REGISTERING FINANCIAL INTERMEDIATION SERVICES ON THE NATIONAL ACCOUNTS AS OF 2005

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Departamento de Estadística y Central de Balances

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Financial intermediation services indirectly measured (FISIM): nature, measurement and allocation. Records in force until 2005 and changes to be introduced as of 2005

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Summary

Determining the output of services produced by financial intermediaries and how that output is allocated across the sectors and industries that have used them has been a long-standing problem for national accounting. The issue arises because the majority of these services are not charged or paid for explicitly. Instead, their cost is included in interest payments made and received by the intermediaries, either increasing the cost of lending by intermediaries, in the case of loans, or reducing the returns to investors, in the case of deposits. This means that the value of services of this kind has to be measured indirectly: hence their name of Financial Intermediation Services Indirectly Measured (FISIM). The main text of ESA 95 includes a very much simplified procedure for measuring the output of FISIM, which allocates them to a nominal sector and industry as a form of intermediate consumption. The fact that FISIM are not allocated to the end consumers of these services reduces total GDP. Therefore, in one of its annexes, ESA 95 includes the changes that would need to be made when an agreement is reached between the EU Member States on this allocation. At the end of 2002, after comparing various models, it was agreed what model would be applied as of January 2005 in order to calculate the production and distribution of FISIM. The results of the trial exercises performed to measure the impact of the new method on Spanish national accounts show an average increase in GDP over the period 1995-2001 of around 1.25%.

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1 Introduction

The nature and measurement of the output produced by financial intermediaries and the distribution or allocation of this output to the units using it, constitutes one of the most controversial areas of national accounting. The coming into force at the start of 2005 of European Commission Regulation 1889/2002, October 23rd 2002, which deals with these issues, provided an ideal opportunity to analyse the current situation and assess the changes ahead.

The problem arises because financial intermediaries do not normally charge their customers explicitly for the financial intermediation services they provide. Instead, this charge is included in the interest institutions receive (on money they lend) or pay (on money they borrow). Therefore, for the national accounts to measure these services an indirect route must be used. This is why such services are referred to as Financial Intermediation Services Indirectly Measured (FISIM). The indirect measurement of these services creates an additional problem, namely that of their allocation across the industries and sectors that use them. These are mainly non-financial corporations, households, non-profit institutions serving households (NPISH), general government and the rest of the world. Both the national accounting systems in force to date, SNA 93 and ESA 95[1], and their predecessors, have made progress on the measurement of the global output of these services, but not on the method of distributing them. Specifically, when the ESA Regulation was passed in 1995, no agreement had been reached on how to allocate FISIM between user sectors and industries. The main text of the Regulation does not, therefore, mention any allocation. Nevertheless, given that, as we shall see later, not allocating FISIM results in significant distortions to certain macroeconomic variables, key among which is a reduced value for GDP, the method of allocating FISIM continued to be studied by a specific group. Meanwhile, ANNEX I was incorporated in ESA 95 with the changes that need to be made to the relevant chapters when an agreement is reached on the allocation of these services. The first step towards this agreement was reached in late 1997 and gave rise to Regulation 448/98, February 16th 1998, which states the general principles governing the calculation and allocation of FISIM and various alternative methods for applying them. This Regulation also lays down that all Member States should carry out trial exercises, using the alternative methods described, during the period between 1999 and 2002. After analysing the results obtained from all the countries during this trial period, Regulation 1889/2002, October 23rd 2002, was approved. This selected the definitive method to apply and established the obligation to implement it as of January 2005, but including retrospective calculations from 1995.

In order to describe this process, this document is structured in four sections and three annexes. Their content is as follows: section 2 describes the problem of calculating FISIM faced by national accounts. It also summarises the method that will be applied as of 2005, and compares it with the procedure in force previously. In section 3 the new procedure for the calculation and allocation of FISIM among the sectors that are consumers of these

1. Given the similarity between SNA 93 (United Nations System of National Accounts) and ESA 95 (European System of Accounts) on the issue of FISIM, hereinafter only ESA will be referred to unless it is necessary to mention a specific point in SNA 93. ESA 95 was implemented by Regulation 223/96, which hereinafter will be referred to as the ESA Regulation or ESA 95. This regulation consists of the main body of legal text and two Annexes: Annex A, which is the system as such, and Annex B, which describes in detail the specific information that Member States have to send to Eurostat. Hereinafter, unless stated otherwise, when the ESA Regulation is quoted, the reference is to Annex A, i.e. the text of the system itself. This convention will simplify the exposition here, as the references below to Annex I of Annex A of ESA 95 will be referred to simply as Annex I of ESA 95.

services is explained in more detail and the alternatives considered while this subject was being studied are described. Section 4 presents the data used in the trial exercise, the evaluation of the results obtained and, on the basis of these results, the decision adopted by the Commission (Eurostat). Finally, there are three annexes. Annex A presents the results obtained for Spain during the trial exercise. Annex B reproduces Annex III of Regulation 448/98 on the basis of which the trial exercises were performed. Annex C gives a complete formulation, for comparative purposes, of the current model and that which will be used as of 2005.

2 Calculation of FISIM: description of the problem; method used as of 2005 and comparison with the method used prior to 2005

As mentioned, financial intermediaries do not register all the services they provide their customers on their accounting statements explicitly as services. In practice, the services that are registered as such are those charged explicitly (fees and commissions) and account for a very small part of the total services that financial intermediaries provide. Services which are not shown explicitly on these institutions' profit and loss statements are recorded implicitly as either a higher interest received or lower interest paid than if the service of intermediation (i.e. the service of channelling savers' and investors' financial resources) had been charged for explicitly. However, independently from how these services are registered on the profit and loss statement, it is evident that in the context of national accounting, when the production account of these intermediaries is drawn up, it is necessary to determine the total production corresponding to both types of services, i.e. both the explicitly charged fees and commissions (FISEM) and services registered implicitly (FISIM). If only the production of explicitly measured services were taken into account, the absurd situation would arise that, when the expenses of intermediate consumption incurred by financial intermediaries in the exercise of their business were deducted (charges for electricity, building and equipment maintenance, general administration, etc.), the result would be a balance on the output account (i.e. a gross value added) that was permanently negative, at times significantly so. This clearly has no logical justification in economics or, consequently, in national accounting. The problem is therefore to measure both implicit and explicit financial intermediation services. In practice, measuring FISEM poses no particular problem as they are equal to the fees and commissions stated in the institutions' profit and loss statement. As regards the calculation of FISIM and their allocation, section 2.1 below summarises the procedure that is to be applied as of 2005, and which constitutes a substantial advance on the method included in the text of ESA 95, in force prior to 2005, the characteristics and main limitations of which are discussed in section 2.2.

2.1 Calculation and allocation of FISIM after 2005

In the procedure that is to be applied from 2005 onwards, the calculation that is established starts out from the fact alluded to above that financial intermediaries include the cost of their intermediation services in the interest on loans and deposits to and from their customers. Therefore, the fundamental axis of the new method is to determine a single interest rate, that is to say, an interest rate that is the same for liabilities taken on deposit and assets lent, and from which the charges for intermediation services have been eliminated.[2] Determining this new single interest rate, which could be called the "pure" or "reference" rate, has been one of the most controversial issues concerning the new method of calculation. Section 3 explains in some detail both the different possibilities that were studied and the final decision reached. For now, suffice it to say that according to the agreement reached, this interest rate is determined by dividing the interest charged on loans granted on the inter-bank market between the total balance of these loans[3]. Once this rate has been calculated, the price of the financial intermediation service in the case of services provided when granting a loan, is given by the difference between the interest rate actually applied, and the reference rate. In the case of services provided when receiving deposits, the price of the financial intermediation service is the difference between the reference rate and the rate actually applied to the deposits.

2. Obviously, if the charge for intermediation services is eliminated from the interest rate on lent capital (loans and credits) and borrowed capital (deposits), the rate must be the same.

3. Moreover, using this reference rate, which is called the "internal" rate, the "external" rate which is used to determine the imports and exports, is calculated as described in section 3.

This method of calculation makes it relatively simple to distribute the FISIM across the sectors using these intermediation services by calculating the difference between the interest rates actually applied in each sector by financial intermediaries (on loans and deposits) and the reference rate.

In practice, applying this method begins with a calculation of the FISIM effectively consumed by each sector. Then, the total output is obtained as the sum of the total consumed by each sector. Thus, the output of FISIM is calculated as the sum of the consumption by the various different sectors, rather than first trying to measure output and then allocate it to consumer sectors, as did the system in force up until 2005. This previous system, which will be discussed in more detail below, was known as the global FISIM calculation.

Thus the total consumption of FISIM by each sector (or industry) "j" would be:

$$SIFMI_j = \left(IL_j - L_j * i_r\right) + \left(D_j * i_r - ID_j\right)$$

Where:

ILj = Interest on loans paid effectively by sector "j" to the sector producing the FISIM.

Lj = Average balance of the loans obtained by sector "j"

ir = Reference interest rate.

IDj = Interest received by sector "j" on the deposits it has placed with the FISIM producing sector.

Dj = Average balance of the deposits of sector "j".

An example might make the above analysis somewhat clearer. Let us suppose: i) that the liabilities subject to intermediation (consisting of deposits)=intermediated assets (consisting of credits) are 1,000 units of account (UA); ii) that the intermediaries lend at a rate of 10%; iii) that the intermediaries pay interest on borrowed funds at a rate of 3%; and iv) that the "reference interest rate" is 3.5%. According to the calculation method established in Regulation 448/98, FISIM can be calculated as the sum of the charges for services linked to loans (1,000*(10%-3.5%)) = 65, and the services linked to deposits (1,000*(3.5%-3%)=5. The total of these two (65+5)=70 UA, which is equal to the total FISIM.

Within each sector, the consumption of FISIM will constitute either intermediate or final consumption. The part that constitutes intermediate consumption has to be distributed between the industries in the input-output tables. The procedure that will be followed as of 2005 for this distribution, and to obtain the output of FISIM at constant prices, is described in section 3 (sub-sections 3.2 and 3.3, respectively).

2.2 The method in force up to 2005 and its limitations

According to the method described in the main text of ESA 95 (i.e. that which was in force up until 2005) the output of FISIM is measured as *"the total income from property received by financial intermediaries providing the financial intermediation service, less the total interest paid by them, excluding the value of any income received from investing their own funds (as this income does not derive from financial intermediation)".* This method of calculating FISIM (global calculation using the data of the financial institutions that produce FISIM) does not create difficulties from the point of view of integrating the total output of these services into the national accounts system. However, it is a serious obstacle to distributing FISIM between the sectors

and industries actually using them. In effect, given the lack of direct data about the FISIM used by each sector and industry, it would be necessary to allocate them by some form of approximation. The most obvious approximation would be to distribute the FISIM according to the balance of loans and deposits granted or taken by financial intermediaries from each group. This distribution would imply that the interest rates actually applied by intermediaries are the same, regardless of the type of loan or deposit, or of the sector borrowing the funds or making the deposits. This simplification is difficult to accept, which is possibly why it was decided not to allocate FISIM to sectors/industries in ESA 95 and in preceding systems.

When this method is used, all the output of financial intermediaries originating in the FISIM calculated as described in the preceding paragraph, are registered alongside the resources on the production account. This leads to an increase of the same amount in the balance of gross value added (GVA). The convention adopted in order to distribute the FISIM was to allocate the total output, in the form of intermediate consumption, to a nominal sector, whose sole function was, precisely, to consume FISIM. In other words, this nominal sector produced nothing, and therefore obtained a negative GAV equal in amount to the intermediate consumption that, by convention, had been allocated to it. The convention adopted also establishes that the total interest effectively paid and received is registered on the account to which the primary distribution of income account (and in that of the counterparty sectors), and a "FISIM adjustment" for the same amount as the FISIM produced, but with the opposite sign, is recorded in the financial intermediaries' resources and the uses of the nominal sector. The need for this adjustment arises because if it were not made, the balance on the financial intermediaries' "allocation of primary income" account would include the output of FISIM[4] twice, and in the case of the nominal sector, because it is necessary to eliminate the accounting artefact created in the production account. This totally conventional method gives rise to a series of distortions in the macroeconomic variables. This motivated the drafting of ANNEX I mentioned above. This annex includes two tables with an exercise illustrating the consequences of allocating the FISIM to a nominal sector and, by contrast, of allocating them to the sectors that use them. Table 1 (consequences of allocating FISIM to a nominal sector) and Table 2 (Consequences of allocating FISIM to the different institutional sectors that use them), which are shown at the end of this document, reproduce, with certain changes and simplifications to the way they are presented, the tables from Annex I of ESA 95. These tables, together with the points alluded to above, allow us to identify the limitations of the way in which FISIM have been recorded in national accounts that apply ESA 95, which include the Spanish national accounts (*Contabilidad Nacional de España*, CNE).

As in the case of any good or service, in national accounts the destination of the production and imports of FISIM are treated as intermediate consumption, final consumption, and exports. This is true of both sector- and industry-level accounts.[5] It is evident that financial intermediaries provide intermediation services to non-financial corporations (and to individual business people included in the households sector) and to general government that use them as an intermediate input to produce goods and services. However, it is also clear that other destinations of FISIM, in particular households, generally use them for final consumption, or indeed they are exported. Examples of these cases include the services implicit in consumer loans, in deposits taken from households and NPISH[6], and loans and deposits to and from non-residents. However, as already noted, in stark contrast to this

4. In effect, firstly this output would be included in the gross operating surplus, as it is a resource on that account, and secondly it would be included in the interest effectively paid and received.

5. No further reference will be made to industries, although the conclusions are, obviously, the same as in the case of the sectors.

6. Non-profit institutions serving households.

obvious reality, the current system of recording FISIM adopts the convention that they are only used as intermediate consumption and only by a nominal sector. This causes distortions in the national accounting data, as may be shown by the simplified examples in tables 1 and 2. These examples have included movements in the accounts of certain sectors (specifically, financial institutions, non-financial corporations, households and the rest of the world) which are relevant to explaining these distortions.[7] In other words, the general government sector, whose intermediate consumption include FISIM[8], has not been included.

The key distortions alluded to in tables 1 and 2 are:

a) An artificial increase in gross value added (GVA) (and in gross operating surplus, GOS) in those sectors to which, despite the evidence to the contrary, no intermediate consumption is allocated (Non-financial corporations[9]). Table 1 shows that the GVA (and GOS) of non-financial corporations is not affected, when according to Table 12, it should be reduced by 18. This is explained by the "artificial increase" just referred to.

b) A reduction in GDP on allocating all FISIM to the nominal sector as an intermediate consumption (48 accounting units (AU) in Table 1), when, as Table 2 clearly shows, only 18 AU is intermediate consumption (corresponding to non-financial corporations), while the remaining 30 is, together with imported FISIM, final consumption by households (28) and exports (4). In effect, the total for all these destinations (18+28+4) is 50 AU, as imports of FISIM worth 2 AU were also used (these are outputs of non-resident financial intermediaries). Therefore, adopting the criteria in force implies reducing GDP by 30 AU (28+4-2= 48-18) in the year described in the exercise.

c) Registering of imports and exports of FISIM is being prevented, even though it is evident that resident sectors enter into transactions with non-residents.

d) The cost of intermediation services is being included in the flows of interest payments and receipts by various sectors. This makes it necessary to make adjustments to the primary income distribution account of the financial intermediaries and the nominal sector. These adjustments are difficult to understand, to say the least. It is true that the interest referred to (i.e. that in Table 1) may be perceived by some analysts as "genuine interest", unlike those in Table 2, which some might consider to be somewhat "artificial". Faced with this objection it may always be argued that the presentation given in Table 2 may be supplemented, as it is in the report, which shows the interest in Table 1, without altering the accounting balance or the conceptual framework. Apart from this, this accounting treatment of the interest incorporating the FISIM means that the balances of primary income and available income for households are less than they should be, precisely to the extent of the final consumption which has been accounted for as an intermediate consumption in the nominal sector.

An additional limitation is that already mentioned in section 2, namely that the method of recording currently in force only allows the total FISIM to be calculated from the producers' point of view (i.e. financial intermediaries), the producers being the ones who receive and pay all interest (*global calculation of FISIM).* However, it may be of interest to calculate the FISIM consumed by each end user in order to obtain the *total FISIM as the sum of these individual consumptions.*

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7. Annex C includes, in a formalised way, the comparison between the method in force and that which will apply as of 2005.

8. Given the specificities of estimating the output of the public administration sector (which is determined according to the costs incurred), the intermediate inputs of FISIM consumed by the sector are again "produced" by it as an output. This new output is a form of end consumption proper to public administrations, thus re-balancing the accounts.

9. In table 2, which is only a simplified example, it is assumed that only non-financial companies consume FISIM as an intermediate input. However, households also consume them as the sector includes individual business people.

3 The various options considered for the calculation and distribution of FISIM. Regulation 448/98. Establishing of a test period. The problems to be solved

Section two of this document has explained in simple terms the method that will be followed as of 2005. Reaching an agreement on this method was a lengthy and arduous task. The aim of this section is to discuss the various options that were studied and to explain, in more detail than in section 2.1, the final system agreed upon.

At the time of drafting ESA 95 everyone concerned was convinced that it was necessary to improve the system previously in force (ESA 79), which did not distribute FISIM (ESA 79 called financial intermediation services "Imputed output of banking services") between the sectors consuming them. However, given the difficulty of finding a method to perform this allocation, and above all, given the non-availability of statistical data in most countries due to adopt ESA 95, finally, at the time of its adoption (1996) it was decided to incorporate the system previously in force (ESA 79) in the manual. However, convinced that the solution that had been adopted was not ideal, and that sooner or later it would be necessary to produce an allocation of FISIM across the sectors consuming them, "Annex I: Modifications to introduce in the chapters of ESA when it is decided that the FISIM are to be allocated" was included. This Annex establishes the formal modifications that need to be made to the accounts when it is decided that this allocation is to be made. However, it does not state the specific method to use, precisely because that was the issue on which no agreement was reached. Article 2.3 of the ESA Regulation establishes that prior to 31/12/97 a decision should be taken on the implementation of the modifications given in Annex I. In order to comply with this rule, a working group was set up under the Committee for Monetary, Financial and Balance of Payments Statistics (Comité de Estadísticas Monetarias, Financieras y de Balanza de Pagos, CMFB). This committee belongs to the Banco de España, which is the institution holding the relevant information needed to calculate FISIM.

The Banco de España collaborated with the working group, in coordination with the National Statistical Office (Instituto Nacional de Estadística, INE), which is the body responsible for drawing up the Spanish national accounts[10]. As a result of this working group, in February 1998, somewhat later than the deadline initially envisaged, Regulation 448/98 was approved, completing and modifying the ESA Regulation as regards the allocation of FISIM in ESA 95. In particular, Annex I of Regulation 448/98 defines the principles that should govern the allocation of FISIM, slightly modifying those established in ESA 95 and proposing (in Annex III) various alternative methods for the allocation of FISIM across the relevant sectors[11]. It also laid down that Member States were to perform calculations according to the alternative methods described during a trial period from 1999 to 2002, during which they were to work with data from 1995 to 2001. *On the basis of the results obtained during the trial period, a final decision would be made as to which of the different methods was considered the most*

10. The CMFB consists of members responsible for the economic statistics of the National Statistics Offices, the Heads of the Statistics Departments of the National Central Banks of the EU as well as Eurostat representatives and the DG Statistics of the ECB. The Banco de España was represented by Pilar Pérez, Statistics and Central Balance Sheet Data Office Department, in the Working Group.

11. Annex II of Regulation 448/98, not quoted here, refers to the elimination of the "old" way of measuring FISIM (income on property received, less interest payable, less income on property collected on investments of own funds) in the section of ESA 95 regarding the measurement of the productive activity of providers of financial leasing, in that these also perform financial intermediation. This modification is equivalent to also applying the method of calculating FISIM established by Regulation 448/98 to the case of measuring the intermediation performed by providers of financial leasing. As we shall see, providers of financial leasing (leasing companies) are classified as credit institutions, and therefore included as a FISIM producing sector.

appropriate way to allocate FISIM. Annex B, at the end of this note, reproduces the aforementioned text of Annex III of Regulation 448/98, where the proposed methods can be consulted. In general terms, Annex III contains regulations concerning:

- Calculating and allocating FISIM produced by financial intermediaries, where, in particular, the following are shown: a) statistical data on sectors and instruments needed to calculate FISIM and b) the four methods with which to measure the reference interest rate.
- Calculating imports of financial intermediation services, and
- Calculating FISIM in constant price terms.
- Sections 3.1 to 3.3 below, deal with each of these issues.

3.1 Calculation and allocation of FISIM produced by financial intermediaries

The working group encountered numerous theoretical and practical problems when studying the allocation of FISIM. The solutions to these problems that were adopted are reflected in the version of Regulation 448/98 that was finally approved. The most controversial issues were:

a) Determining who the financial intermediaries producing FISIM were (so far the reference has been to financial intermediaries classified in the financial institutions sector, without being more specific), and likewise, also clarifying the institutional groups consuming FISIM.
b) Determining what financial instruments produced FISIM (so far the reference has been to loans, credit, and deposits, as well as intermediated balances, without being more specific),
c) Determining if FISIM should first be calculated globally, i.e. for the economy as a whole, and then allocated between the different institutional groupings (sectors, sub-sectors and agents) or if, by contrast, the FISIM that have been "consumed" or "used" by the different institutional groupings should be calculated and then the output of FISIM calculated as the sum of these uses or consumptions.
d) Deciding if the reference (or "pure") interest rate should be the same for all, or if a different rate should be used for each instrument or group of instruments for which FISIM may be calculated.
e) Deciding how to deal with cases in which, as a result of applying any of the calculation methods proposed in the Regulation, a negative FISIM is obtained.

The conclusions reached on each of these points are discussed in the sections below:

3.1.1 FISIM-PRODUCING SUB-SECTORS

Annexes I and III of Regulation 448/98 established that the following sub-sectors produce FISIM:

- S.122 Other monetary financial institutions[12] (except Money Market Funds).
- S.123 Other financial intermediaries, except insurance companies and pension funds[13], but excluding investment funds.

and that the following sub-sectors do not produce FISIM:

12. In the case of Spain this sub-sector consists of credit institutions (banks, savings banks, credit cooperatives, credit finance institutions and ICO) and money market institutions, i.e. all monetary and financial institutions as a whole, except the Bank of Spain.

13. The sub-sector consists of collective investment institutions of a financial and non-financial nature, securities firms, mortgage securitisation funds, venture capital funds and firms, holding companies belonging to financial institutions which do not simultaneously do business, and instrumental companies created to issue preference shares.

– S.124 “Financial Auxiliaries”[14]
– S.125 Insurance companies and pension funds

It might initially appear that all the sub-sectors classified as financial institutions (S.12) are candidates for the production of FISIM and that both SCN 93 and ESA 95 define these institutions as those companies and quasi-companies whose income derives, fundamentally, from financial intermediation and/or activities auxiliary to financial intermediation. However, financial intermediation is a broad concept. It refers to the activity whereby an institutional unit channels resources from certain economic agents to others through financial transactions it carries out in its own account. Nevertheless, the activity of certain financial intermediaries, such as insurance companies, goes beyond mere financial intermediation as, in this case, the final aim of their activity is to cover risks. This gives rise to a specific way of measuring the services that they provide (different to that used to measure FISIM). Moreover, nor are “financial auxiliaries” considered to be producers of FISIM as they charge explicitly for the services they provide (which means their services are considered to be directly measured financial intermediation services). Investment funds are also excluded as, in this case, the whole of the investment in financial assets comes from their own funds. The reason for excluding income from investments of own resources from the FISIM calculation is based on the fact that investing own funds is an activity common to all sectors of the economy and is not an activity that gives rise to intermediation services. Therefore, it is considered that the institutional groups producing FISIM are those in sub-sectors S.122 and S.123, with the exclusion of investment funds from the latter category.

Whether to include or exclude central banks (S.121) as producers of FISIM was a matter of controversy at the discussions of the working group. Proponents of their inclusion as producers of FISIM maintained that a large part of their activity consists of acting as intermediaries for funds between financial institutions and, therefore, their FISIM should be calculated. Opponents placed more emphasis on the specific functions of central banks from which certain characteristics of their balance sheet derive. Firstly, their assets include instruments such as gold and special drawing rights (SDRs), which do not produce FISIM. Secondly, their assets include cash, which is mostly in the hands of households, and the financial institutions' deposits tied to their minimum reserve requirements. It is doubtful that either instrument produces FISIM. In effect, most cash is considered to be an asset for households for which this sector receives no payment. Any calculation of FISIM on cash would have a direct impact on final consumption by households. It is extremely doubtful that this would be correct as the service cash provides households is not something this sector has freely decided to use, but, in general, depends rather on the development of the financial system in the country in question, and, in particular, the means of payment facilities the system has available. As regards financial institutions’ deposits linked to their minimum reserve requirements, it is hard to justify their producing FISIM as they are obligatory. Therefore, financial institutions are not making these deposits freely and so are not using a central bank service. The remaining deposits and credits of financial institutions would be the only instruments on which FISIM may accrue. However, in this case it also needs to be borne in mind that in most instances they are linked to monetary policy decisions.

14. This sub-sector consists of deposit guarantee funds, investment fund managers, mutual guarantee companies, stock brokers, pension fund managers, valuation agencies, portfolio mangers, venture capital managers, insurance company liquidations commission (prior to its absorption in the insurance compensation consortium), money changing establishments, and managers of official secondary securities markets. Iberclear and holding companies performing auxiliary financial businesses.

Finally, all these considerations led to the establishment in Regulation 448/98 of the measurement of the output of services provided by Central Banks (S.121) by means of the convention of summing the costs incurred (intermediate consumption, salary payments, and depreciation of fixed capital) and to allocate it, as intermediate consumption, to the "Other monetary financial institutions sub-sector", to the extent that credit institutions carried out these intermediation activities with central banks.

3.1.2 FINANCIAL INSTRUMENTS GENERATING FISIM

In the part of Regulation 448/98 concerning the breakdown of FISIM, the only financial instruments listed as producing FISIM are loans and credits and deposits.

When discussing this issue, the working group started out from the idea that FISIM are those intermediation services provided by financial intermediaries to which no explicit price is set, as the cost is included in the interest charged for the funds lent (increasing the total interest to cover the cost of intermediation) and the interest paid on funds deposited by third parties (reducing the total interest paid to cover the cost of intermediating the funds entrusted to them). On this view, the natural candidates for inclusion as instruments generating FISIM are loans and credit granted by financial institutions and deposits taken by them, as it is the financial institutions that control the interest rates they charge or pay for these instruments.

The inclusion of securities other than shares among the instruments generating FISIM was discussed. Against this it was argued that securities other than shares issued by, or held on the portfolio of, financial institutions, do not generate FISIM, either because the financial institutions do not exercise any control over the rate of interest on the securities they purchase, or because the control they exercise over the types of securities they issue is limited by the fact that the rates at which they are issued must be aligned with those of other securities with similar characteristics issued by other agents (for example, non-financial corporations) and with which they have to compete in primary markets. Moreover, other economic agents, such as non-financial corporations or general government also issue securities other than shares and hold portfolios, but are not considered financial intermediaries or producers of FISIM as a result. The role of financial institutions with respect to the agents purchasing their share issues and those who sell them their shares would, therefore, be similar to that played by agents outside of the sphere of financial intermediaries.

In favour of including securities other than shares among the instruments generating FISIM it was argued that in a developed and competitive financial world, financial institutions do not have full control over the interest rates on their deposits and loans, as they have to compete on markets with other savings and lending instruments, and in the case of financial intermediaries, securities are an alternative way of capturing resources substituting for normal deposit taking.

The decision finally reached was that reflected in the Regulation, namely to consider securities other than shares not to generate FISIM and that only deposits and, credits and loans produce this kind of service.

3.1.3 METHOD OF CALCULATING THE GLOBAL OUTPUT OF FISIM AND ITS ALLOCATION AMONG THE USERS OF FISIM

The starting point established by Regulation 448/98 is that the output of FISIM produced by resident financial institutions (O), plus imports of FISIM produced by non-resident financial institutions (M), should be allocated among the industries and sectors using them in the form of intermediate consumption (IC), final consumption (FC) or exports of services (X), as appropriate. In short:

$$O + M = IC + FC + X$$

as established by the fundamental equation of national accounts, although simplified, as in this case, given the nature of these services, gross capital formation (GCF) is not included in the list of uses.

The members of the working group discussed two alternative methods of calculating the overall output of FISIM and their allocation:

a) Output: The method used to calculate the overall output of FISIM must be that envisaged in the initial draft of ESA 95, i.e. as the difference between income from property received by financial institutions (excluding that deriving from investments of their own funds) and the interest payments made. The allocation of the production for each group of agents, sub-sector or sector is calculated as the sum of the two components included in the equation given in section 2.1, i.e. the sum of: 1) the difference between the interest paid for the credit received from sub-sectors generating FISIM and the average credit balance multiplied by the reference interest rate, and 2) the difference between the average balance multiplied by the reference interest rate and the total interest actually paid on deposits. Without going into details for now of how the reference rate is determined (a subject to which we will return later), this method had the drawback that, except in certain very restrictive cases which, in general, never arise in practice (financial assets are not purchased with own funds, funds are not raised by issuing fixed-income securities, liabilities acquired are not used to finance the purchase of fixed or variable income securities, and finally, the interest rates charged by intermediaries on loans and credit to all sectors are the same and the rates they pay on deposits received from all sectors are identical), the sum of the FISIM distributed is not the same as the overall output of FISIM, where both are calculated in the form described above. To overcome this drawback it was proposed that the difference between the total overall FISIM and the sum of the distributed FISIM be distributed between the sub-sectors in direct proportion to the relative importance of the FISIM of each of them.

b) Output = Allocation. In this case the process begins with the calculation of the FISIM "consumed" or used by the sectors and then the output of FISIM from financial intermediaries is obtained as the sum of the FISIM consumed by all sectors. When performing this calculation it is necessary to distinguish between the FISIM from resident financial intermediaries (which should be recorded as output from the sector) and FISIM from non-resident financial intermediaries (which should be recorded as imports). Moreover, FISIM from resident intermediaries have to be distributed between intermediate consumption, final consumption and exports. For their part, the FISIM from dealings between financial intermediaries and non-financial corporations and general government

are, obviously, always a form of intermediate consumption. As regards dealings with households, these are an intermediate consumption in the case of loans to, and deposits from, individual entrepreneurs and loans for home purchases[15]. The remainder, together with NPISH should be treated as final consumption. Lastly, those originating in loans or deposits to/from non-residents should be treated as exports.

This second option was the one finally agreed by the working group and was that included in Regulation 448/98.

3.1.4 THE CHOICE OF REFERENCE RATE

Point 1b) of Annex III of Regulation 448/98 proposes four methods to decide on the choice of reference rate, the last of which has three variations. Before listing these methods it is important to note that the working group came to the conclusion that it would be appropriate to apply an "internal" reference rate when calculating the FISIM on transactions between resident financial institutions and residents and a separate “external” rate for transactions between resident financial institutions and non-residents (exports of intermediation services) and transactions between non-resident financial institutions and residents (imports of intermediation services). The reason for this was that, whatever reference rate was taken (for example, inter-bank interest rates), there was no reason why this rate should give the same results for internal and external markets. This distinction was taken up in Annex III of the Regulation.

a. Internal reference rates

Method 1. In order to obtain the FISIM produced of resident financial intermediaries, an internal reference rate is used that is calculated by dividing the interest charged on loans on the inter-bank market (i.e., loans between sub-sectors 122 and 123) by the balance of these loans.

This *type of implied rate of return on inter-bank transactions, or inter-bank rate,* would seem to be the obvious candidate for measuring the "pure interest rate" without including services. Nevertheless, it has two drawbacks: a) the excessive weight given to short-term transactions on the inter-bank market; and b) that although in theory this rate excludes all intermediation services, in practice this is not the case. In effect, dealings between credit institutions do not consist only of deposits and loans, but also other types of transactions such as correspondent accounts, the interest on which can be very different from institutions’ typical deposits.

Method 2. In order to obtain the FISIM produced by resident financial institutions an internal rate is used that is calculated as the weighted average of the interest on inter-bank loans and the interest on securities other than shares issued by sub-sectors 122 and 123. The weighting factors are the balances of inter-bank loans and the balances of securities other than shares issued by these sub-sectors.

This eclectic solution is intended to overcome some of the problems with inter-bank rates already referred to. Obviously, securities other than shares represent a channel for the transfer of funds from economic units that have savings to those making investments without the intermediation of financial institutions. When a financial institution takes part in the placement of securities it always does so in exchange for a commission; the interest rate on the securities therefore excludes the cost of the financial institution's involvement. Therefore, if what is sought is an interest rate that excludes financial intermediation services, it would seem

15. See footnote 6.

reasonable to choose *a rate related to securities.* The problem with securities is that the interest rate on them includes a risk penalty, and therefore, depends on the risk associated with the investment. In other words, it depending on who the issuer is, the interest rate on securities with the same maturity can vary. In order for the rate selected not to be distorted by this risk element, risk-free securities need to be chosen. For instance, a synthetic index of securities issued by the state would be a strong candidate for selection as a reference rate. However, given that we are dealing with transactions involving financial institutions, another candidate interest rate on securities would be the rate on securities other than shares issued by financial institutions, provided that the risk premium on the issuer is not too high.

Method 3. In order to obtain the FISIM produced by resident financial intermediaries, two reference rates may be applied: one for short-term loans and deposits (calculated according to method 1) and another for long-term loans and deposits (which is that corresponding to issues of long-term securities other than shares).

This third method is also a compromise solution that aims to resolve, by means of a synthesis of the main limitations attributed to the two solutions underlying methods 1 and 2, namely the inter-bank market interest rate and the rate of interest on long-term securities other than shares.

Method 4. In order to obtain the FISIM produced by resident financial institutions, internal reference rates calculated by any of the three following weighted averages are used:

Method 4a. Average of the interest rates applied to loans and deposits to and from other sectors or resident sub-sectors (except the central bank) by sub-sectors 122 and 123.

Method 4b. Average of the reference rates of interest resulting from methods 4a and 1.

Method 4c. Average of the reference rates resulting from methods 4a and 2.

The analysis by the working group of the potentialities of the methods proposed in Annex III of Regulation 448/98 *did not lead to any recommendation or agreement, as this was postponed to the trials outlined in article 4 of the Regulation.* Note that the problem was not just the definition of a reference rate with a particular analytic validity, but that this rate could be calculated using the statistical information available. This is the crucial factor justifying the conducting of these trials.

After the trials had been completed, the internal reference rate described by Method 1 was selected, as reflected in Regulation 1889/2002.

b. External reference rate

In order to determine the imports and exports of FISIM, the weighted average inter-bank rate for loans and deposits between resident and non-resident financial institutions is used as the reference rate. In the case of loans, the weightings used are the balance of loans between S.122 and S.123, and the balance of loans between non-resident financial intermediaries. In the case of deposits, the weightings are the balance of deposits between S.122 and S.123, and the balance of deposits between non-resident financial intermediaries.

3.1.5 TREATMENT OF NEGATIVE FISIM

The procedure finally adopted for the calculation of FISIM, which is outlined in section 3.1.3, can lead, in some cases, to negative FISIM. This can occur if, for example, certain financial institutions that produce FISIM decide, for commercial reasons, to place a premium on certain loan or deposit transactions, or if the changes in the reference interest rates are faster than those on financial institutions' loans and/or deposits. During the trial period some of the

members of the working group were reluctant to admit to the possibility of negative FISIM. Others, by contrast, considered this outcome perfectly possible because, even if there could be a negative output of FISIM on certain products (for example, certain type of loans), this would never be the general case for all financial institutions' output, and therefore the total FISIM, when all the instruments generating FISIM were taken into account, would obviously be positive. It was finally agreed that negative FISIM could arise in the case of some products on some occasions.

3.2 Distribution of FISIM by industries

Once the FISIM used by each of the sectors and sub-sectors of the economy has been calculated and the fraction of FISIM that is intermediate consumption determined, it is necessary to distribute this intermediate consumption across the various industries in the input-output tables. However, this has the drawback that, unlike the sector accounts (which group together complete institutional units whose accounts include, among other things, loans and deposits to and from financial intermediaries), the industry-level accounts are an artificial construct deriving from the grouping together of homogeneous production units in order to reveal the techno-economic relations that end up on the operating statement and therefore do not include details of the financial instruments that correspond to each type of activity. In effect, a company that produces goods, for example, in three business areas, may receive loans or make deposits that relate to the company as a whole, but are not allocated to each of the company's specific business areas. In short, a company's production processes are financed by loans (or generate income that can be placed on deposit) as a whole without it being possible to attribute the borrowing or income generation precisely to the outputs of any of the activities undertaken by the company. This fact makes it extremely difficult to allocate the FISIM generated by loans and deposits to industries in proportion to the loans received and deposits made by those industries unless very simplistic hypotheses are accepted. The working group was aware of these limitations, and with these reservations, restricted itself to acknowledging that for the intended goals, two procedures could be followed:

a) Estimating by some procedure the balance of loans and deposits per industry, and from this estimation, calculate the corresponding FISIM.
b) Allocate the total output of FISIM between the industries in direct proportion to the output of each industry.

These conclusions by the working group refer to a topic that, perhaps due to its practical complexities, is not raised in Regulation 448/98, but which it was acknowledged would have to be tackled, given that if it was decided to allocate FISIM to sectors, the consistency of the system of national accounts necessitated their distribution by industries as well. As we shall see, the two procedures, a) and b), described above were adopted as is in the Regulation laying down the procedures to follow as of 2005 (Regulation 1889/2002). The allocation by industry is the weakest point of these procedures. At all events, it is to be expected that countries finally adopt procedure b) to allocate FISIM across industries (in practice, rather than the output of industries, which is not always available, GVA is used), in view of the impossibility of implementing solution a), as it is impossible in practice to obtain the necessary information.

3.3 Obtaining FISIM at constant prices

As with any other economic variable, it is necessary to find the most appropriate price deflator to apply to the nominal output of FISIM and obtain this output in terms of constant prices relative to a base year. The procedure included in Regulation 448/98 (point 3 of Annex III),

involves applying the base year margin to the loan and deposit balances in constant prices. In effect, if we start, as the Regulation states, with:

$$FISIM\ \ on\ \ loans\ \ at\ \ constant\ \ prices\ =\ \frac{FISIM\ \ on\ \ loans}{Price\ \ index}\ *\ \frac{Base\ \ period\ \ margin}{Effective\ \ margin}$$

Where:

L	=	Loan balance
$FISIM_L$	=	FISIM on loans in nominal terms
$FISIM_{Lcp}$	=	FISIM on loans at constant prices.
E_r	=	effective lending rate
R_r	=	reference rate
P_I	=	price index
$E_r - R_r$	=	effective loan margin in current year

$$FISIM_L\ =\ LE_r - LR_r = L(E_r - R_r)$$

$$FISIM_{Lcp}\ =\ \frac{(E_r - R_r)\ \ P}{P_I}\ *\ \frac{(E_r - R_r)\ \ base\ \ year}{(E_r - R_r)}$$

the definition given at the start is obtained:

$$FISIM_{Lcp}\ =\ \frac{L}{P_I}\ (E_r - R_r)\ \ base\ \ year$$

In other words, first the loan balance is calculated at constant prices and the loan margin for the base year is applied to it. All that remains is to determine the applicable price index. In the absence of a more specific price index, the price deflator for final demand could be used.

4 Trial exercises. Baseline data. Evaluation of results and final decision

4.1 Trial exercises

On the basis of the points raised in the preceding section regarding the sub-sectors and instruments producing FISIM and the procedures whereby these services are calculated, the exercises established in article 4 of Regulation 448/98 were carried out. These trials involved obtaining the output of FISIM as of 1995. The data had to be submitted annually at the start of November in 1999 (1995 to 1998), 2000 (1995 to 2000) and at the end of April 2002 (1995 to 2001). These exercises were performed using the six reference rates described in section 3.1.4. These rates resulted from applying methods 1, 2, 3, 4a, 4b and 4c to obtain various different "internal reference rates" and the so-called "external reference rate" applicable to imports and exports of FISIM.

4.2 Baseline data

In order to carry out these exercises it was necessary to have the following information:

a) Average annual balance and interest accrued on loans granted by resident S.122 and S.123 broken down by terms and sub-sectors holding them, between which it is necessary to distribute the FISIM. These would be:
   - S.11: Non-financial corporations
   - S.124: Financial auxiliaries
   - S.125: Insurance companies and pension funds
   - S.13: General government
   - S.14: Households, with a distinction between
     - Individual entrepreneurs, not constituted as companies, or households for the purchase of the home
     - Households for other purposes
   - S.15: Non-profit institutions serving households (NPISH)
   - S.2: Rest of the world

b) Average balance of deposits and interest accrued on them with S.122 and S.123 by terms and the same sectors and sub-sectors as listed in a).

c) Average annual balance and interest accrued on inter-bank loans between resident agents belonging to S.122 and S.123.

d) Average annual balance and interest accrued on inter-bank loans between resident agents belonging to S.122 and S.123.

e) Average annual balance and interest accrued on loans between resident financial institutions and non-residents and vice versa.

f) Average annual balance and interest accrued on deposits between resident financial institutions and non-residents and vice versa.

4.3 Evaluation of results

The Member States of the EU conducted these exercises within the stipulated timescale and in accordance with the various methods laid down in Regulation 448/98[16]. However, in many cases the lack of information made it necessary to resort to estimates. Despite this fact, the quality of the exercises carried out can be considered to be satisfactory, such that once the calculation and distribution of the FISIM was completed, the need to distribute these services was verified from a practical point of view as well as a theoretical one. The exercises have shown, moreover, that the calculation and allocation of FISIM will greatly enhance comparability of certain macroeconomic variables between countries as the results have revealed that while in some countries as much as

16. Annex A gives the results of these exercises for Spain.

50% of the total output of financial intermediation services by sub-sector "S.122 Other monetary financial institutions" are charged for in the form of fees and commissions (directly measured financial intermediation services), and therefore output of FISIM accounts for less than 50% of total output, in other countries the proportion is very different. This disparity underscores the need to calculate of FISIM output adequately and allocate them between sectors, given the varying relative importance of this type of service and, therefore, the distortions to which the current method of determining these macroeconomic variables gives rise. As regards the different methods that have been compared, and which differ in terms of the "internal" reference rate used (see section 3.1.4 and Annex III of Council Regulation 448/98), the results obtained for each country in terms of a major variable such as GDP were not significantly different.

In view of its interest, Annex A at the end of this document, includes the results of the trial exercise in Spain, with the different estimates of the reference rates made using the different methods, and their implications, described in this section.

4.4 Final decision: Regulation 1889/2002

After submitting the conclusions of the working group to the relevant committees, namely the CMFB, within the scope of which the working group was set up, and the SPC (Statistical Programme Committee[17]), the Commission (Eurostat) finally opted for Method 1 in Annex III of Regulation 448/98 as the method for the calculation and allocation of FISIM between resident user sectors, given that as the results of all the methods were similar in terms of their impact on major macroeconomic variables, this was the simplest method to apply. In short, the Decision of the Commission (Eurostat) on these issues, as reflected in Regulation 1889/2002, October 23rd 2002, took the following form:

- Adoption of the internal reference rate defined by Method 1 for the calculation and allocation of FISIM between resident user sectors, for the reasons already mentioned. This decision is reflected in article 1 a).
- Calculating the allocation of imported and exported FISIM (including FISIM between resident and non-resident financial intermediaries) using the rate defined here as the external reference rate (article 1b).
- Allocation of FISIM among user industries, based on the balances of loans and deposits for each industry or, if this information is not reliable, on the output (in practice the GVA) from each industry (article 1c).
- Calculation of FISIM at constant prices, on the basis of the formula provided in point 3 of Annex III to Council Regulation (EC) No 448/98 (article 1d).

As stated in article 1.2 of Regulation 1889/2002, *the new method will be obligatory for national accounts sent to Eurostat as of January 1st 2005. However, these accounts should include retroactive calculations from 1995 onwards*. The Commission's aim is to give sufficient margin for countries to adapt to the new method and to improve the baseline information needed. At all events, from the information obtained during the trial exercise (see the detailed results obtained for Spain in Annex A), the GDP of the countries concerned will increase, with respect to the current situation, as a result of distributing FISIM as established by Regulation 1889/2002. Obviously these increases will have political and administrative implications, as GDP is the reference for, among other things, EU Member State's contributions to the community budget; for the distribution of European funds; when referring to variables in the Protocol on Excessive Deficit; and when determining the contribution of national central banks in the euro zone and non-participant central banks, to the capital of the ECB. These implications go some way towards explaining the delay in agreeing on a method of allocation (the adoption of any method is, to a greater or lesser extent, a matter of convention) and in applying it (which will finally take place nine years after ESA 95 was adopted).

17. The Statistical Programme Committee (SPC) comprises the presidents of the National Statistical Offices of the Member States of the European Union and is presided by the Director General of Eurostat.

CONSEQUENCES OF ALLOCATING FISIM TO A NOMINAL SECTOR (METHOD IN FORCE PRIOR TO 2005) TABLE 1

	Financial institutions		Non-financial institutions		Households		Nominal sector		National economy		Rest of the world		
Production account	GVA=48	O=48					IC=48 GVA=-48	O=0	IC=48 GDP=0	O=48			External account of goods and services
Entrepreneurial income account	GOS=48	GVA=48					GOS=-48	GVA=-48					
Other income accounts	Int=77 GNI=48	GOS=48 Int=125 FISIM adj=-48	Int=66 GNI=-41	Int=25	Int=63 GNI=-13	Int=50	GNI=0	GOS=-48 FSIM adj=48	Int=206 GNI=-6	Int=200	Int=16	Int=22	External account of primary incomes and current transfers
Secondary income account distribution	GDI=48	PI=48	GDI=-41	PI=-41	GDI=-13	PI=-13			GDI=-6	GNI=-6			
Use of income account	GNS=48	GDI=48	GNS=-41	GDI=-41	GNS=-13	GDI=-13			GNS=-6	GDI=-6	Ext.s.=6		

VERIFICATION: O + M = IC + FC + X 48 + 0 = 48 + 0 + 0 = 48

CONSEQUENCES OF ALLOCATING FISIM TO VARIOUS INSTITUTIONAL SECTORS USING THEN (ALLOCATION THAT WILL COME INTO FOR AS OF 2005) TABLE 2

	Financial institutions		Non-financial institutions		Households		National economy		Rest of the world		
Production account	GVA=48	O=48	IC=18 S=GVA=-18				IC=48 GDP=30	O=48	X=4	M=2	External account of goods and services
Entrepreneurial income account	GOS=48	GVA=48	GOS=-18	GVA=-18			GOS=30	GVA=30	ES=-2		
Other income accounts	Int=106 GNI=48	GOS=48 Int=106	Int=56 GNI=-41	GOS=18 Int=33	Int=55 GNI=-15	Int=70	Int=217 GNI=22	GOS=30 Int=209	Int=13	ES=-2 Int=21	External account of primary incomes and current transfers
Secondary income account distribution	GDI=48	PI=48	GDI=-41	PI=-41	GDI=-15	GNI=15	GDI=22	GNI=22			
Use of income account	GNS=48	GDI=48	GNS=-41	GDI=-41	FC=28 GNS=-13	GDI=15	FC=28 GNS=-6	GDI=22	Ext.s.=6		
Eff. OM int.	Rec=77	Paid=125	Rec=66	Paid=25	Rec=63	Paid=50	Rec=206	Paid=200	Rec=16	Paid=22	

VERIFICATION: O + M = IC + FC + X 48 + 2 = 18 + 28 + 4 = 50

Output of FISIM

For services linked to loans: 125 – 106 = 19

For services linked to deposits: 106 – 77 = 29

ANNEX A: RESULTS FOR SPAIN OF THE TRIAL EXERCISE REFERRED TO IN ARTICLE 4 OF COUNCIL REGULATION 448/98

A.1 Introduction

As stipulated in EU Council Regulation 448/98, between 1999 and 2002 Spain carried out exercises on the calculation of FISIM applying the various methods envisaged in the Regulation. This annex (Annex A) includes the main points of the last of the exercises conducted and the results obtained. To this end, section A.2 briefly mentions the institutional units and instruments that were considered in the exercise. Section A.3 describes the main sources of information used, the estimates that had to be made and any other issues considered worthy of note. Finally, section A.4 presents the main results.

Additionally, as mentioned in the main text of this document, the Banco de España has published the annual results of the trial exercises as they have been completed over the period from 1999-2002. These were published in a series of internal documents which can be supplied to interested parties[18].

A.2 Institutional units and instruments

The institutional units and instruments underlying this exercise are those listed in the Financial Accounts of the Spanish Economy[19], which are produced quarterly by the Banco de España. The units, which are entirely consistent with those of the Spanish National Accounts prepared by the Spanish National Statistics Institute[20], are[21]:

- S.11 Non-financial corporations
- S.121 Central Bank
- S.122 Other monetary financial institutions. In Spain this sub-sector comprises: Banks, savings banks, credit cooperatives, the official credit institute (Instituto de Crédito Oficial, ICO), and specialised credit institutions (mortgage lending corporations, leasing companies, factoring companies and credit institutions). Although in Spain this sub-sector also includes money market funds, for the purposes of this exercise these were included in sub-sector S123 as money market funds are not considered to produce FISIM.
- S.123 Other financial intermediaries, except insurance companies and pension funds (mainly collective investment institutions, financial and non-financial institutions, securities firms, mortgage securitisation funds, and venture capital funds and companies[22]).
- S.124 "Financial auxiliaries" (mainly deposit guarantee funds, securities agencies, portfolio and pension fund management companies, pension funds and investment funds, mutual

18. The most recent of these documents is Calculation and allocation by sector of FISIM produced by the Spanish Financial Institutions for the period 1995-2001 (ES/2002/5).
19. Cuentas Financieras de la Economía Española (CFEE).
20. Instituto Nacional de Estadística, INE
21. For a detailed description of these sectors (and the instruments) see the methodological note on the CFEE published on the Bank of Spain's website at http://www.bde.es
22. See note 12.

guarantee companies, appraisal companies, stock exchange managing companies[23]).

- S.125 Insurance companies and pension funds
- S.13 General government
- S.14/S.15 Households and Non-profit institutions serving households (NPISH)
- S.2 Rest of the world

As indicated in the Regulation, the only sub-sector considered to produce FISIM is S.122 (excluding money market funds). The various methods described in the Regulation were therefore applied to this sector. Sub-sector S.123 was not considered to produce FISIM as, in the case of Spain, the charges for the services this sector provides almost entirely take the form of commissions and, moreover, the investments in financial assets (mostly securities) by institutions in this sub-sector (collective investment funds and similar) mainly derive from own funds and not from third-party deposits. In the case of S.121, the Banco de España, its output of financial intermediation services has been calculated as indicated in annex 1 of the Regulation, i.e. as the sum of its expenses. The remaining sectors and sub-sectors are users or consumers of FISIM. Households are treated as final consumers[24], while the use of FISIM by the remaining sectors is treated as intermediate consumption.

The instruments considered in the exercises are basically deposits, loans and fixed income securities[25].

A.3 Sources of information, estimates made and other aspects of the calculation procedure

The financial assets and liabilities are taken from the Financial Accounts of the Spanish Economy (FASE) prepared by the Banco de España. The interest is taken from the data relating to this item on the non-financial account of the Spanish National Accounts[26] (CNE) included by the National Statistics Office (INE). In turn, this information is drawn from:

- The information reported by the institutions to the Banco de España in order to comply with the statistical requirements of the European Central Bank, and which is published in the Banco de España Statistical Bulletin.
- The financial statements reported by the institutions to the Banco de España for supervisory reasons. These are basically the balance sheet and profit and loss statement.
- These are also published in the Banco de España Statistical Bulletin. In some cases direct use of these account statements has been made when the necessary information is not given explicitly in the financial and non-financial accounts.
- In order to estimate imports of FISIM balance of payments information prepared by the Banco de España has been used.

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23. See note 13.

24. In other words, excluding individual entrepreneurs constituted as companies and the activity of households relating to the purchase of the home, for which the FISIM used are treated as intermediate consumption.

25. For a detailed description of the instruments the methodological note mentioned in the footnote to page 19 may be consulted.

26. The Bank of Spain provides the INE with an initial estimate of these accounts, prepared from the information available in its databases for all the financial intermediaries included in the financial institutions sector, except insurance companies and pension funds (S.121, S.122 and S.123).

The Financial Accounts of the Spanish Economy are produced quarterly for all sectors. The non-financial accounts of financial intermediaries in the financial institutions sector are also available quarterly. As mentioned, these are sent to the INE annually. The INE has ultimate responsibility for the non-financial accounts of all sectors. The quarterly nature of both sets of accounts has enabled FISIM to be calculated and allocated on a quarterly basis, rather than only on the annual basis stipulated in the Regulation. However, the information sent to Eurostat was converted into annual data from the quarterly data available. The annual data on balances was obtained by the following formula:

$$\frac{½ * \text{Dec}\,[t-1] + \text{Mar}\,[t] + \text{Jun}\,[t] + \text{Sep}\,[t] + ½ * \text{Dec}\,[t]}{4}$$

and the annual flow of interest was obtained as the sum of the quarterly interest.

The use of quarterly data enables more precise estimates to be made as, in the case of balances, it allows a closer approximation to the annual average to be obtained than by having the sum of two years' annual data.

The main limitations of this exercise derive from the fact that the sources of information available have not always been as complete as needed to prepare the FISIM as demanded by Regulation 448/98. Therefore, in some cases it has been necessary to resort to estimates. The least robust estimates, for which the data obtained should be taken with greatest caution, are:

- The classification by maturity of instruments and interest as established by "method 3".
- Imports of FISIM. A process of improvements to these estimates is in progress.
- The distribution of interest received and paid by households by purpose, particularly in the case of deposits, for the distribution of which no information was available. This estimate was carried out based on that made for loans. In the case of the latter, comparing different sources of information made it possible to estimate the proportion of total loans to households by financial and monetary institutions that loans to entrepreneurs represent. A similar proportion was applied in the case of deposits.

A.4 Main results

FINANCIAL SERVICES PRODUCED BY THE BANCO DE ESPAÑA. REFERENCE INTEREST RATES. FISIM OBTAINED BY APPLYING THE REFERENCE RATES.

Four tables are presented below summarising the main features of the last FISIM calculation exercise in 2002. *Table 1A* compares the estimated *output of financial services of the Banco de España* according to the method in Regulation 448/98 (sum of expenses incurred) with the current method.

As can be seen, the two results differ substantially. This is to be expected given the differences in the methods used.

Table 2A shows the *different reference interest rates* obtained by applying the methods described above. These rates were used in the trial period to calculate the FISIM produced by sub-sector S.122. (financial and monetary institutions other than the Central Bank).

Table 3A presents the output of FISIM produced by sub-sector 122 comparing, as in the case of the Banco de España, the current and future methods, according to the various alternatives, regarding the reference rate envisaged in Regulation 448/98. The output of FISIM shown by the figures is total output, i.e. it includes that consumed by both resident and non-resident sectors (exports of FISIM). As may be observed, in particular when averages over the period are compared, the differences presented by the various methods are not substantial. A similar conclusion was also reached in other countries. Method 2 was not considered appropriate for Spain as securities issued by financial institutions whose interest rates were relatively high during much of the period, as a result of competition with other securities issuers, in particular the state, were included. This means that, in general, the reference rate for this method differs somewhat from the others and, therefore, the difference in the FISIM estimate is more than that in the other methods. The reference rate calculated according to method 3 raises a similar problem to that in method 2, given that an interest rate for securities is applied to long-term balances. Moreover, it suffers at times from difficulty in distinguishing between short and long-term balances and interest. Lastly, the reference rates obtained by methods 4ª, 4b and 4c are not considered to be valid as estimates were needed to calculate them, and it is difficult to understand their economic sense. Other countries reported similar objections, thus Method 1, which was finally selected by the Commission (Eurostat) seemed by far the most logical solution.

INCREMENT IN GDP RESULTING FROM THE NEW ALLOCATION OF FISIM TO USER SECTORS/INDUSTRIES RATHER THAN A NOMINAL SECTOR/INDUSTRY

As indicated in section 3 of the main text, one of the principal distortions caused to national accounts by the current treatment of FISIM is the way it reduces the economy's GDP. This reduction is mainly due to the fact that the current method considers the whole output of FISIM to be consumed as an intermediate input by a nominal industry. Moreover, this method does not take into account imports of FISIM into the economy. Therefore, the most significant outcome of the exercise concerning FISIM is that, when the new system for allocating FISIM is applied, an increase in GDP will be registered. The increase in GDP for the Spanish economy is shown in Table 4A, reflecting the results obtained by means of the various different methods considered. As can be seen, over the period as a whole, the increase in GDP falls in a range between 2.00 percentage points in 1995, according to Method 2, and 0.82 points in 1999, according to Method 1. Taking the average of the seven years covered by the exercise, the difference between the methods reaches a maximum value of 0.26 points (1.51% of GDP by method 2 and 1.25% by method 1). Given that the method finally selected was method 1, the average increase in Spain's GDP would be 1.25 points in the period considered (1995-2001). Another point to highlight in the case of the Spanish economy is that the importance of imports and exports of FISIM is very similar, although the relative weight of imports of FISIM is somewhat greater than that of exports of these services.

Obviously, in countries whose financial institutions, as well as being more active internationally, have a greater relative weight within the total activity of resident units, the

exports of FISIM differ considerably from imports of these services and the impact of the output of FISIM on GDP is greater than in Spain. Nevertheless, with just one or two exceptions, in most cases the impact on GDP of applying the new method is not substantially different from that in Spain.

ESTIMATES OF FISIM AT CONSTANT PRICES BY INDUSTRY

Spain estimated FISIM at constant prices and by industry for the last year of the exercise. The results are shown in Tables 5A and 6A, respectively. The deflator used to obtain the distribution of FISIM at constant prices, for both internal sectors and imports and exports, was the implicit final demand deflator.

For the distribution of FISIM by industries, of the two alternatives indicated in section 3.2 of the main text, and included in Commission Regulation 1889/2002, the Banco de España used Method b). This implies that the calculation was based on distributing total FISIM in direct proportion to the gross added value of each industry. It should be pointed out that these estimates were made using incomplete information, so as extremely provisional. Method a), based on the distribution, based on an estimate of the balances of loans and deposits with each industry, presented greater difficulties. In principle there was no reason why this should be the case as Spain has statistics covering loans granted to non-financial companies and households for productive activities, and loans granted to households and NPISH for consumption spending. The problem is that, as well not having the distribution of deposits by industry, the loans in the aforementioned statistics are allocated to companies according to their main activity, while the national accounts obtain GDP per industry by grouping uniform production units performing the same activity into industries. Thus the validity of this statistic for this kind of allocation is highly debatable.

Table 1A. Output of financial services from the Banco de España measured as the sum of costs (1) and according to the method currently in force (2).

millions of euros

	1995	1996	1997	1998	1999	2000	2001	Average over period
Sum of costs	253	256	257	271	298	313	437	298
Current method	3,813	3,317	3,267	3,145	2,103	2,982	2,534	3,023

1. Intermediate consumption + employee compensation + consumption of fixed capital.
2. ESA 95, paragraph 3.63.

TABLE 2A. Reference interest rate (Results for Spain)

%

Internal	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**
1. Method 1	8.55	7.50	5.59	4.25	3.24	4.23	4.39
2. Method 2	8.91	7.96	6.35	5.07	4.12	5.25	5.56
3. Method 3	7.94	7.83	5.93	4.49	3.52	4.93	4.61
4. Method 4a	8.08	7.55	5.77	4.67	3.64	4.05	4.48
5. Method 4b	8.31	7.52	5.68	4.46	3.44	4.14	4.44
6. Method 4c	8.49	7.76	6.06	4.87	3.89	4.65	5.02
External	6.72	5.97	5.06	4.67	3.56	4.40	4.23

Table 3A. Output of FISIM(1) produced by sub-sector 122(2) according to the different methods given in Regulation 448/98 and according to the method in force up until 2005(3) (Results for Spain)

millions of euros

	1995	1996	1997	1998	1999	2000	2001	Average over period
1. Method 1	18,241	18,054	18,017	17,161	16,852	19,112	22,651	18,584
2. Method 2	18,424	18,336	18,363	17,244	16,550	18,504	21,882	18,472
3. Method 3	18,951	18,515	18,192	17,072	16,445	17,645	22,834	18,522
4. Method 4a.	18,012	18,083	18,100	17,182	16,720	19,224	22,598	18,560
5. Method 4b.	18,125	18,068	18,059	17,172	16,786	19,167	22,625	18,572
6. Method 4c	18,219	18,209	18,231	17,212	16,636	18,862	22,238	18,515
7. Output of FISIM. Current method[3]	14,530	14,870	15,646	16,223	16,950	18,290	23,461	17,139
Differences								
1-7	3,711	3,184	2,371	948	-98	923	-810	1,446
2-7	3,894	3,466	2,717	1,021	-400	214	1,579	1,333
3-7	4,421	2,645	2,456	849	-505	-645	-627	1,383
4-7	3,482	3,213	2,454	959	-230	934	-863	1,421
5-7	3,595	3,198	2,413	949	-164	877	-836	1,433
6-7	3,689	3,339	2,585	989	-314	572	-1,223	1,376

1. Includes both output consumed by residents and exports.
2. Except money market funds.
3. ESA 95, paragraph 3.63.

Table 4A. Impact on GDP of the output of FISIM with the application of Method 1 of Regulation 448/98 (Results for Spain)

% of GDP

	1995	1996	1997	1998	1999	2000	2001	Average over period
A. TOTAL = B+C-D								
1. Method 1	1.87	1.55	1.19	0.86	0.82	1.20	1.26	1.25
2. Method 2	2.00	1.71	1.44	1.10	1.08	1.53	1.69	1.51
3. Method 3	1.73	1.82	1.42	0.99	1.14	1.49	1.47	1.44
4. Method 4a.	1.69	1.57	1.25	0.98	0.94	1.15	1.30	1.27
5. Method 4b.	1.78	1.56	1.22	0.92	0.88	1.18	1.28	1.26
6. Method 4c	1.85	1.64	1.34	1.04	1.01	1.34	1.49	1.39
Memorandum: GDP	437,786	464,250	494,137	527,953	565,483	608,787	650,193	
B. Final consumption by residents								
1. Method 1	1.85	1.55	1.35	1.08	0.99	1.29	1.30	1.34
2. Method 2	1.99	1.71	1.60	1.32	1.24	1.61	1.72	1.60
3. Method 3	1.71	1.81	1.58	1.21	1.31	1.57	1.50	1.53
4. Method 4a.	1.68	1.57	1.41	1.20	1.11	1.23	1.33	1.36
5. Method 4b.	1.77	1.56	1.38	1.14	1.05	1.26	1.31	1.35
6. Method 4c	1.84	1.64	1.50	1.26	1.18	1.42	1.52	1.48
C. Exports	0.26	0.22	0.15	0.14	0.07	0.22	0.29	0.19
D. Imports **(1)**	0.25	0.22	0.31	0.36	0.24	0.30	0.32	0.29

1. Imports of FISIM by sectors using them an intermediate input.

Table 5A. Output of FISIM (1) produced by sub-sector 122 (2) according to the different methods given in Regulation 448/98 and according to the method in force up until 2005 (Results for Spain)

millions of euros

	1995	1996	1997	1998	1999	2000	2001	Average over period
Method 1	18,241	17,441	17,010	15821	15,105	16,564	18,889	17,010
Method 2	18,424	17,713	17,338	15,897	14834	16,036	18,247	16,927
Method 3	18,951	17,886	17,176	15,739	14,740	15,292	19,041	16,975
Method 4a.	18,012	17,468	17,089	15,840	14,986	16,660	18,844	16,986
Method 4b.	18,125	17,454	17,050	15,830	15,045	16,611	18,867	16,997
Method 4c	18,219	17,590	17,213	15,867	14,911	16,347	18,544	16,956

1. Includes both output consumed by residents and exports.
2. Except money market funds.

Table 6A. Output of FISIM produced by sub-sector 122, according to method 1, allocated by industry (Results for Spain)

millions of euros

	1995	1996	1997	1998	1999	2000	2001	Average over period
1. Agriculture, hunting, forestry and fishing	261	270	271	294	263	250	322	248
2. Mining and quarrying	104	108	108	117	105	100	129	110
3. Manufacturing	1885	1941	1952	2118	1891	1801	2318	1986
4. Electricity, gas and water supply	157	162	163	177	158	150	194	166
5. Construction	576	593	596	647	578	551	708	607
6. Wholesale, retail trade, repair of motor vehicle household goods	576	593	596	647	578	551	708	607
7. Hotels and restaurants	419	431	434	471	420	400	515	441
8. Transport, storage and communications	367	378	380	411	368	350	451	386
9. Financial intermediation	803	903	915	860	984	845	803	873
10. Insurance and pension schemes	262	46	29	61	267	308	308	183
11. Supporting activities to financial intermediation	49	58	57	54	58	109	138	75
12. Real estate, renting and business services	890	917	922	1000	894	850	1095	938
13. General government	685	730	542	463	336	385	640	540
14. Households	9821	9707	10090	9156	9598	11329	12596	10328
15. NPISH	234	181	197	179	240	160	160	193
Output consumed by residents (sum of 1 to 15)	17089	17018	17252	16655	16738	18139	21085	17681
Output exported	1152	1036	765	749	405	1309	1866	1040
TOTAL (1)	**18241**	**18054**	**18017**	**17404**	**17143**	**19448**	**22951**	**18721**

1. See Table 3A.

ANNEX B: ANNEX III OF COUNCIL REGULATION 448/98

ANNEX III

CALCULATING FISIM

1. CALCULATION OF FISIM OUTPUT BY SECTOR S122 AND S123

(a) Statistical data required

For each of the sub-sectors S122 and S123[27], it is necessary to use the table of average stocks of loans, deposits (split by user sectors) and the securities other than shares issued by FI for the period (average of four quarters) and the accrued interest, after reallocation of interest rate subsidies to their actual recipients as defined by the 1995 ESA.

(b) The choice of a reference rate

In the balance sheets of financial intermediaries included in S122 and S123 loans and deposits with resident units have to be broken down to differentiate between loans and deposits:

— which are interbank (i.e. within the institutional units included in sectors S122 and S123);
— which are undertaken with the user institutional sectors (S11 - S124 - S125 - S13 - S14 - S15) (except with the central banks).

In addition to that, loans and deposits with the rest of the world (S2) should also be broken down into loans and deposits with non-resident financial intermediaries and loans and deposits within other non-residents.

In the trial period of five years Member States are required to compare the results on the allocation of FISIM by using the internal reference rate calculated according to the following four methods:

Method 1

To obtain the FISIM output of the resident FIs by institutional sector, the 'internal' reference rate is calculated as the ratio of interest receivable on loans between S122 and S123 to stocks of loans between S122 and S123.

$$\frac{\text{interest receivable on loans between S122 and S123}}{\text{stock of loans between S122 and S123}}$$

Method 2

To obtain the FISIM output of the resident FIs by institutional sector, the 'internal' reference rate is calculated as the weighted average of the rates on both interbank loans and

27. The financial intermediaries to be considered are the sectors S122 (other monetary financial institutions) and S123 (other financial intermediaries, except insurance corporations and pension funds), except investment funds.

on securities other than shares issued by FIs. The weights are the level of stocks in the headings loans between resident FIs included in S122 and S123 and securities other than shares issued by the resident financial intermediaries included in S122 and S123.

$$\frac{\text{interest receivable on loans between S122 and S123} + \text{interest on securities other than shares issued by S122 and S123}}{\text{stock of loans between S122 and S123} + \text{securities other than shares issued by S122 and S123}}$$

If the institutional characteristics of the national banking systems do not allow to calculate this rate (e.g. because banks do not issue securities other than shares), then an alternative reference rate should be used. This rate can be calculated by using the stocks and interest flows of assets (excluding loans)/liabilities (excluding deposits) whose average time to maturity is the nearest to that of the liabilities in the balance sheets of FIs included in S122 and S123.

Method 3

To obtain the FISIM output of resident FIs by institutional sector, two reference rates can be applied, one for short term transactions (calculated as in Method 1) and one for long term transactions (using published rates for securities other than shares whose maturity reproduces that of the liabilities in the balance sheet with a long maturity).

Method 4

To obtain the FISIM output of the resident FIs by institutional sector, the 'internal' reference rate is calculated according to the three alternatives below:

(a) as an average of lending and deposits rates which are undertaken with the resident institutional sectors (S124 - S125 - S11 - S13 - S14 - S15) (except with the central banks);

(b) as an average between the average of lending and deposits rates which are undertaken with the resident user institutional sectors (S124 - S125 - S11 - S13 - S14 - S15) (except with the central banks) and the implicit interest rate calculated as in Method 1;

(c) as an average between the average of lending and deposits rates which are undertaken with the resident user institutional sectors (S124 - S125 - S11 - S13 - S14 - S15) (except with the central banks) and the implicit interest rate calculated as in Method 2.

To determine FISIM imports and exports, the reference rate used is the average interbank rate weighted by the levels of stocks in the headings 'loans between S122 and S123 on the one hand, and non-resident FIs on the other hand' and 'deposits between S122 and S123 on the one hand, and non-resident FIs on the other hand', which are included in the balance sheet of the financial intermediaries.

This calculated rate is the 'external' reference rate which is used to calculate FISIM exports and imports.

In the trial period the calculation should be done distinguishing the internal and external reference rates both on the basis of the residence of the FIs engaged in the transactions and on the basis of the currencies in which these transactions are denominated.

Member States are required to provide Eurostat with all the statistical information used in the methodology applied.

(c) Detailed breakdown of FISIM by institutional sector

For each institutional sector it is necessary to have the following table of loans and deposits granted by the resident FIs:

	Stock	Interest collectable		Stocks	Interest payable
Loans granted by resident FIs } S122 S123			Deposits with resident FIs } S122 S123		

The total FISIM by institutional sector is obtained as the sum of FISIM on loans granted to the institutional sector and of FISIM on deposits of the institutional sector.

FISIM on the loans granted to the institutional sector = interest receivable on loans - (loan stocks × 'internal' reference rate)

FISIM on the deposits of the institutional sector = (deposit stocks × 'internal' reference rate) - interest payable on deposits

Part of the output is exported; on the basis of the balance sheet of the financial intermediaries (S122 and S123) we observe:

	Stock	Interest collectable		Stocks	Interest payable
Loans granted to non-residents			Non-resident deposits		

Exported FISIM is calculated using the 'external' interbank reference rate as follows:

FISIM on loans granted to non-residents (including FIs) = interest receivable - (loan stock × 'external' reference rate)

FISIM on the deposits of non-residents (including FIs) = (deposit stocks × 'external' reference rate) - interest payable

(d) Breakdown into intermediate and final consumption of FISIM allocated to households

The services attributable to households must be broken down into:

— intermediate consumption of households in their capacity as owners of dwellings,

— intermediate consumption of households in their capacity as owners of unincorporated enterprises,
— final consumption of households.
— It entails a breakdown of loans to households (stocks and interest) into:
— dwelling loans,
— loans to households as owners of unincorporated enterprises,
— other loans to households.

Loans to households as owners of unincorporated enterprises and dwelling loans are generally shown separately in the various breakdowns of lending in financial and monetary statistics. Other loans to households can be obtained by subtraction. FISIM for loans to households should be distributed among three items (dwelling loans, loans to households as owners of unincorporated enterprises and other loans to households) on the basis of information on stocks and interest for each of the three groups. Dwelling loans are not identical to mortgage loans, as mortgage loans can have other purposes.

Household deposits must be broken down into:

— deposits of households as owners of unincorporated enterprises,
— deposits of individuals.

In the absence of statistics on deposits of households as owners of unincorporated enterprises in the trial period of five years Member States are required to compare the results on the allocation of FISIM by using the following two methods:

Method 1

Stocks can be calculated on the basis of the ratio of deposits to value added observed for the smallest size corporations and extrapolated for unincorporated enterprises.

Method 2

Stocks can be calculated on the basis of the ratio of deposits to turnover observed for the smallest size corporations and extrapolated for unincorporated enterprises.

FISIM on the deposits of households must be distributed between FISIM on the deposits of households as owners of unincorporated enterprises and that on the deposits of households as consumers on the basis of the average stocks of these two categories, for which, owing to lack of further information, the same interest rate may be used.

As an alternative, especially in the case more detailed information on loans and deposits of households is absent, FISIM to households can be allocated to intermediate consumption and final consumption assuring that all loans are attributable to households as producer or as owners of dwellings and that all deposits are attributable to households as consumers.

2. CALCULATION OF IMPORTED FINANCIAL INTERMEDIATION

Non-resident FIs grant loans to residents and receive deposits from residents. By institutional sector it is necessary to have the following table:

	Stock	Interest collectable		Stocks	Interest payable
Loans granted by non-resident FIs			Deposits with non-resident FIs		

The financial intermediation imported by each institutional sector is therefore calculated as follows:

FISIM imported for loans = interest receivable by non-resident FIs - (loan stocks × 'external' reference rate)

FISIM imported for deposits = (deposit stocks × 'external' reference rate) - interest payable by non-resident FIs

3. FISIM AT CONSTANT PRICES

The difference between the reference rate and the effective rate of interest represents the margin earned by the financial intermediary, and thus can be considered to be the price paid for the service provided. FISIM at constant prices are derived as the quotient of the value of FISIM on loans and deposits held by S122 and S123 and this price. The stocks of loans and deposits are revalued to base period prices using a general price index (e.g. the implicit price deflator for domestic final demand).

$$\text{FISIM on loans to institutional sector at constant prices} = \frac{\dfrac{\text{FISIM on loans to institutional sector}}{\text{Price index}}}{\dfrac{\text{Margin on base year}}{\text{Effective margin}}}$$

$$\text{FISIM on deposits from institutional sector at constant prices} = \frac{\dfrac{\text{FISIM on deposits from institutional sector}}{\text{Price index}}}{\dfrac{\text{Margin on base year}}{\text{Effective margin}}}$$

Base period margin on loans = effective interest rate on loans - reference rate

Base period margin on deposits = reference rate - effective interest rate on deposits

ANNEX C: ESTIMATE OF THE OUTPUT OF FISIM AND ITS ALLOCATION BY SECTORS. COMPARISON OF THE METHODS IN EFFECT PRIOR TO 2005 AND AFTER 2005

ASSUMPTIONS:

a. The national economy consists of the following sectors:

1 *Financial institutions (FI)*

This is the only sector producing financial intermediation services. Part of these services are charged for explicitly as tariffs and commissions, and the rest implicitly by including these charges with interest ("pure" interest) charged on funds lent and paid for funds borrowed (FISIM).

2 *Non-financial corporations*

FISIM consumer sector. Accounts for all intermediate consumption.

3 *Households*

A FISIM consumer sector. The portion of these services used by individual entrepreneurs not constituted as companies and by households for the purchase of the home is considered intermediate consumption by Households. The rest is considered final consumption by households.

4 *Nominal sector*

In the current method this is a sector which produces nothing. Its sole function is to consume the entire output of FISIM as intermediate consumption. In the future method this sector will not exist.

b. Intermediation between resident units in sector 1 do not produce FISIM. It is therefore considered that this sector has no intermediate consumption of FISIM produced by resident financial institutions.

c. Sector 1 exports FISIM deriving from loans granted to non-residents and on deposits placed by non-residents.

d. Sectors 1, 2 and 3 consume FISIM produced by non-resident FI (imports of FISIM) deriving from loans granted by non-resident FI and the placing of deposits with non-resident FI.

e. In order to estimate the output of FISIM using the method in force, it is assumed that the own funds of sector 1 are invested in fixed assets and other permanent investments and that both groups are the same (see the diagram below). In this case, the block of intermediated funds (liabilities) and the block of loans and securities other than shares (assets) will also be the same.

Balance sheet for sector 1

A	Fixed assets and other permanent investments	Own funds	
B	Loans and securities other than sahres	Intermediated funds	C

Through block A, sector 1 obtains income on property other than interest. Through block B it obtains interest income (interest charged), the total of which will be equal to the "pure" interest on the funds lent plus the FISIM charge. Through block C it pays interest (interest paid). These payments include “pure” interest on borrowed funds less charges for FISIM on this service.

f. To make it easier to compare the macroeconomic variables to be produced it will be assumed that:

1 *There are no taxes or subsidies in the Output account. Therefore, only intermediate output and consumption will be recorded.*

2 *The operating account only has one heading: gross value added in the sector accounts, and GDP in the national economy account*. Therefore,

i) GOSj = GVAj (see below for the meaning of the abbreviations)

ii) GOS = GDP

3 *The primary income allocation account has as its income, as well as GOS, the interest received from both residents and non-residents, and as outgoings, the interest paid to both residents and non-residents.*

The abbreviations used are as follows:

OD1 = Output of sector 1 corresponding to services this sector charges for directly.
OF1 = Output of sector 1 corresponding to services this sector charges for implicitly (=FISIM).
Oi = Output of sector i (i = 1, 2, 3).
IC = Intermediate consumption.
ICF = Intermediate consumption of FISIM.
ICO = Intermediate consumption other than FISIM.
ICSi,NR = Intermediate consumption of services by sector i produced by non-residents.
ICSi,R = Intermediate consumption of services by sector i produced by residents. As the only resident sector producing services is 1.
ICSi,R = ICSi,1
ICOi = Intermediate consumption other than FISIM by sector i.
FC = Final consumption.
FCF3 = Final consumption of FISIM by households.
FCO = Final consumption other than FISIM.
XF = Consumption of FISIM by non-residents (exports of FISIM).
MSj = Consumption of FISIM produced by non-resident FI by sector j (j= 1, 2, 3). (imports of FISIM).
IR = Interest received.
IP = Interest paid.
PIR = Pure interest received (strict charging for funds lent).
PIP = Pure interest paid (strict charging for funds borrowed).
FL = FISIM corresponding to loans.
FD = FISIM corresponding to deposits.
GVA = Gross value added.
GDP = Gross domestic product.
GOS = Gross operating surplus.
BPA = Balance on the primary income allocation account.
GNI = Gross national income.
GDI = Gross disposable income.
GS = Gross savings.

COMPOSITION

Method in force prior to 2005	Method in force as of 2005
1. Output of sector 1	**1. Output of sector 1**
O1 = OE1+OF1	O1 = OD1+OF1
OF1 = IR1 – IP1 (except IR for investment of own funds)	OF1 = FL1 + FD1
Moreover:	O1 = OD1 + FL1 + FD1
IR1 = PIR1 + FL1 and IP1 = PIP1 – FD1	
O1 = OD1 + FL1+FD1+PIR1-PIP1	
2. Intermediate consumption of sector 1	**2. Intermediate consumption of sector 1**
IC1 = ICO1	IC1 = ICO1 + ICS1,NR = ICO1 + MS1
3. GVA of sector 1	**3. GVA of sector 1**
GVA1 = O1 – IC1	GVA1 = O1 – IC1
GVA1 = OD1 + PIR1 – PIP1 + FL1 + FD1 – ICO1 (1)	GVA1 = OD1 + FL1 + FD1 – ICO1 – MS1 (1*)
If PIR1 • PIP1	**Conclusion:**
	(1) > (1*)
4. GVA of sectors 2 and 3	**4. GVA of sectors 2 and 3**
GVAi = Oi – ICOi (2) i = 2,3	GVAi = Oi – ICSi, R – Msi - ICOi
	Conclusion:
	(2) > (2*)
5. GVA of nominal sector (sector 4)	**5. No nominal sector (sector 4)**
O4 = 0	
IC4 = OF1	
GVA4 = O4-IC4 = -OF1	
6. Production account of the economy	**6. Production account of the economy**
GDP = ∑GVAj j=1,2,3,4	GDP = ∑GVAj = (O1+O2+O3) – (IC1+IC2+IC3)
GDP = ∑Oj - ∑ICj	GDP = (OD1+FL1+FD1+O1+O3) - ∑ICOj – (ICS2,1+ICS3,1) - ∑MSj (3*)

Method in force prior to 2005	Method in force as of 2005
GDP = OD1+OF1+O2+O3-ICO1-ICO2-ICO3-OF1 GDP = [OD1 + O1 + O3] - ∑ICOj (3)	(3*) = (3) + (FLj + FDj) – (ICS2,1 + ICS3,1) – ∑MSj Given that FL1 = FL1,R + FL1,NR FD1 = FD1,r + FD1,NR FL1,R + FD1,r = ICS2,1 + ICS3,1 + FCF3 FL1,NR + SD1,NR = XF (3*) = (3) + FCF3 + XF - ∑MSj j=1,2,3
Conclusion	
	If XF > ∑MSj then clearly (3*) > (3) If XF < ∑MSj it is logical to suppose that (FCF3 + XF - ∑MFj) > 0
Therefore, **(3) < (3*)**	
7. Operating account for sectors 1, 2 and 3 of the National Economy Assumptions: GOS1 = GVA1 (4) GOSi = GVAi (5) i = 2,3 GOS = GDP (6)	**7. Operating account for sectors 1, 2 and 3 of the National Economy** Assumptions: GOS1 = GVA1 (4*) GOSi = GVAi (5*) i = 2,3 GOS = GDP (6*)
Conclusion **(4) > (4*)** **(5) > (5*)** **(6) > (6*)**	
8 Allocation account of primary income in sector 1 BPA1 = GOS1 + IR1 – IP1 – OF1 As GOS1 = GVA1 and GVA1 = OD1 + OF1 – ICO1 BPA1 = OD1 + OF1 – ICO1 + PIR1 + FL1 – PIP1 + FD1 – OF1 (7)	**8 Allocation account of primary income in sector 1** BPA1 = GOS1 + PIR1 – PIP1 As GOS1 = GVA1 and GVA1 = OD1 + FL1 + FD1 – ICO1-MS1 BPA1 = OD1 + (FL1+FD1) – ICO1-MS1 + PIR1 – PIP1 (7*)

Method in force prior to 2005	Method in force as of 2005
Conclusion **(7) > (7*)**	
8 Allocation account of primary income in sectors 2 and 3	**8 Allocation account of primary income in sectors 2 and 3**
BPAi = GOSi + IRi – IPi	BPAi = GOSi + PIRi – PIPi
BPAi = Oi - ICOi + (PIRi - FDi) – (PIPi + FLi)	BPAi = Oi - ICSi – ICOi + PIRi – PIPi (8*)
BPAi = Oi – ICOi + PIRi – PIPi – ICSi – FCF3 (8)	
Conclusion **(8) > (8*)**	
9. National economy primary income allocation account	**9. National economy primary income allocation account**
GNI = GOS + IR – IP = GDP + IR – IP	GNI = GOS + PIR – PIP = GDP + PIR – PIP
GNI = OD1+O2+O3 - ∑ICOj + ∑IRj - ∑IPj	GNI = OD1 + OF1 + O2 + O3 - ∑ICOj – (ICS2,1+ICS3,1) - ∑MSj + (PIR-PIP)
GNI = OD1+O2+O3 - ∑ICOj + (IR1,2+IR1,3+IR1,NR+IR2,1+IR2,NR+IR3,1+IR3,NR)-(IP1,2+IP1,3+IP1,NR+IP2,1+IP2,NR+IP3,1+IP3,NR)	GNI = OD1+O2+O3+FL1,2+FL1,3+FL1,NR+FD1,2+FD1,3+FD1,NR - ∑ICOj – (ICS2,1+ICS3,1) - ∑MSj + (PIR-PIP)
Given that:	Given that:
IR1,2 = IP2,1	FL1,2 + FD1,2 = ICF2,1
IR1,3 = IP3,1	FL1,3+FD1,3 = ICF3,1 + FCF3
IP1,2 = IR2,1	FL1,NR+FD1,NR = XF
IP1,3 = IR3,1	PIR1,j = PIPj,1
	PIP1,j = PIRj,1
GNI = OD1+O2+O3 - ∑ICOj + (IR1,NR+IR2,NR+IR3,NR)-(IP1,NR+IP2,NR+IP3,NR)	
	GNI = OD1+O2+O3 - ∑ICOj + ICF2,1+ICF3,1+FCF3+XF-(ICF2,1+ICF3,1)- ∑MSj + ∑PIRj,NR - ∑PIPj,NR
GNI = OD1+•Oi - •ICOj + (PIR1,NR-FL1,NR+PIR2,NR-FD2,NR +PIR3,NR-FD3,NR) - (PIP1,NR-FD1,NR+PIP2,NR-FL2,NR +PIP3,NR-FL3,NR)	
	GNI = OD1 + ∑Oi - ∑ICOj + FCF3 + XF - ∑MSj + ∑PIRj,NR - ∑PIPj,NR (9*)
Given that:	

Method in force prior to 2005	Method in force as of 2005
FL1,NR + FD1,NR = XF FL2,NR + FD2,NR = MS2 FL3,NR + FD3,NR = MS3 GNI = OD1 + ∑Oi - ∑ICOj + ∑PIRj,NR -∑PIPj,NR + XF - ∑MSj (9)	 9* = 9 + FCF3
Conclusion **(9) < (9*)**	
11 Secondary distribution of income Account balance = Gross disposable income (GDI) Assumption: GDI = GNI **Utilisation of disposable income account**	**11 Secondary distribution of income** Account balance = Gross disposable income (GDI) Assumption: GDI = GNI **Utilisation of disposable income account**
GS = GDI – FCO	GS = GDI – FC GS = GNI – FC GS = GNIcm + FCF2 – (FCO + FCF2) Where GNIcm = GNI by current method
Conclusion: the economy's gross saving (GS) figure is the same using both methods, therefore the balance of the capital account will also be the same.	

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