



EUROPEAN CENTRAL BANK
EUROSYSTEM

Seminar of the
Association de Compatibilité Nationale
Paris, 2 to 4 June 2010

Measuring and recording financial services

Reimund Mink

Directorate General Statistics, European Central Bank

CONTENTS

1. Introduction	2
2. Financial services and financial intermediation services indirectly measured in international statistical standards	3
a. <i>The 1995 ESA</i>	3
b. <i>The 2008 SNA</i>	3
c. <i>The draft 2010 ESA</i>	4
3. Recommendations to improve the calculation of FISIM.....	4
a. <i>The 2008 SNA Research Agenda</i>	4
b. <i>A Special Topic Contributed Paper Meeting at the ISI on financial services</i>	5
i. <i>The single reference rate method</i>	5
ii. <i>The multiple reference rates method</i>	6
c. <i>A European Task Force on FISIM</i>	7
i. <i>Different maturities</i>	8
ii. <i>Different currency denominations</i>	8
iii. <i>Varying degrees of (default) risk</i>	9
iv. <i>Price and volume measures</i>	9
4. Treatment of credit default risk	9
5. Conclusions	10

Measuring and recording financial services

Reimund Mink¹

Directorate General Statistics, European Central Bank

1. Introduction

Financial corporations provide financial services that may be paid for explicitly or implicitly. Explicitly remunerated financial services are directly observable as charges mainly in association with financial intermediaries' transactions in financial instruments². However, any complete measure of financial services production has to take into account the value of those services for which financial intermediaries do not charge explicit fees. For instance, payment for services related to loans and deposits (i.e. financial advice, creditworthiness screening, loan performance monitoring, contract conditions re-bargaining, bookkeeping and payment facilities) is usually bundled with the interest rates charged or paid.

Implicit financial services are usually referred to as financial intermediation services indirectly measured (FISIM). While in principle they may arise from various types of financial transactions, international statistical standards confine them to deposits and loans provided by financial intermediaries³. In particular, FISIM are currently compiled using a single reference rate approach in which the prevailing rate for inter-bank lending is seen as a suitable choice. According to this approach, compensation for the term premium and credit default risk is treated as remuneration for a productive service.

This paper is organised as follows. Section 2 briefly describes the treatment of implicit financial services in international statistical standards. It recasts FISIM treatment within the 1995 European System of Accounts (1995 ESA), in the recently published 2008 System of National Accounts (2008 SNA), and in the draft 2010 ESA. Taking into account the fact that these manuals achieve a consistent treatment for the calculation of FISIM, there is a consensus among national accountants that further improvements in the compilation method are needed to increase the analytical usefulness of these measures in terms of prices and volumes. In this respect, various proposals have been brought forward to improve the calculation of FISIM. They are outlined in section 3 and refer to a broad set of research and empirical work carried out by various institutions in recent years. Basically, two methods are currently being considered; the 'single reference rate' method and the 'multiple reference rates' method. Their further elaboration will be the basis of work envisaged by a forthcoming European Task Force on FISIM. Special emphasis will be placed on issues related to the use of reference rates based on different maturities, currencies and default risks for financial instruments. Finally, some reference is made in section 4 to the treatment of credit default risk and to the question of whether or not default risk should be part of financial services. Section 5 concludes.

¹ Without implicating, the author would like to thank Leonidas Akritidis, Antonio Colangelo and Wolfgang Eichmann for valuable comments (reimund.mink@ecb.int).

² Because of the symmetry of financial assets and liabilities, the term instrument is occasionally used to relate to both the asset and the liability aspect of financial transactions.

³ Financial intermediaries cover other monetary financial institutions and other financial intermediaries, except insurance corporations and pension funds.

2. Financial services and financial intermediation services indirectly measured in international statistical standards

a. The 1995 ESA

The principles underlying the FISIM compilation are described in paragraph 3.63.J of the *1995 ESA*⁴. It states that, in general, financial intermediation services cover two parts: (a) financial intermediation services directly charged by financial intermediaries to their clients and measured as the sum of fees and commissions charged; and (b) FISIM⁵.

FISIM are financial services that *other monetary financial institutions* (the *ESA* financial corporation subsector *other MFIs* (S.122)) and *other financial intermediaries, except insurance corporations and pension funds (OFIs, S.123)*⁶, provide to their customers but which are not directly invoiced⁷. Their output is measured as the difference between the actual rates of interest payable and receivable on loans and deposits vis-à-vis other sectors (including the rest of the world) and a reference rate of interest. For those to whom the financial intermediaries lend funds, both resident and non-resident, FISIM are measured as the difference between the effective interest charged on loans and the amount that would be paid if a reference rate were used. For those from whom the intermediaries receive funds (in the form of deposits), both resident and non-resident, they are measured as the difference between the interest they would receive if a reference rate were used and the effective interest they actually receive.

For depositors, these services generally include account management, providing account statements and transferring funds between accounts. *Other MFIs* may charge explicit fees for deposit accounts, but the interest rate received on these accounts is typically lower than what customers could have obtained by lending their money directly on the market. For borrowers, these financial services include screening and monitoring creditworthiness, giving financial advice, smoothing repayments over time, and recording repayments for accounting purposes. They are remunerated by an increase in the interest rates charged by *other MFIs* and *OFIs*.

In particular, the *1995 ESA* distinguishes between an internal reference rate, to be used for transactions among residents, and an external reference rate, to be used for the business between residents and the rest of the world, with the possibility of compiling different external reference rates for each currency of denomination and counterpart area. In contrast, there are no financial intermediation services for debt securities: to the extent that an MFI was involved in issuing or placing these securities, they will have received an upfront fee, and to the extent that they bought these in the secondary market, they have not provided services.

b. The 2008 SNA

The *2008 SNA* adopts the methodology as recommended in the *1995 ESA*. Moreover, it defines financial services more explicitly than in the *1993 SNA* to ensure that the increase in financial services other than the financial intermediation, specifically financial risk management and liquidity transformation, is captured. Financial services include monitoring services, convenience services, liquidity provision, risk assumption, underwriting, and trading services. Chapter 17 of the *2008 SNA*

⁴ In the context of FISIM measurement, the *1995 ESA* is fully consistent with the general framework set up in the *1993 SNA*.

⁵ The FISIM methodology currently applied in the EU Member States is laid down in the Council Regulation (EC) No. 2223/93 of 25 June 1996 on the European System of National and Regional Accounts in the Community (*1995 ESA*), amended by Council Regulations (EC) 448/98 and 1889/2002.

⁶ For a definition of financial corporations and the related sub-classification, see paragraphs 2.32 to 2.67 of the *1995 ESA*. A more detailed breakdown of the financial corporation sector into nine sub-sectors is included in the *2008 SNA* and the draft *2010 ESA*.

⁷ The results are often limited to output of other MFIs, as fully consistent and detailed sets of statistics on OFIs are currently not always available for the EU countries. In the *1995 ESA*, insurance corporations and pension funds do not produce FISIM.

gives guidance on when both explicit and implicit financial services should be identified, including margins on foreign exchange dealing in securities⁸.

FISIM are compiled following a reference rate approach in which the rate prevailing for inter-bank lending is seen as a suitable choice. Various reference rates have also been proposed in the *2008 SNA* by distinguishing between reference rates (i) by user (internal and external users); and (ii) by currency denomination (domestic currency and foreign currencies).

c. The draft 2010 ESA

In the current text of the draft *2010 ESA*, Chapter 14 on FISIM is fully in line with the *2008 SNA* dealing with internal and external reference rates (paragraphs 14.08 to 14.10) and also with the use of reference rates by currency or by group of currencies in cases where the loans provided and deposits taken are expressed in foreign currencies to a significant extent⁹.

The draft *2010 ESA* also states, in line with paragraph 6.166 of *2008 SNA* that “*reference rates for the compilation of FISIM should contain no service elements and should also reflect the risk and maturity structure of deposits and loans.*”

While the option is outlined of having various reference rates (internal and external reference rates and reference rates for each currency denomination) there are still issues which need to be taken into consideration, such as the question of whether various reference rates should also be based on the maturity structure or riskiness of the financial instrument.

3. Recommendations to improve the calculation of FISIM

The current approach has various shortcomings that have become quite obvious in the context of the recent financial crisis’ rather volatile interest rate spreads. Essentially, the method does not appropriately capture the differences between the various types of loans and deposits: for instance, whereas most inter-bank business is short term with low default risk premia, deposits and loans from/to other sectors may have a completely different maturity structure with sometimes high default risk. In summary, within the current methodological framework, compensation for the term premium and default risk is treated as financial services. It leads, in many instances, to negative FISIM, both at the sector level and especially in the rest-of-the-world account¹⁰.

a. The 2008 SNA Research Agenda

The *2008 SNA* Research Agenda includes the issue of (improving) the calculation of FISIM. Paragraph A4.33 of the *2008 SNA* indicates that FISIM should be calculated with respect to a reference rate that contains no service element and reflects the risk and maturity structure of deposits and loans. While the international standards already recommend the use of different reference rates for deposits taken and loans granted by resident financial intermediaries compared with non-resident financial intermediaries, and for deposits and loans denominated in domestic currency and foreign currencies, an additional step would be to elaborate further on the extent to which varying degrees of risk and maturity structures should or should not be reflected in service charges.

⁸ The *2008 SNA* was released under the auspices of the UN, the European Commission, the OECD, the IMF and the World Bank. It represents an update, mandated by the UN Statistical Commission in 2003, of the *1993 SNA*. See <http://unstats.un.org/unsd/nationalaccount/SNA2008.pdf>.

⁹ All draft chapters of the 2010 ESA are available on the Eurostat website CIRCA. See Section “ESA 95 Revision Informal Consultation May 2010”.

¹⁰ Colangelo and Inklaar (2009) present two examples where negative margins may arise from mismatches between the risk and the maturity structure of specific financial instruments and the reference rate. For a more in-depth analysis of the issue of negative FISIM on imports and exports, see S. Fonte Santa (2007).

b. A Special Topic Contributed Paper Meeting at the ISI on financial services

A *Special Topic Contributed Paper Meeting* organised by the ECB at the 57th Session of the *International Statistical Institute* (ISI) in Durban from 16 to 22 August 2009 provided a broad overview of the methods currently being discussed worldwide in the context of compiling FISIM. The meeting specifically addressed the essence of risk in national accounts and the plausibility of calculating bank services based on the current methodology¹¹. It was outlined that the rapid growth of bank output in the current financial crisis was difficult to interpret against the services provided in financial intermediation.

A major part of the discussion at the ISI session referred to the choice of the reference rate and its sensitivity to the level of (current and constant price) FISIM. In an environment of volatile differentials between market and official rates, the view was expressed that the choice of a risk-free reference interest rate splits bank interest margins into depositor and borrower services and should take into account the term structure and risk profile of the asset structure of banks. Failure to exclude the compensation for *risk-taking* from the output would lead to changes in output that are unrelated to changes in input and technology and to an overstatement of bank output that would distort productivity analyses. On the other hand, *risk management* was seen as an integral part of bank output.

Further work to define bank services was suggested, to include: i) the choice of several reference rates to “reflect the risk and maturity structure of deposits and loans;” ii) the definition of SNA interest and its break-down into risk and term premium; iii) a price *and* volume analysis of the changes in FISIM and the identification of price and volume components for (other) payments of financial services; and iv) a wider measurement of financial services, also in relation to income and the recording of financial instruments and interest flows.

The papers provided at the meeting represent the “two camps” of methods; these are the “single reference rate” method and the “multiple reference rates” method. Both concentrated on the issues of risk services *and* basic loan and deposit servicing as the components to be measured and analysed. There were a number of questions raised, the answers to which determine whether or not one should remove risk premia from FISIM on loans, particularly if there were risk management activities these premia might be covering. Alternatively, the treatment of non-life insurance could offer a model for valuing credit default risk in the context of compiling FISIM.

i. The single reference rate method

The single reference rate method was supported by Dennis Fixler, Marshall Reinsdorf and Shaunda Villones (U.S. Bureau of Economic Analysis) and by Michael Davies (Australian Bureau of Statistics). In their paper on *Measuring the Services of Commercial Banks in the NIPAs*, Fixler, Reinsdorf and Villones follow the recommendation of the 1993 SNA for measuring the “implicit financial services to depositors using the difference between a risk-free ‘reference rate’ and the average interest rate paid to depositors” and measuring the “implicit services to borrowers using the difference between the average interest rate paid by borrowers and the reference rate.” To implement this approach, BEA measures the reference rate by the average rate earned by banks on U.S. Treasury and U.S. agency securities. Measured in this way, the reference rate is consistently above the average rate of interest paid to depositors and consistently below the average rate of interest paid by borrowers. However, the authors concede that the financial crisis has raised challenges not just in

¹¹ Bank services affect most components of production, expenditure and income measures of GDP. From a supply and use perspective, the financial sector produces or supplies bank services. The logic of national accounts requires that the output of banking services must be allocated to consumers to identify the purchase of these services and to classify them as intermediate consumption (if a firm borrows from a bank), final consumption expenditure (a household depositing money with a bank or obtaining a loan from a bank) or exports (for services attributed to non-residents). This logic is accepted internationally.

measuring bank services, but also in computing adjustments to remove capital losses from financial profits, and in filling data gaps in accounting by type of financial instrument, maturity and ownership. Finally, it is claimed that statistical agencies need to work with regulators and industry on valuation issues, ranging from financial derivatives to the real value of bank output.

The paper on *The measurement of financial services in the national accounts and the financial crisis* by Davies focuses on the definition and the calculation of FISIM, arguing that the basic concept of FISIM is sound and consistent with the SNA principles and that the proposal to redefine FISIM by excluding payments for risk implies a redefinition of SNA interest. Insofar as this is the case, the discussion leads back to major issues left unresolved in the update of the SNA: the definition of income and the valuation and recording of financial assets and interest flows. Accordingly, the author agreed that the current method (in particular the choice of reference rate and splitting FISIM services into volume and price) based on the 2008 SNA produces FISIM estimates which are difficult to interpret, especially during the recent turmoil in financial markets. There is a discussion of the impact of the various reference rate options, such as the inter-bank rate or a mid-point reference rate. For practical reasons, a mid-point reference rate is selected. Another factor contributing to the production of implausible FISIM is the difficulty of splitting current price levels into price and volume components, taking also into account that a variety of methods are used to calculate the volume of FISIM. In this respect, the author assesses the need to analyse the recent behaviour of FISIM in terms of prices and volumes before concluding whether or not specific estimates are implausible. It would mean that input, technology and volumes of output can stay the same while current price output varies with price. Significant price volatility with steady volumes during a period of financial turmoil is seen as plausible. Further issues raised in the paper refer to the calculation of insurance service charges.

ii. The multiple reference rates method

The papers favouring the multiple reference rates method were presented by Christina Wang (U.S. Federal Reserve Bank of Boston), Satoru Hagino and Katsurako Sonoda (Bank of Japan), Antonio Colangelo and Reimund Mink (European Central Bank) and Wolfgang Eichmann (Destatis). Wang states in her paper on *Risk and Implicit Output of Bank Services* that, in the banking industry, even the conceptual basis for measuring nominal, let alone real, output remains contentious because of the difficulty of measuring the charges incorporated into an interest rate margin and the spread between the interest rates they charge and pay. At the same time, the spread also depends almost invariably on the risk differentials between bank assets and liabilities, consisted mainly of term premia, credit risk premia, liquidity risk premia and prepayment risk premia. It is therefore not only a practical but also a theoretical challenge to isolate the implicit compensation for bank services furnished without explicit charges from the risk-based returns in the interest margin. Wang's paper reviews the theories that enable such a separation. A key thesis emerging from these theories is that risk-based returns should not be considered a value added of banks. The rationale is intuitive: banks should not be counted as producing more services merely because they have taken on more risk. This principle should be even more compelling today, in light of the financial crisis resulting from excessive risk-taking by financial institutions, including banks. The paper then reviews empirical studies that apply these theories to impute implicit bank service output, and demonstrates that it is feasible to implement the theories with available data. But it also recognises the data limitations and suggests fruitful areas for additional data collection. Finally, the paper discusses some theoretical extensions to account for the non-traditional banking activities that have grown to account for a substantial share of bank income.

In their paper on the *Treatment of Risks in the Estimation of FISIM*, Hagino and Sonoda discuss the measurement of financial services in Japan's national accounts, focusing on the treatment of risks in particular. The main subjects are an explanation of the methodology based on the 1993 SNA used to measure FISIM and a consideration of some improvements. Estimated figures for FISIM are not yet used in national accounts, but there are plans to do so in 2011. The paper also aims to contribute to the conceptual discussion on FISIM measurement as initiated by, among others, the ECB at the meetings of the Committee on Monetary, Financial and Balance of Payments Statistics (CMFB) in July 2008 and of the OECD Working Party on National Accounts in October 2008. They specifically

propose to exclude term premia and the credit risk premia from the scope of FISIM. This paper examines the appropriateness of this new methodology by applying it to Japan's financial institutions to estimate FISIM.

In their paper on *Bank services: Some reflections on the treatment of default risk and term premium*, Colangelo and Mink argue that there are both theoretical and practical issues raised in the approach to deriving FISIM described in the international statistical standards. The paper discusses these shortcomings and proposes modifying the current measurement of FISIM. Moreover, it refers to theoretical considerations, as such that a modified approach would be based on reference rates, which would reflect the default risk and term premium characteristics of deposits and loans. Consequently, the default risk and the term premium would be extracted from financial services by comparing sub-positions of loans and deposits with corresponding sub-positions of debt securities and other financial instruments that have similar remaining maturities and default risk. It is demonstrated that this approach can be applied to the regular and timely compilation of quarterly and annual national accounts. In this context, two different approaches are distinguished in the compilation - adjusting reference rates either by excluding only the term premium or by excluding both credit default risk and the term premium. Term premia are to be identified on the basis of a risk-free yield curve (a government bond yield curve or an interest rate swap curve for maturities above one year) and secured inter-bank rates (for maturities below one year). When output is adjusted by excluding the term premium, the method gives FISIM approximately one-fifth to one-fourth lower than FISIM compiled using the single reference rate method. When adjusting output by excluding credit default risk and the term premium, in the case of loans it would be appropriate to rely on a pool of debt securities with the same maturity/risk characteristics. This method gives FISIM estimates approximately 40% to 50% lower than FISIM compiled using the single reference rate method.

The Eichmann paper *On a risk-adjusted FISIM* proposes that only intermediation services should be recorded in the production account, whereas the costs of borrowing and the risk premium should be recorded in the income account. It concludes that standard service components should be compiled for deposits and loans. Up to now, intermediation service and risk assumption have been part of the production account, whereas the pure costs of borrowing (the reference rate) are included in the income account. A risk-adjusted FISIM is seen as being in line with the SNA paradigm that providing services is productive, whereas pure risk assumption is not. Insofar as this is the case, the approach follows the line of reasoning presented in the papers favouring the multiple reference rates method. However, from a practical point of view, the proposal presented by Eichmann might be easy to implement because of the feature of applying, in principle, only one risk-adjusted reference rate.

The discussion following the presentations showed that it is useful analytically to identify and estimate the elementary components of FISIM, of which basic financial product servicing, default risk, and term risk are the major components. Questions were also raised whether it is defensible to remove the entire risk premia from FISIM on loans if there are risk management/mitigation activities these premia might be covering. Finally, it was asked whether the SNA treatment of non-life insurance might offer some insights for the value of risk management/mitigation activities within FISIM. The ISI session provided a new impetus, with broad involvement by central bank statisticians, and proposed a task force to move ahead with the ideas debated in the session towards a harmonised calculation – preferably monthly or quarterly – of bank services that would not yield completely implausible outcomes (like negative FISIM output). In Europe, the establishment of such a task force had been agreed, but it was argued that it would be important to incorporate non-European views, as demonstrated by the valuable exchange of positions during the ISI session.

c. A European Task Force on FISIM

The draft mandate of a European Task Force on FISIM was recently prepared by Eurostat, the ECB and the CMFB Chair. Its timetable foresees three meetings in 2010 and 2011, and the final report will be presented by the end of next year. It is intended to amend the text of the 2010 ESA if appropriate,

meaning that a proposed solution if agreeable can still be implemented according to the new ESA in 2014.

The draft mandate covers three parts: It deals with (a) the background; (b) the issues to be discussed; and (c) the suggested composition and the timetable for the work. The background refers to the FISIM issues already considered during preparations for the 2008 SNA, under the issue of financial services updates, and in the context of the ESA revision. During the ESA revision, the current method of calculating and allocating FISIM was supported by most of the experts in Eurostat's National Accounts Working Group. However, it was considered that issues related to possible reference rates and treatment of different types of risks should be further investigated by a European Task Force. Three major questions were formulated related to the specification of the reference rates based on different maturities, currency denominations and (default) risks. The split of FISIM into price and volume also called for further analysis.

i. Different maturities

Related to the question of whether different maturities should be reflected in the FISIM calculations, it is argued that transforming short-term deposits into long-term loans is inherent to financial intermediation and provides "matching benefits" to financial intermediaries. Accordingly, it may be assumed that this transformation element should be included in FISIM output. In this case, there would be no need to calculate reference rates by maturity.

Otherwise, one option would be to exclude the transformation element from FISIM, which would mean introducing several reference rates by maturity¹². Excluding the transformation element from FISIM would support the position that banks no longer transform maturities, but rather enter into interest rate swaps to hedge their maturity risk. This would support the argument that the interest rate swap spread should be deducted from FISIM output.

ii. Different currency denominations

The 2008 SNA and the draft 2010 ESA consider different reference rates by currency to be relevant and feasible. This would necessitate a breakdown of loans and deposits by the currencies in which they are denominated. Like the 2008 SNA, the current text of the draft ESA Chapter on FISIM dealing with reference rates (Chapter 14, 14.08 to 14.10) distinguishes between an internal reference rate (for compiling the FISIM output of the resident financial intermediaries by the resident institutional sectors as users) and an external reference rate (for compiling FISIM on imports and exports). Moreover, several internal and external reference rates are recommended – by currency or by group of currencies – in cases where the loans provided and deposits taken are expressed in foreign currencies to a significant extent¹³.

The questions raised in this context include the continued relevance and feasibility of having different reference rates by currency, which would necessitate a breakdown of loans and deposits by currency in which they are denominated; and the adequacy and perhaps greater relevance of trying to improve the measurement of FISIM imports and exports on the basis of reference rates by main groups of currencies.

¹² Using several reference rates by maturity would have a larger impact on loans than on deposits because of the predominantly short-term nature of deposits.

¹³ For the time being, international statistical standards do not specify what 'a significant extent' means.

iii. Varying degrees of (default) risk

The third question raised is whether the varying degrees of (default) risk should be reflected in the service element (FISIM), in accrued interest or in other flows. Should riskier clients pay higher service charges, considering that risk-taking is inherent to the activities of financial intermediaries; or should FISIM be calculated excluding this risk element, considering that it is better and possible to separate production and risk?

iv. Price and volume measures

While the previous issues concentrate on measuring nominal bank output, it is also necessary to reconsider the concept of real output implied by the various approaches. In this respect, the subject of price and volume measures for FISIM will be an integral part of Task Force discussions. Bank (lending) output consists of intermediation services that certify borrowers as creditworthy at loan origination (screening) and on an ongoing basis (monitoring). Thus, a straightforward measure of real bank output might be the number of loans originated and monitored, just the output of a “normal” service provider would be measured. In principle, certain types of loans (for example, small business loans) may require more information processing than others (such as conforming mortgages). In conjunction, the four issues raised imply that a complete set of measures for FISIM – nominal output, real output, and an implicit price index for banking services – may be derived.

4. Treatment of credit default risk

This section refers to the issue of how to treat credit default risk when compiling FISIM. It was already touched upon in the context of the multiple reference rates method. The theoretical foundation of this method deals with spreads depending almost invariably on the risk differentials between bank assets and liabilities. They cover mainly the term premia, the liquidity risk premia, the prepayment risk premia and also the credit risk premia.

It is clearly a challenge to disentangle, for instance, the interest rate paid for a loan into its main components. According to cost accounting, the interest charged by the creditor is usually split into various components of costs. A major component of costs refers to the interest to be paid to refinance the granting of a loan, which also includes the termination costs. Refinancing costs comply with the risk-free interest rate of refinancing and may be covered by an interest swap or by a synthetic debt security with an AA rating and with the same maturity as the loan. If the original maturity of the loan is less than one year, money market rates would fit best – provided they have an identical lifetime and the same liquidity (for instance the Euribor or the Libor-rate). Termination costs may be covered by a swaption to be annualised and added. Further components of costs comprise the direct costs attributable directly to the various inputs of labour and capital, the operating surplus and the cost linked to the credit default risk incurred. If outsourced, the credit default risk refers to the price to be paid for a credit default swap. Its price includes the expected loan loss in the case of a credit event (the default) in exchange for paying a premium (see Table 1).

The interest costs for deposits as reflected in a risk-free rate should also include termination costs. Termination costs may be difficult to determine because economic and legal conditions are rather heterogeneous across various types of deposits. The right of determination in the case of saving deposits might be, for instance, three months, implying the use of three-month Euribor. However, termination rights need to be valued. This means that the bank has to cover the interest rate risk of refinancing (which is carried out by buying a swaption); its costs needs to be annualised and added to the refinancing costs.

Table 1: Coverage of interest rate components by specific risk premia

Description	Covered by
Price charged for providing capital,, or price set for receiving ‘capital’ for a specified period of time (risk free)	Interest rate swap with the same lifetime (corresponds to interest (coupon par rate) or a synthetic debt security with an AA rating)
Costs directly attributable to input of capital and labour	
Operating surplus	
Price charged to pay for credit default (credit default risk)	Credit default swap (CDS); the loan loss will be covered in the case of a credit event (default) in exchange for paying a premium; valuation of credit risk on the market. (In cases in which CDS data are not available, default rates are compiled based on standardised guarantees or internal or external rating procedures.)

Based on the components of interest and analogous to the treatment of non-life insurance, FISIM related to loans may be derived as: interest receivable minus (refinancing costs plus direct costs plus operating surplus plus costs related to the credit default risk), as indicated in the Table 2. This means that FISIM would not cover the costs related to credit default risk because they are already covered by interest receivable, as is the case for the calculation of non-life insurance services (as the difference between premia earned plus implicit premiums supplements less adjusted claims incurred).

Table 2: Derivation of FISIM and non-life insurance services

	Loans	Non-life insurance technical reserves
Resources	Interest receivable (covers default risk premium)	Premia earned plus implicit premium supplements (covers default risk premium)
Uses	Price charged for receiving ‘capital’ for a specified period of time (risk free)	Adjusted claims incurred
	Costs directly attributable to input of capital and labour	
	Operating surplus	
	Credit default risk	
Financial services	FISIM Interest less refinancing costs, direct costs, operating surplus, credit default costs	Premia earned plus implicit premium supplements less adjusted claims incurred

Based on these considerations, it should be explored whether there are options for measuring these financial intermediation services directly. Would it be feasible to collect – as part of the profit and loss accounts and the cash flow statements of deposit-taking corporations and other financial intermediaries – more detailed data on the components that determine the amount of financial intermediation services (to grant loans and to incur deposits)? Such components would be (a) the refinancing costs; (b) the direct costs (in relation to the input of labour and capital); (c) the operating surplus; and (d) the costs related to covering the credit default risk.

5. Conclusions

As shown in this paper, there is general agreement among national accountants that the current method used to compile FISIM as reflected in the international statistical standards (2008 SNA and draft 2010 ESA) offers room for further improvement. One controversial issue is the treatment of credit default risk: is credit default risk part of financial services or not? Analogous to the treatment of non-life insurance, FISIM credit default risk (which is important in relation to loans) should be excluded. However, further conceptual and practical work on this topic is needed as foreseen by the European Task Force on FISIM.

References

Akritidis, L. (2007), “Improving the measurement of banking services in the UK National Accounts”, *Economic & Labour Market Review*, Vol. 1, No 5.

Basu, S., R. Inklaar and J. C. Wang (2008), “The Value of Risk: Measuring the Service Income of U.S. Commercial Banks”, NBER Working Paper 14615 (<http://www.nber.org/papers/w14615>), Massachusetts Avenue Cambridge, MA 02138.

Burgi-Schmelz, A. (2009), “Measuring bank services: further developments; discussion: FISIM and Risk”, mimeo, paper presented at the ISI Session in Durban 2009, IFC Bulletin, forthcoming.

Colangelo, A and R. Inklaar (2008), “Bank output measurement for the euro area – a modified approach”, forthcoming.

Colangelo, A. and R. Mink (2009), “Bank services: some reflections on the treatment of default risk and term premium”, mimeo, paper presented at the ISI Session in Durban 2009, IFC Bulletin, forthcoming.

Colangelo, A. and N. Le Donné (2009), “Bank output measurement in the euro area: some reflections on default risk and term premium estimation”, mimeo.

Davies, M. (2009), “The Measurement of Financial Services in the National Accounts and the Financial Crisis”, mimeo, paper presented at the ISI Session in Durban 2009, IFC Bulletin, forthcoming.

Eichmann, W. (2009), “On a risk-adjusted FISIM”, mimeo, paper presented at the ISI Session in Durban 2009, IFC Bulletin, forthcoming.

European Central Bank (2003), *Manual on MFI Interest Rate Statistics*, ECB: Frankfurt, see <http://www.ecb.europa.eu/pub/pdf/other/mfiintreststatisticsmanualen.pdf>

European Central Bank (2008), “An enhanced methodology of compiling financial intermediation services indirectly measured (FISIM)”, presented at the meeting of the Committee on Monetary, Financial and Balance of Payments Statistics (CMFB), Luxembourg, 3 - 4 July 2008; also presented at the meeting of the OECD Working Party on National Accounts in Paris, 14 – 16 October 2008. [http://www.ois.oecd.org/olis/2008doc.nsf/LinkTo/NT000059AE/\\$FILE/JT03251258.PDF](http://www.ois.oecd.org/olis/2008doc.nsf/LinkTo/NT000059AE/$FILE/JT03251258.PDF).

European Council, Council Regulation (EC) No 2223/96 of 25 June 1996 on the “*European system of national and regional accounts in the Community*” (1995 ESA), Brussels, 25 June 1996.

European Commission (Eurostat) (2001), “Handbook on price and volume in national accounts”, Luxembourg; and Commission Decision of 17 December 2002.

European Commission (Eurostat) (2002), “Results of implementing FISIM calculation”, Luxembourg

European Commission (Eurostat) (2010), Chapter 14 on “Financial intermediation services indirectly measured” of draft 2010 ESA, available on CIRCA.

Fixler, D.J., M. Reinsdorf and S. Villones (2009), “Measuring the Services of Commercial Banks in the NIPAs”, mimeo, paper presented at the ISI Session in Durban 2009, IFC Bulletin, forthcoming.

Hagino, S. and K. Sonoda (2009), "Treatment of Risks in the Estimation of FISIM", mimeo, paper presented at the ISI Session in Durban 2009, IFC Bulletin, forthcoming.

Heidorn, T. (2000), „Entscheidungsorientierte Mindestmargenkalkulation“, Working Paper Nr. 21, Hochschule für Bankwirtschaft, Frankfurt am Main.

Inklaar, R., M.P. Timmer and B. van Ark (2008), "Data for Productivity Measurement in Market Services: An International Comparison", University of Groningen and The Conference Board.

International Accounting Standards Committee Foundation (2008), International Financial Reporting Standards IFRS 2008 Bound Volume.

Keuning, S.J. (2008), "Measures of output and prices of financial services: general conceptual issues and a discussion of papers", IFC Bulletin No. 28.

Mersch, Y. (2008), "Opening remarks by Governor Yves Mersch at the BCL - SUERF Conference on Productivity in the Financial Services Sector", Luxembourg, 11 and 12 November 2008.

Ravets, C. (2003), "Allocation of FISIM in the EU countries", SNA News and Notes, Issue 16.

United Nations, Eurostat, International Monetary Fund, Organization for Economic Cooperation and Development and World Bank (1993), "System of National Accounts 1993", Series F, No. 2, Rev. 4, United Nations, New York; also: "System of National Accounts, 2008" (2008 SNA), available at: <http://unstats.un.org/unsd/nationalaccount/SNA2008.pdf>

Wang, J. C. (2003), "Loanable Funds, Risk, and Bank Service Output," mimeo, Federal Reserve Bank of Boston.

Wang, J.C., S. Basu and J.G. Fernald (2004), "A General-Equilibrium Asset-Pricing Approach to the Measurement of Nominal and Real Bank Output", Working Paper of the Federal Reserve Bank of Boston, No. 04-7.

Wang, J.C. and S. Basu (2005), "Risk-Bearing, Implicit Financial Services, and Specialization in the Financial Industry", Discussion Paper of the Federal Reserve Bank of Boston, No. 06-3.

Wang, J.C. (2009), "Risk and Bank Service Output", mimeo, paper presented at the ISI Session in Durban 2009, IFC Bulletin, forthcoming.