for the surveys conducted by the Research department consists of eight members. The choice of conducting these surveys in-house can be thus considered very cost-effective. The network of the Bank's branches is strongly involved in data collection, with specifically trained resources. Moreover, internality allows for a strong co-operation with the other units of the Research department, both in the preparation of the questionnaires and in the analysis of data. We assign a particular importance to this interaction; in fact we believe that the statistical function must be strictly linked to the economic analysis. We strongly believe that this must be based on a deep knowledge of the data and their limits. The Surveys Division provides assistance on statistical methods and on the use of data from our surveys.

We are not part of the National Statistical System and this implies that participation to our surveys is not compulsory[1]. Our function is not to be intended as a substitute of official statistics, since institutional aims are distinct for the two bodies. Historically the surveys at the Bank of Italy have filled a lack of information sources in some topics relevant for monetary policy. Today the quest for quality microdata on some specific economic behaviour and the need for timely economic information drive the surveying activity. Causality models require integration of macro- and microdata: in-house surveys allow access to tailor-made microdata structures that can be crucial for research. Also monetary policymaking may benefit from having speedy access to relevant economic indicators. In some cases, results of the surveys could be used to robustify some financial statistics.

There is a wide co-operation with the National Statistical Institute (ISTAT) on methodological issues. It is not rare that our proposals, in terms of questions or fields of research, are included in the more systematic surveys carried out by ISTAT.

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1 *On the other hand, the Bank as a data collector is strictly bounded by law to guaranteeing privacy. As a reward to those who accept to participate, we send to respondents, in due course, a report of the main result of the survey.*

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Abstract

The Bank of Italy carries out several surveys in full autonomy. Advantages of in-house sample surveys include: speedy access to economic information relevant for monetary policy, access to microdata on households and businesses that are crucial for economic research, the opportunity of a closer relationship with the economists of the Bank's Research Department, in order to integrate data collection, estimation, and economic interpretation. In many cases the Bank branches play a key role both in carrying out the interviews and in analysing results also at the local level. The research activity is devoted both to economic applications and statistical methods. Quality of estimates and of microdata, non-sampling errors are in the focus of most recent methodological research.

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