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RESULTS OF IMPLEMENTING THE FISIM CALCULATIONS  
BY MEMBER STATES  
(COUNCIL REGULATION N°448/98)

Invited Paper submitted by Eurostat\*\*

Summary

A Council regulation of 16 February 1998 defines basic principles of allocating FISIM in national accounts and introduces a trial period. This paper presents a summary of the first results obtained for the years 95 to 98 by Member States in testing the feasibility of allocating FISIM.

First, the availability of data is presented. Information is more reliable on the S122 sector (other monetary financial institutions) than on the S123 sector (other financial intermediaries, except insurance corporations and pension funds), but the latter plays a marginal role in most Member States.

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\* Due to the late submission, the paper could not be translated before the Meeting.

\*\* Prepared by Mr. Christian Ravets.

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Information on stocks of loans and deposits is available from direct sources, with a breakdown by user sectors. In general, less detailed information is available on interest flows than on stocks: in a majority of countries, information on interest flows is available from direct sources, but with no breakdown between institutional sectors, and it is therefore necessary to estimate interest rates for each institutional sector in order to calculate this breakdown.

Difficulties are met in the calculation of imports of FISIM (exports being better known) and in the breakdown of households' deposits (and to a lesser extent, of households' loans) in order to determine the part corresponding to final consumption and the part corresponding to intermediate consumption.

Despite of this lack in direct sources, Member States were able to implement the method and to test the different reference rates introduced by the regulation. Therefore, Eurostat considers that allocating FISIM can be feasible and reliable if improvements continue to be made in data sources.

The sum of detailed FISIM allocated to users differs from the "global" FISIM as defined now. The difference - positive or negative in Member States - mainly depends on interest payable less receivable by Financial Intermediaries (FIs) on securities other than shares.

According to the FISIM regulation, the output of the Central Banks should be calculated as the sum of cost and Member States in their reports are in favour of this method.

The impact on GDP of allocating FISIM represents on average 1,5%, this increase being mainly due to the increase of the final consumption of households.

Six reference rates have been tested, the stability of their results was examined and Member States expressed preferences, most of them wishing for a reference rate that is satisfactory from the conceptual point of view. Method 2 (basing the reference rate on interbank transactions and on interest on securities other than shares) or Method 1 (basing the reference rate on interbank transactions) seem to match best. They are also satisfactory from the point of view of the volatility of results, but it is necessary to complete the

exercise on more years, and to know the results of all Member States before being able to assess a strong opinion.

The results of this first test exercise will be built on and improved in 2000 and 2001.

## **INTRODUCTION**

1. This paper presents a summary of the first results obtained by the Member States in testing the feasibility of allocating FISIM as defined in the Council regulation of 16 February 1998.

2. The required calculations to be implemented by the Member States are described in Annex III of the same regulation and the first results have to be presented for the 1995-1998 period.

3. This first step should in principle be achieved, as the deadline for this exercise was no later than November 1999. At end of January 2000 ten EU countries had provided Eurostat with their first testing calculations and/or comments, plus Slovakia. The EU countries are Belgium, Denmark, Germany, Spain, Italy, the Netherlands, Portugal, Austria, Finland and the United Kingdom. Germany only provided a part of the tables, and will soon send further comments and calculations.

4. Consequently, Eurostat is not in a position to present final conclusions and proposals on this exercise, which is currently under processing in several Member States and will continue until April 2002 (for calendar years 1999, 2000 and 2001).

5. However, given the information already received on the real data, it seems opportune to portray the main problems encountered by the countries in doing this exercise and the most important results that have already been obtained.

## **SYNTHESIS OF THE MAIN AVAILABLE DATA SOURCES**

### **Reminder**

6. The main decision taken by the Council has been to calculate and allocate FISIM only on loans and deposits granted by Financial Intermediaries (FIs) to users sectors, because the interest rates of those loans and deposits are

controlled by the FIs. The calculation of FISIM on loans and deposits should be made on the basis of the difference between the actual interest rates payable and receivable and a "reference" rate of interest.

7. Annex III of the Council regulation presents the required statistical data for the calculation and allocation of the FISIM produced. It is stated that "For each of the sub-sectors S122 and S123, 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 FIs 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."

8. These statistical data will allow the testing calculation of six internal reference rates, and the calculation of one external reference rate for the export and import of FISIM:

Method 1      Interest receivable on loans between S122 and S123  
Stock of loans between S122 and S123

Method 2      Interest receivable on loans between S122 and S123 + interest on securities other than shares issued by S122 and S123  
Stock of loans between S122 and S123 + securities other than shares Issued by S122 and S123

Method 3      To obtain the FISIM output of resident FIs by institutional sectors, 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 4a      To obtain the FISIM output of the resident FIs by institutional sector, the 'internal' reference rate is calculated:  
As an average of lending and deposits rates which are undertaken with all resident user institutional sectors (S124, S125, S11, S13, S14, S15) (except with the central banks).

Method 4b      To obtain the FISIM output of the resident FIs by institutional sector, the 'internal' reference rate is calculated:  
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.

Method 4c To obtain the FISIM output of the resident FIs by institutional sector, the 'internal' reference rate is calculated:

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.

External reference rate (for import and export of FISIM)

9. To determine FISIM imports and exports, the reference rate used is the average interbank rate weighted by the levels of stocks in the heading "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 financial intermediaries.

10. In order to identify part of the FISIM to be allocated to final consumption, and thus to evaluate the impact on the GDP, it is also necessary to have a further decomposition of the stocks and interest on loans granted to the households sector by distinguishing:

- Dwelling loans (intermediary consumption);
- Loans to households as owners of unincorporated enterprises (intermediary consumption);
- Other loans to households (final consumption).

11. A similar breakdown is necessary for the stocks of deposits and interest payable to households as individuals or as owners of unincorporated enterprises. When not feasible, alternative methods for the breakdown of the households sector have been presented in the regulation, which are described in this paper.

**Coverage of S122 and S123 sectors**

12. Information is more reliable on the S122 sector (other monetary financial institutions) than on the S123 sector (other financial intermediaries, except insurance corporations and pension funds). Some countries had problems in identifying clearly units producing FISIM from the units that do not generate FISIM, mainly under the S123 sector. Furthermore, for units not producing FISIM of sector S123, it seems that some countries maintained them in the S123 sector, whilst others preferred to transfer them in a consumer sector.

13. In Belgium, financial leasing corporations, consumer credits and enterprises granting mortgage credits have been considered as producing FISIM. The activities of other units of sector S123 have been considered as not producing FISIM. By lack of reliable information, securities held and issued by the units of sector S123 have been excluded from the average of stocks and accrued interest of securities.

14. In Denmark, information exists for sector S123 on an annual basis, but with no breakdown by users sectors. The lack of a sector breakdown is solved by assuming that these institutions are generally conducting their business with one or two specific sectors. These institutions target a specific group, either providing consumer credit or credit for the general government or the incorporated sector.

15. In the Netherlands, the S123 sector contains many units that do not produce FISIM, like for example holdings of insurance companies and investment companies. For the purpose of the exercise, these units have been assumed to belong to the users sector that can be found under S124. Furthermore, no detailed information is available on the interest flows of the FISIM producing units of S123, which are mainly mortgage banks and municipal credit banks. However, the contribution of S123 to the production of total FISIM is of minor importance (about 2%).

16. In Austria, the S123 sector plays a marginal role and the framework of the testing calculations has been restricted to the S122 sector, at least for this first step.

17. In Spain, FISIM have not been calculated for S123, as entities belonging to this sector do not produce FISIM but charge commissions. For this exercise on FISIM, the S123 sector has been included in the consumer sector S11 (non-financial corporations).

18. In the United Kingdom, any irreducible series of stocks and interest flows between FISIM producers and other sectors have been excluded from the calculations when:

- It was not clear whether the coverage of these series were consistent;
- It was not clear whether these series cover only instruments on which a deposit-taking or lending services are generated.

19. In Sweden, loans and deposits from and to the S122 sector are available on a quarterly basis with a breakdown by sectors. The same information is available also for the S123 sector, with regard to the asset side. Information on the liability side is collected from other less detailed quarterly statistics.

20. It is thought that estimates about FISIM generated by resident producers are underestimated because of the difficulty of distinguishing between FISIM producers' and consumers' components within most of the available data covering S123.

### **Data available on stocks of loans and deposits**

#### Stock of loans and deposits by institutional sectors

21. In most cases requested information on stock of loans and deposits is available from direct sources, with a breakdown by main domestic users sectors - S124, S125, S13, S14 and S15 and for the 1995-1998 period.

22. In the Netherlands, Italy, Austria and Portugal, the NPISHs sector (S15) has been merged in the Households sector due to the impossibility to isolate this sector. Given the relatively low level of FISIM consumed by this sector, the consequences on the data should be limited. Furthermore, the comparison of the GDP impact might not be altered as it is likely that a large part of the FISIM allocated to the S15 sector will be allocated to households as consumers.

23. The United Kingdom has made no calculation of FISIM consumption for the financial auxiliaries sector (S124).

24. Sweden has made no calculation of FISIM consumption for the S124 sector, but plans to do it later on when the business register will be improved. For the moment, Sweden has included all entities actually classified under S124 into the non-financial corporation sector (S11).

25. Denmark has information about stocks of loans and deposits but, for the non-bank entities, this information is available on an annual basis and with no breakdown by sectors.

26. The Netherlands had to make estimates on assets and liabilities of the credit institutions sector for the year 1998 because the data are not available yet.

Breakdown of the households sector

27. The data availability on the stocks of loans and deposits with households as consumers and with households as owners of dwellings or unincorporated enterprises is fundamental for the analysis of the FISIM impact on GDP. As it will be shown in the results part, FISIM allocated to households as consumers is the main factor explaining the impact on the GDP. The first results based on the report sent to Eurostat indicates various situations among the Member States:

28. In Denmark, loans to households in their capacity as owners of dwellings had to be estimated. On the other side, all deposits held by unincorporated enterprises have been attributed to households in their capacity of consumers.

29. In the Netherlands, there is no separate information available on households in their capacity of owners of dwellings. The Netherlands has tried to solve this problem by using the amount of mortgage loans, but they cannot assume that the entire amount is fully used for investment purposes. Given the specificity of the Dutch system, it is likely that part of the mortgage loans have been used for consumption purposes, and the deduction of this part needs some assumptions. Concerning households as owners of unincorporated enterprises, there is only marginal information based on a pilot project.

30. In Austria and for the 1995-1998 period, information is available only for loans granted to households as owners of unincorporated enterprises. A complete breakdown of the loans granted to the Households sector is available from 1999 onwards. Thus, the 1999 structure has been used to estimate the 1995-1998 breakdown. As regards deposits, Austria has no information at all, and assumed that the breakdown of deposits between deposits held by households as consumers and the rest (households as owners) would be the same as for loans.

31. In Finland and Portugal, the deposits of the households sector cannot be split for the moment between households as consumers and the rest. All the deposits have been assumed to belong to households as consumers.

32. In Spain, the weakest estimate is the distribution of interest received and paid by households as consumers, especially in the case of deposits for which no information is available.

33. In Slovakia, information on dwelling loans is not available for the moment. Only the breakdown of the Household sector into households as consumers and households as owners of unincorporated enterprises was feasible.



34. In Sweden, data on households as owners of enterprises are based on the business registers. Once a household is classified as an owner of enterprise, all its loans and deposits fall into this category. The population of households as owners of enterprises is not stable over time, because the classification is based on the amount of VAT paid. The only data available for households as owners of dwellings comes from the mortgage credit institutions, but part of it is probably used for other purposes.

35. For the remaining countries, it seems that a complete breakdown is available. In the United Kingdom, data on stocks are deemed to be most reliably reported by the banks since they are subject to strenuous checks prior being used in the monetary aggregates. The UK banks' returns give counterpart information on deposits and lending by residence and sector. Additional categories of lending products are identified in the case of NPISHs and the households sector (lending secured on dwellings, bridging finance, credit card lending). Belgium has a complete split of credits and deposits to the household sector into households as consumers, owners of dwellings and unincorporated enterprises, but only for the 1995-1997 period. Because of changes in the reporting scheme that credit institutions have to fill in, some estimates had to be made for the year 1998. In Germany, data on stocks for households as owners of unincorporated enterprises are available, as they are reported by banks.

#### Stock of loans and deposits with non-residents

36. The data needed for the calculation of imports of FISIM are more difficult to obtain than those necessary for the calculation of exports of FISIM, thus leading Member States to implement less reliable estimates for calculating imports.

37. Portugal and Slovakia do not have the necessary information to calculate imports and exports of FISIM for the moment.

38. Finland does not have information on transactions between resident and non-resident FIs. Furthermore, it is impossible to know which sectors make the deposits to foreign FIs and from which sectors the loans are taken. Imported FISIM cannot be calculated for the moment.

39. In the Netherlands, positions vis-à-vis the rest of the world could not be divided into non-resident financial and non-financial institutions. This breakdown has been estimated by the Netherlands to evaluate the amount of exported FISIM on loans and deposits.

40. In Sweden, only information on loans and deposits with non-resident non-financial institutions is available for the 1995-1997 period. From 1998 onwards, the breakdown of the rest of the world sector is available with the distinction between non-resident non-FIs and non-resident FIs.

41. For the remaining countries - Belgium, Denmark, Germany, Spain, Italy, Austria and the United Kingdom - it seems that the requested information exists. However, it is not always clear whether this information was available or has been estimated.

#### **Data available on interest flows**

42. In general, less detailed information is available on interest flows than on stocks. The situation between countries can vary a lot, depending if the breakdown of interest flows by sectors is estimated or directly measured.

Group 1: A majority of the nine countries having answered the question relating to the availability of data indicated that information on interest flows is available from direct sources, but with no breakdown between institutional sectors. For this first group of countries estimates mainly consist in distributing the total interest flows (directly measured) into each sector, by using interest rates obtained from various studies. The concerned countries are Germany, Italy, the Netherlands, Austria, Finland, Sweden and the United Kingdom.

43. In the Netherlands, interest flows are not broken down by institutional sector and by type of assets. Counterpart information, like for example statistics on household savings and balance of payments data, was necessary to make such calculations. Furthermore, the Netherlands has no separate information on interest flows with non-resident FIs and non-resident non-FIs. For interest flows received from the rest of the world, it has been assumed that non-resident non-FIs pay 0.5% more than non-resident FIs. For interest flows paid by resident FIs to the rest of the world, it has been assumed that non-resident non-FIs receive 0.5% less than non-resident FIs. Finally, no detailed information is available on interest flows of the FISIM producing units of S123.

44. The United Kingdom has information on interest flows coming from the UK banks' reporting income and expenditure. But in any period, there is no information on interest flows broken down by institutional sectors. Only a breakdown of interest flows into resident and non-resident is available. Estimates had to be made by means of interest rate x stock calculations and the

UK also used data from building societies, which have available data, on accrual basis, for interest earned on commercial assets. The figures cover both lending secured on dwellings and unsecured lending.

45. Italy indicated that indirect sources were used to estimate interest flows broken down by resident sectors. The main problem was in constructing a matrix of interest flows (received/paid) consistent with that of the stocks.

46. Sweden uses published interest rates from the Swedish Central Bank to estimate interest flows among sectors. However these rates cannot be applied automatically and the distribution is made with the aim of keeping the total and of following the common belief of the credibility of different sectors. All interest data are estimated from sector distributed stocks, total interest and, as a guide, the above mentioned interest rates. For the calculation of imports, there is no information of interest flows or interest rates.

47. Germany indicated that the constructing of the matrix of interest flows consistent with that of the stocks was done at a very detailed level, with a more precise sectorial breakdown than necessary for the FISIM exercise. Interest flows broken down by institutional sector are not obtained from direct sources, but by using published average interest rates available from banking and balance of payment statistics. An inconsistency appears from the fact that these rates correspond to new transactions, whereas they should integrate the historical profile of stocks.

48. In Finland, the interest flows have been calculated based on the average interest rates multiplied by the stocks. The average interest rates have been calculated using monthly data. Furthermore, for the years 1995 and 1996, there was no information about interest rates by institutional sectors

Group 2: Belgium, Denmark and Spain could be seen as countries having more available data for a direct measure of interest flows, also in its allocation by institutional sectors. However, the data collection system differs in these three countries.

49. In Belgium, interests received on loans granted and paid for deposits are not split into institutional sectors in the reporting scheme that credit institutions have to fill in for statistical and supervisory purposes. The breakdown of interest flows by sectors is directly collected by means of a so-called structural survey. This survey is not compulsory for credit institutions, and information by institutional sectors collected thorough the survey covers 75% of the total information on interest received and paid. Another problem in

Belgium is that credit institutions report profit and loss accounts including the results of their foreign branches. Thus, some adjustments were made based on the stocks of credits and deposits relative to the activities of resident Belgian credit institutions.

50. In Denmark, interest flows are directly available broken down into central bank, financial intermediaries, general government, owners of unincorporated enterprises and the incorporated sector. This institutional breakdown does not correspond exactly to the one requested for the FISIM exercise. For the non-bank institutions of the S122+S123 sectors, information on interest flows is available on an annual basis, but with no sectorial breakdown. To address this problem, Denmark has assumed that these other institutions are generally conducting their business with one or two specific institutional sectors: The households sector (consumer credit), the general government or the incorporated sector. Contrary to the stocks, Denmark does not have any information on interest flows paid by non-resident FIs.

51. In Spain, interest flows are obtained by using financial accounts prepared for all sectors on a quarterly basis by the Central Bank.

#### **MAIN PROBLEMS ENCOUNTERED**

##### **Calculation of internal reference rate for methods 1 and 2**

###### Match between assets and liabilities

52. In principle, between resident FIs of S122 and S123 sectors, the amount of interbank transactions assets should be the same than the amount of interbank transactions liabilities. In practice, the total of loans held by resident FIs vis-à-vis the other resident FIs (and the corresponding interest payable) do not match the total of deposits held by resident FIs vis-à-vis the other resident FIs (and the corresponding interest receivable). This point is important for the calculation of methods 1 and 2, and has been described in detail in the Belgian, Danish, Dutch and Swedish studies.

53. Belgium has solved this problem by choosing the liabilities side as a reference. As a result, the amount of interbank credits granted to Belgian credit institutions and the corresponding interest have been adjusted, the difference being allocated to transactions with non-resident FIs.

54. Denmark had to face a similar situation and used all interbank transactions even if some of them had been counted twice. The formula used is interest received by banks plus interest paid by banks to other residents of sector S122, divided by the stock of loans held by banks and deposits owned by banks to and from other institutions of sector S122.

55. The Netherlands has adapted the reference rates proposed in methods 1 and 2, by using different published interest rates, for short/long term loans and loans in foreign currencies. The published interest rates used are the six monthly Aibor (interbanking rate), the average interest on long-term bank loans and the average interest rate on three monthly Euro-dollar deposits.

56. The remaining countries have made no detailed comments on this particular point, and have presented in the proposed harmonised TABLE 1 consistent totals on this issue. However, it might be helpful to know in the future if there were significant adjustments made before obtaining a consistent table 1.

57. Sweden has used the annual average stocks of loans and deposits to solve his problem.

Securities other than shares (for method 2)

58. The calculation of the reference rate according to method 2 also takes into account stocks and interest on securities other than shares issued by S122 and S123 sectors. It seems that no specific problems have been encountered by the Member States for the calculation of the internal reference rate for method 2. In some countries, interest on securities other than shares issued by S122 and S123 sectors were not available, but have been estimated with apparently no specific difficulties and in line with the guidelines stated in the council regulation.

59. Belgium has also included, for the calculation of reference rate 2, interest received on securities held by the financial intermediaries. Furthermore, in this calculation, Belgium has not considered as securities their so-called "bons de caisse". For the FISIM exercise, the "bons de caisse" have been considered as deposits since the credit institutions can influence the interest rates, and derivatives have been excluded from securities. Due to lack of reliable information, Belgium has also excluded from the calculation securities held and issued by the units of sector S123.

60. Denmark has no separate information about the accrued interest on bonds issued by FIs.

61. Germany has reclassified as deposits some registered bonds which have the characteristics of deposits.

62. The United Kingdom has excluded identifiable series on mutual investment funds in order to obtain the appropriate coverage for calculation of reference rate 2. Furthermore, the United Kingdom indicated that interest flows reported since 1998 on an accrual basis are thought to be of adequate quality, although subject to definitional uncertainties, particularly as regards non-inclusion of interest swap payments.

63. The Netherlands has applied the average interest rate on long term bank loans to calculate interest flows on securities other than shares.

### **Calculation of internal reference rate for method 3**

*Calculation made?*

BE	DK	DE	ES	NL	IT	AT	PT	FI	SE	UK	SK
Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No

64. Seven of the twelve countries having presented their first results of the FISIM exercise provided an evaluation of an internal reference rate for method 3, namely Belgium, Denmark, Germany, Spain, the Netherlands, Italy and Austria. Denmark calculated its long-term reference rate for method 3 based on the 5 years General government bonds. Spain indicated the weakness of estimates of maturities for the calculation of FISIM under this method.

65. The remaining five countries-Finland, Portugal, Sweden, the United Kingdom and Slovakia- have not calculated the internal reference rate for method 3, in most cases because of the absence of any adequate body of information on the maturity structure of the liabilities of FISIM producers. In other words, it was either impossible or difficult to make a reliable split between short and long term loans and deposits.

66. Finally, without anticipating the conclusion of the FISIM exercise at this earlier stage, it should be pointed out that, besides being impossible for four countries to calculate a reference rate for method 3, Belgium, Spain, Italy and the Netherlands clearly indicated that method 3 gives less reliable results than the others.

#### **Calculation of internal reference rate for methods 4a, 4b and 4c**

67. This chapter will mainly concentrate on the main problems encountered in the calculation of reference rate for method 4a, as methods 4b and 4c are just averages of method 4a with either method 1 or method 2. It seems that no major difficulties have been met in the calculation of an internal reference rate for these methods.

68. Belgium and Spain have expressed some doubts concerning the pertinence of these methods from a theoretical point of view, as their economic sense do not appear.

69. Denmark indicated that the three reference rates calculated for methods 4 are too high because they include a risk element.

70. The United Kingdom pointed out that the reference rate calculated for method 4a can vary according to the averaging method used. The United Kingdom has combined at the most aggregated level the loan and deposit balances for S11, S125, S13, S14 and S15 with domestic FISIM producers, and the interest payable and receivable on them. Then, a single average interest rate has been derived for the entire business. At a more disaggregated level, averaging the implied rates on deposits and lending for each consuming sectors and taking an average of these averages gave results up to 0.5 percentage points lower.

#### **MAIN RESULTS**

##### **Comparison between the "global" FISIM as defined in ESA 95 and the sum of FISIM output allocated to institutional sectors**

*Comparison done?*

BE	DK	DE	ES	NL	IT	AT	PT	FI	SE	UK	SK
Yes	Yes	No	Yes	Yes	Yes	No	Yes	No	Yes	Yes	No

71. Eight of the twelve countries having provided their first test calculations to Eurostat have made a comparison of the "global" FISIM, as defined by the ESA 95, with the FISIM output calculated according to the methods 1-4c defined in the Council regulation.

72. With exception to method 3, the results of methods 1-4c are, in most countries, quite similar. But there is a gap between the results of these methods and the "global" FISIM calculated according to ESA 95, paragraph 3.63.

73. In Belgium, Italy and Portugal, the "global" FISIM calculation produces higher amounts of FISIM than the calculations made according to the regulation methods, mainly because the first method includes the interest on securities other than shares. In the regulation method, interest on securities other than shares issued by FIs are used only for the calculation of the reference rate 2, but the FISIM are produced only on loans and deposits. Furthermore, some countries have included the FISIM produced by the Central bank in their global calculation.

74. In Spain and in the Netherlands, the results show for all years a lower level of "global" FISIM compared to the FISIM calculated thorough the regulation methods. In Spain, the gap diminishes over the course of the observed period. In the Netherlands, the lower level of "global FISIM" is due to the fact that interest receipts and interest payments on securities other than shares, which were included in the global data but excluded from the regulation methods, showed a strong deficit of about 6 billion guilders. A substantive part of the interest receipts on bonds is yield on net worth and thus not producing FISIM, and this deficit decreases the result of global FISIM.

75. In Sweden, the global FISIM produced is always lower than the amount of FISIM produced using any other methods except method 2.

76. In the United Kingdom, the sum of FISIM output allocated to different institutional sectors and to the rest of the world is lower than the "global" FISIM as defined by the ESA 95 for the 1995-1996 period. The reverse situation is observed for the 1997-1998 period. Whilst the FISIM output calculated according to the regulation methods is always increasing, whatever the reference rate used, the amount of global FISIM produced regularly decreased since 1995. This falling rather than rising trend of the global data is mainly due to a falling net income on interest flows with the rest of the world financial institutions.

#### **Output of the central bank**

##### *Calculations done?*

BE	DK	DE	ES	NL	IT	AT	PT	FI	SE	UK	SK
Yes	Yes	No	Yes	Yes	No	No	Yes	Yes (*)	Yes	Yes (*)	No

(\*) Only the calculation using the sum of the costs has been done.



77. Eight of the twelve above-mentioned countries have calculated the FISIM produced by their Central Bank, at least by using one of the two suggested methods, which are the sum of costs (according to the Regulation) or the definition of global FISIM (as defined by ESA 95 for all FIs-see paragraph 3.63). More precisely:

78. Belgium, Denmark, Spain, the Netherlands, Portugal and Sweden have made the comparison of the FISIM output of their respective Central bank using the two proposed methods.

79. Finland and the United Kingdom have presented the results of the FISIM output of their central banks using the method defined in the regulation (sum of costs).

80. As expected, and except Portugal for the years 1995 and 1996, the total FISIM produced by the central banks, as measured following the ESA 95 recommendations, is higher than the output of the central bank measured according to the sum of the costs.

81. In Spain, in the Netherlands and in Sweden, differences between the two methods are extremely high: the results of the sum of the costs method represented each year less than 20% of the results obtained using the ESA 95 guidelines.

82. In Belgium, the same ratio fluctuated between 36% and 41%. Furthermore Belgium has expressed its preference for the calculation by the sum of the costs, as suggested by the regulation, which represents better the real value of the production of Central banks.

83. The United Kingdom has not made the comparison with the ESA 95 rules, but indicated that the global method will have greatly exceeded the cost basis figures, because the Bank earned large sums from investment, in particular from those backing the note issue. The United Kingdom has also calculated the FISIM output of the Central bank using the reference rate 2 of the regulation, and the results are much lower than the ones obtained by the sum of the costs.

84. Finland has calculated the FISIM output of the Central bank according to the sum of its costs. The appliance of the ESA 95 paragraph 3.63 was not feasible because the amount of own funds to the Finnish Central Bank is not clear. In addition, the exchange reserves cannot be broken down into financial assets.

**Occurrence of negative FISIM**

85. Negative FISIM have been observed in the allocation of FISIM by user sectors. However - except the case of the Netherlands for the insurance corporations and pension funds sector - FISIM results are always, with all methods, "structurally" positive. Only rare and sporadic negative results were obtained. Some Member States are reluctant to have negatives FISIM, putting forward the difficulty of presenting a service rendered with a negative value. Other Member States admit the possible existence of negative FISIM, arguing that revenues of the S122/S123 sectors are not generated only by the differential of interest receivable/payable, but also by the fees and commissions.

86. For all Member States, all years and all methods, negative FISIM have never been observed on the non-financial corporations sector (S11), occurred very rarely on the NPISHs sector (S15) and on the sub-components of the S14 sector (households as consumers, owners of dwellings and owners of unincorporated enterprises).

87. With the General government sector (S13), six of the ten Member States having implemented the FISIM test calculations have encountered negative FISIM, namely Denmark, Italy, the Netherlands, Portugal, Sweden and the United Kingdom. In general, amounts involved are always relatively small, not exceeding 1% of the total FISIM on loans or on deposits. Furthermore, the problem of negative FISIM with the S13 sector seems to be more relevant on the loan side.

88. The problem is more acute when the customer is in the Insurance corporations and pension funds (S125) sector. Five of the ten Member States having implemented the FISIM test calculations have encountered negative FISIM with this sector (Denmark, the Netherlands, Portugal, Sweden and the United Kingdom). Unlike the S13 sector, amounts involved are relatively small only on the loan side, not exceeding 1% of the total FISIM on loans.

89. The situation is different on the deposit side and also differs by country. In Denmark and Portugal, amounts of negative FISIM allocated to the S125 sector were also marginal on the deposit side. In the United Kingdom, negative FISIM attributed to the deposits made by the S125 sector accounted for 2.3% of the total (in absolute value) of domestic FISIM produced on deposits, in 1998 and for method 2: The same ratio in Sweden was 3.6%, in 1995 and for method 1.

90. The Netherlands is the only country having recorded negative FISIM on the S125 sector for all methods, for all years, and both on the assets and

liabilities sides. If negative FISIM are marginal on the loans (like other countries), significant amounts have been detected on the deposits side. Negative FISIM allocated to the deposits made by the Dutch insurance corporations and pension funds represented, on average, 15% of the total domestic FISIM produced on deposits in 1995, 22% in 1996, 25% and 21% in 1997 and 1998 respectively. While method 1 gives the highest ratio (around 32% on average for all years), it should be pointed out that significant amounts of negatives FISIM have been observed whatever the method chosen.

91. The structural persistence of negative FISIM with the S125 sector is linked to the fact that actual interest rate payable on deposits made by the insurance corporations and pension funds sector are always much higher than the actual interest rate receivable from the loans granted to the same sector. Therefore, any reference rate would lead to negative FISIM. A primary explanation of this specific behaviour of the FIs might be given thorough the analysis of their economic links with the insurance and pension funds sector. Indeed, it is more and more common to see closer relationships on the market between insurance companies and banks, with an integration of their respective "traditional activities". According to the Dutch paper, "insurance corporations, pension funds and FIs are strongly intertwined".

92. Perhaps in such a case, allocating FISIM on the basis of raw data is not meaningful, and it should be better to consider that no FISIM are produced.

93. Negative FISIM have also been observed with the rest of the world sector. However, except only the 1997 Swedish exports of FISIM, totals of exported and imported FISIM were always positive. Negative imports of FISIM by institutional sectors have been detected in three Member States, but of negligible amounts and only for particular years. FISIM exported towards non-resident non-FIs were negative in only three MS. This situation seems to be more frequent vis-à-vis the non-resident FIs, as five countries declared negative and sometimes significant values of FISIM exported towards non-resident FIs. A possibility of avoiding, at least partially, this problem should be to consider that transactions between resident and non-resident FIs do not produce FISIM, as it is already considered that transactions between residents FIs do not produce FISIM.

#### **Analysis of the impact on GDP**

##### Average impact on GDP by country

94. The comparison of average impact on GDP by country of allocating FISIM only gives a partial view of the importance of FIs in the economy, as FIs also directly charge commissions and fees which are already allocated to user sectors and therefore taken into account in the GDP calculation. As the part of FISIM on the output of FIs differs significantly among Member States, allocating FISIM-if the method is reliable enough- would lead to a more complete and accurate intra-EU comparison of GDP levels, which would include the entire value added generated by the activity of FIs.

95. In some countries (particularly Spain) a decreasing trend of FISIM can be observed in the period, because FIs directly charge commissions and fees for an increasing part of their output.

96. For the average of the four years 1995, 1996, 1997 and 1998 and for the different methods, the allocation of FISIM would increase GDP by about 1,5% (average of the twelve countries).

97. The impact would be different according to the Member States (from 0,9% in Austria to 2,7% in Portugal).

98. The following table shows, by country, the impact on GDP: average of the different methods and of the four years. This impact is split into:

- the increase of final consumption of households (including the NPISHs when this sector cannot be presented separately)
- the increase of final consumption of non-market services provided by the sectors General Government and NPISHs (when this last sector is presented separately)
- the exports of FISIM
- a marginal impact on GDP corresponds to the FISIM imported for intermediate consumption of market producers, which corresponds to a decrease of GDP. This impact is significant for Belgium (-0,2%) and Spain (-0.1%).

Country	Impact on GDP	Of which increase of final consumption of households	Of which increase of final consumption of non-market services	Of which exports
Portugal	2,7	2,3	0,4	-
United Kingdom	1,8	1,35	0,05	0,4
Germany	1,8	-	-	-
Denmark	1,5	1,35	0,05	0,1
Spain	1,5	1,2	0,2	0,2
Slovakia	1,5	0,9	0,6	0
Belgium	1,3	0,9	0,2	0,4
Sweden	1,2	1	0,2	0
The Netherlands	1,2	1	0,1	0,1
Italy	1	0,9	0,05	0,05
Finland	1	0,9	0,1	--
Austria	0,9	0,3	0,2	0,4

99. The main part of this impact (about 80%) is explained by an increase of final consumption of households, corresponding to FISIM allocated on loans and credits of households as consumers. The results are in fact closely linked to the methods used by Member States to breakdown the Households sector.

100. For instance, Austria - in order to split the deposits of households - has used the breakdown observed for loans of households. On the contrary, due to lack of information and in accordance with the Regulation, Portugal has supposed that all deposits from households correspond to deposits of households as consumers. These differences of methodologies explain in part why the impact of FISIM is so different in Austria compared to Portugal. The breakdown of the Households sector appears to be the main item to be discussed in a future meeting of the FISIM Task Force, in order to assess common rules.

101. To a minor extent, exports of FISIM and the increase of final consumption of non-market services provided by the sectors General government and NPISHs also impact on GDP.

#### Average impact on GDP by internal reference rate

Impact on GDP (average of four years and of Member States)

METHOD	IMPACT ON GDP (in %)
Method 1	1,32
Method 2	1,51
Method 3	1,24
Method 4a	1,47

Method 4b	1,42
Method 4c	1,48

Method 1 based on the inter-bank rate corresponds in average to an increase of 1,32% of GDP.

Method 2, which also includes the rate of bonds, has in average a higher effect (1,51% of GDP): as, for the years under study, the long term rates were higher than the inter-bank rates, the reference rate in method 2 is higher than the reference rate in method 1. As the stocks having an impact on GDP (mainly loans and deposits of households as consumers) are higher on the deposits side than on the loans side, the impact on GDP of allocating FISIM increases when the reference rate increases. This is due to the fact that the increase on the deposits side (FISIM on deposits) is higher than the decrease on the loans side (FISIM on loans).

Method 3 has a lower impact, but can not be implemented by three Member States as they can not breakdown loans and deposits according to their maturity. Moreover, as it introduces two reference rates (one for long term transactions, another for short term transactions) this method has the inconvenient to systematically eliminate the "matching benefits", which is the use by FIs of short term deposits to finance loans with longer maturity.

The impact on GDP of method 4a is higher than the impact of method 1, but lower than the impact of method 2. This method measures only the gap between loan and deposit interest rates, neither of which has any measurable relationship to the pure interest concept (both include an element of service charge, but the size of this service element within each is unknown).

Methods 4b and 4c are a mixture of method 4a and of methods 1 and 2, respectively.

From a methodological point of view, the reference rate should measure the pure cost of funds appropriate to a borrowing or lending transaction, without any element of service charge or of risk. Therefore, methods 1 and 2 are conceptually better than methods 4, but methods 4 were introduced in the regulation because it was supposed they would bring more stable results.

#### Index of "volatility"

102. To verify such an assumption, the "volatility" in the results of each method has been measured by the following way.

Index of "volatility" of the allocation of FISIM, based on the results by country and by method

$$= \frac{|\text{impact on GDP year } n+1 - \text{impact on GDP year } n|}{\text{impact on GDP year } n}$$

Example (fictive figures for country X and method Y):

Year	Impact on GDP	Index of "volatility"
1995	2%	
1996	1,9%	$\frac{ 1,9 - 2 }{2} = 5\%$
1997	2,3%	$\frac{ 2,3 - 1,9 }{1,9} = 21\%$
1998	2%	$\frac{ 2 - 2,3 }{2,3} = 13\%$

Average "volatility" by country (average of methods 1, 2, 4a, 4b, 4c)

103. The implementation of these calculations for each Member State highlighted different levels of "volatility". For the average of the six methods, Germany and Portugal had the most stable results (index of "volatility" = 3%), followed, by order of increasing volatility, by Denmark (5%), the United Kingdom (6%), Austria and Sweden (7%), the Netherlands (9%), Italy (10%), Finland (12%), Spain (15%) and Belgium (20%).

Average "volatility" of the different methods (average of 11 Member States)

<u>METHOD</u>	<u>AVERAGE "VOLATILITY"</u>
Method 1	13%
Method 2	8%
Method 3	10%
Method 4a	7%
Method 4b	8%
Method 4c	7%

104. Conclusion: not surprisingly, the method 4a is the less volatile. However, the difference with method 2 is not significant: only 1 percentage. At this stage of the trial period, it seems that method 2 is the best method as this method is more satisfactory, from a conceptual point of view, than method 4a. Also because method 2 represents a qualitative advance over method 1 as a rate applicable to transactions over a wide maturity band, therefore producing more

stable results. Nine out of eleven countries obtained a lower volatility in their results by using method 2 compared with method 1; however the differences are generally small; in the average volatility, the gap (13% for method 1 and 8% for method 2) can be mainly explained by a extremely high volatility of method 1 for Belgium.

105. As the impact on GDP of allocating FISIM is, on average, 1,5%, this "volatility" index result (8%) means that - on average - the impact on GDP of the allocation of FISIM differs from  $1,5\% \times 8\% = 0,1\%$  of GDP, which is the average difference on GDP between one year and the following year. However some extreme variations could be observed in some countries, for instance 0,35% of GDP:

- impact on GDP in 1995: 1,42%
- impact on GDP in 1996: 1,07%

106. It would be useful to know if the average "volatility" comes from stock changes or from interest rate changes. As the impact on GDP is mostly (80%) due to loans and deposits of households in their capacity as consumers, an index of "volatility" for these loans and deposits has been calculated.

107. Index of "volatility" of stocks of loans and deposits of households as consumers (in percentage of GDP)

$$= \frac{\left| \text{stocks of loans + deposits year } n+1 - \text{stocks of loans + deposits year } n \right|}{\text{stocks of loans + deposits year } n}$$

108. These amounts were expressed in terms of GDP, to be consistent with the general index of "volatility" previously presented.

109. The result of the index of "volatility" of loans and deposits of households as consumers was 4%. This means that - if interest rates remained unchanged - the volatility of FISIM having an impact on GDP would be 4% and not 8%. Therefore, this means that the "volatility" of FISIM having an impact on GDP (8%) is due, in equal parts, to changes in the levels of stocks and to changes in interest rates.

110. It can be observed that, in some years and for some countries, the gap between interest on loans and interest on deposits quickly changes. If this gap deeply decreases from one year to another, FISIM on loans and deposits, calculated as a margin on the basis of the reference rate, will also decrease in a significant way.



111. The fact that the reference rate is sometimes either closer to the interest rates on loans or closer to the interest rates on deposits is less relevant because the "volatility" of the method 4a, which avoids such a situation, is not significantly lower than the "volatility" of other methods, and particularly method 2.

#### Member States preferences

112. Concerning the choice of the method, some Member States expressed their preferences. A majority of countries have excluded method 3 from their preference list. For the remaining five methods 1, 2, 4a, 4b and 4c seven of the twelve countries -Belgium, Denmark, Spain, Italy, the Netherlands, the United Kingdom and Slovakia- have expressed in a more or less precise way their choice.

113. The United Kingdom presented a list of preferences, with a classification of all methods. Method 2 ranks first, followed by methods 1, 4c, 4b, 4a and 3 respectively.

114. Belgium, Denmark, Spain, Italy and the Netherlands expressed their preference in providing a restricted list of methods instead of choosing one method: methods 1 and 2 for Belgium, methods 1 to 3 for Denmark, method 1 (preferred) and method 2 for Spain, methods 4a and 4c for Italy, methods 2 and 4a for the Netherlands.

115. Slovakia, after the consideration of the results of experimental calculations, choosed the procedure based on method 1 for the application in national accounts.

116. Finland indicated that, at this stage of the calculations, neither no single method of calculating the reference rate can be underlined nor can any method be excluded.

117. Sweden indicated that, at this stage of the calculations, it was too early to give an opinion. If so, the Swedish choice would fall on method 2 or one of the reference rates combined with method 4a, preferably method 4c.

118. At this stage of the calculations, it seems interesting to have a look on the criteria used to express the preferences. In reading the studies, six criteria could be identified:

1. Reference interest rate that is free of service charge and risk.
2. Reference interest rate that gives more reliable results.

3. Reference interest rate that gives more stable results.
4. Reference interest rate keeping the "transformation gains" (this is a problem with method 3).
5. Reference interest rate that is simple to be calculated.
6. Reference interest rate through which the sum of detailed FISIM will approach best the global FISIM.

119. Only six countries have expressed for the moment their preferences on criteria to be used. These countries are Belgium, Denmark, Spain, Italy, the Netherlands, and the United Kingdom. Almost all of them seemed to favour the first criteria (Reference interest rate free of service charge and risk), which also indicates a choice from a conceptual point of view. Furthermore, a majority of countries have stressed the importance of having reliable results (criteria 2), and pointed out the fact that estimates made might sensibly alter the results. Italy and the Netherlands have also used the criteria of stability of the results. Spain indicated its preference for method 1 given the simplicity of its calculation. The criteria of "best approaching global FISIM" has been expressed only by the Netherlands.

#### **GENERAL CONCLUSION**

120. Preferences expressed by the Member states have put forward two criteria for the identification of relevant reference interest rates. These criteria are the need of having an interest rate fairly close to the concept of "pure interest rate" and giving the most reliable results with regard to available data. The analysis of the impact on GDP, at this stage of the study, has put forward method 2, which seems to bring best results. Furthermore, this analysis has identified the specific area on which Member States should concentrate their effort in the future in order to obtain more reliable results.

121. Allocating FISIM requires further improvements in statistical sources in order to:

- Directly measure interest flows broken down by institutional sector.
- Obtain better measures of exports and imports of FISIM.

122. It should be also necessary to assess common rules for the breakdown of the Households sector, particularly for deposits.

123. Those questions should be discussed in the next meeting of the FISIM Task Force. Additionally, this Task Force could bring improvements about the

presentation of the reports to be sent to the Commission, assess common practice for a better comparability (sectorisation and calculation of reference rates) and treat some remaining methodological issues, in particular: breakdown by industry, existence of FISIM on acceptance finance and on transactions on loans and deposits between resident FIs and non-resident FIs, occurrence of negative FISIM.

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