

# Memorandum on FISIM

Itsuo SAKUMA  
Professor  
School of Economics,  
Senshu University

## Introduction

This paper is a study on “Financial Intermediation Services Indirectly Measured (FISIM).” FISIM is an item whose traditional term in national accounts is “imputed bank services” and is often inadvertently referred to as “imputed interest.”

In the process of revising the System of National Accounts to the 1993 SNA, the new name, FISIM, was created. It is a new name, but more than that, it indicates that there were changes in the contents FISIM refers to.

The inconvenience of treating a bank as a normal market service production unit was well known. In other words, since interest rate spreads between lending interest and deposit interest are an important source of income for banks, it was difficult to assume that only income from explicit services, such as exchange-related commission, is the output of banks, unless you are prepared to accept negative figures in operating surpluses or in added value produced by banks.<sup>1</sup> The devices developed for the national accounts to avoid the inconvenience were imputed bank services and FISIM.

## 1. 68SNA and 93SNA

Naturally, imputed bank services (and FISIM) considered difference between lending interest and deposit interest (net receipts of interest) to be the additional service output of the bank. But, there were vicissitudes in their treatment in the

---

<sup>1</sup> Commission income related to currency exchange and safety custody, etc. have been in place as income items of banks. Recently, banks charge explicit commissions for the use of ATM. If banks come to levy a charge for every service, it would be unnecessary to take the imputation measures discussed here. However, Mr Stauffer argues that since banks have a “withdrawal risk,” they are induced to reward customers by offering services with no price attached (not high-interest plus service charges), such as preferential treatment (free check, for instance) of customers maintaining a minimum amount of balance in deposit accounts. See Philippe Stauffer, “A Tale of Two Worlds: How Bankers and National Accountants View Banking,” paper presented at 28<sup>th</sup> General Conference of the International Association for Research in Income and Wealth (IARIW), Cork, Ireland, August 22<sup>nd</sup> – 28<sup>th</sup> 2004.

national accounts. This section focuses on changes in their handling in the 68SNA and the 93SNA. The allocation of FISIM and the reference interest rate in the 93SNA will be discussed briefly here, as they are discussed in detail in the next section.

### **Statistical units covered in the measurement of FISIM**

In the 68SNA, (apart from its implementation,) the imputation procedure should cover “banks and similar financial institutions” (68SNA, para.6.32).<sup>2</sup> The expression “similar (to banks)” needs explanation. It should be taken to mean financial intermediaries that raise funds through deposits and thereby supply liquidity to the society.

In the 93SNA, the financial institutions that should be covered in the FISIM measurement are those that provide services for which “they do not charge explicitly by paying or charging different rates of interest to borrowers and lenders (and to different categories of borrowers and lenders).” (93SNA, para.6.124) In other words, the statistical units covered are all financial institutions doing financial intermediation by gaining “interest spreads.” In addition, it should be noted that the units that engage in activities that are “deemed” to be financial intermediation, such as financial lease<sup>3</sup> are covered as well in the 93SNA recommendation.

As previously mentioned, the imputation has essentially been developed to avoid the inconvenience of handling banks as a normal service production unit – naturally involving to a certain extent receipts or payments of property income. Therefore, we have to be prepared to accept that another inconvenience – asymmetric handling of banks and normal service production unit – will be brought about by establishing a boundary in the scope of economic entities to be measured. A similar boundary can be found in the “margin industries,” such as real estate industries and wholesale/retail industries.

As a matter of fact, if a trading company raises funds by taking advantage of its

---

<sup>2</sup> The 68SNA, para.6.32 lists commercial banks, savings banks, and savings and loans association. I added the phrase “apart from its implementation,” because in the case of Japan, for instance, securities companies have conventionally been covered in the imputation procedure (even before the shift to the 93SNA in 2000). It can hardly be said that securities companies are financial institutions similar to banks. In fact, although the 93SNA classifies securities companies as financial institutions other than financial intermediaries, that is to say, financial auxiliaries (s. 124), the Japanese SNA (and Bank of Japan’s Flow of Funds Statistics) positions them as financial intermediaries (s. 123 of the 93SNA) because they do some financial intermediation.

<sup>3</sup> In Japan, the 93SNA provision that deems financial lease to be financial intermediation is not adopted.

position in a capital market and lends the funds to enterprises in a disadvantageous position in the market, the trading company would be able to make a profit. But, according to 93SNA recommendations, trading companies are not considered to be the units covered in the FISIM measurement. (The same is true in the case of non-specialised units lending own funds to borrowers in a disadvantageous position.) In all likelihood, such a trading company would not have special capital equipment and staff to manage deposits, and specialised staff to control lending and monitor borrowers. To put it another way, such a trading company would not be doing financial intermediation as distinctly different activities.

### **Service contents**

Let us examine by using the concept of “production boundary.” It goes without saying that some of the banking activities that are not accompanied by explicit cash income in exchange for services are, in light of the third-party criterion (Hill’s criterion<sup>4</sup>), within the general boundary of production. For instance, a consumer can pay utility bills through his/her bank account. In this case, he or she can save, at least, the travel time with a help of the bank.<sup>5</sup> More generally, banks can drastically reduce the settlement costs of other economic entities by shouldering some of the costs that are known as “transaction costs” and often eliminated in a pure theoretical model. The banks specialised in such settlement functions are called “narrow banks” in the recent terminology.

Therefore, the necessity of placing the banking activity in question within the production boundary of the system seems to be also relatively clear. This is because there are lots of labor input that receive compensation of employees in money form and because treating it as primary input, without taking the output side into account, leads

---

<sup>4</sup> If a person can ask someone else to do something for him or her, this “something” to be done is deemed to be within the general production boundary according to the third party criterion. Note that he or she might do it by himself/herself actually. A natural corollary is that if another person actually does it for him or her, on a market basis or voluntarily, that person is deemed to conduct some production activity. In fact, 93SNA stipulates that the production of all individual or collective goods or services that are supplied to units other than their producers, or intended to be so supplied, should be within the production boundary of *the system* as well as the general boundary (para.6.18) although it seems not so clear about the treatment of voluntary labour input.

<sup>5</sup> In other words, his or her bank account functions as the medium of exchange. Note that some resource consuming processes are involved in the bank’s operation concerning the maintenance and management of the customers’ accounts. Also note that even in the case of notes and coins, in order for them to work as the medium of exchange someone needs to carry them with him/her.

to twisted understanding of banks' input/output structure.

So far, the parties to be provided with the service in question are depositors. Services to borrowers are also conceivable. For instance, saving of funding costs (as compared with those in the case of direct financing). Incidentally, it is often said that banks conduct monitoring of corporate borrowers. But it is not clear to whom the service is provided through this activity.

It is also often pointed out that the 93SNA takes into account both services for depositors and services for borrowers, while imputation under the 68SNA takes into account services for borrowers.

However, paragraph 6.34 of the 68SNA says that the key services that banks were supposed to produce are "channeling the savings of other economic agents into loans to industries." We should take note that the services or "functions" of banks, etc. are described almost solely from a social point of view here. Banks collect savings by extending facilities to depositors and apply the savings to the investment activities of corporations. We should examine the issue by dividing the latter part of the process into two stages: (1) services provided at the stage of screening applicants and (2) services provided at the stage of disbursement and management of loans.

The saving of funding costs mentioned above corresponds to bank's functions included in (1). What should be kept in mind with regard to (1) is that the companies that were eliminated in the screening process and thus unable to get loans were also in the screening process anyway. Let us consider the case in which a bank lends a sum of money to a firm A but not B. Is it possible to say that the bank provides some services to A not B? Clearly, information of a sort about B was produced as well as A in the process of screening. Thus, if the databases of potential borrowers were in place, the screening process would be much easier.<sup>6</sup> What should also be kept in mind is that banks, when deciding about loans, will also decide the allocation of funds by industry, perhaps on the basis of their own researches on the overall economic condition and its structure and forecasting the direction of development. In the case of banks established for the purpose of public policy, consideration should also be given to the maintenance and development of the community, regional development, and environmentally sustainable development. In this manner, bank's fund allocation functions include a collective nature of services to a great extent, as is most evident in the case of publicly controlled banks.<sup>7</sup> In addition, it should be pointed out that the functions of the banking sector,

---

<sup>6</sup> Consumer finance companies, for example, have an incentive to jointly establish a data base of potential borrowers.

<sup>7</sup> Some types of government institutions raise funds in the form of government debts or postal savings and some others extend loans by using government funds. The former

with the central bank in it, include controlling money supply (implementation of monetary policy), another clear example of “public goods.”

Leaving aside the question of whether or not the 68SNA focused attention on the collective nature of the services, the 68SNA contended that it is difficult to allocate imputed service charges to industries, general government, and household, etc. and treated them in a lump sum as the intermediate consumption of a nominal industry.<sup>8</sup>

### **The Method of Measurement**

In the 68SNA, “the imputed service charge should, in principle, be equated to the excess of the property income received by the banks and similar intermediaries on loans and other investments made from the deposits they hold, over the interest they pay out on these deposits”(68SNA, para. 6.33). This measure is almost the same as those of FISIM in the 93SNA. The measurement of FISIM (imputed bank service charge) may be conducted as follows. Apparently, it is not so difficult.

**FISIM (imputed bank service charge)**

= **Property Income Receivable**

(Excluding Income on Own Funds)

Includes: interests receivable, dividends, net rent of land

**Minus**

**Interest Payable**

Includes: interests payable to depositors

By using Figure 1 below, the author would like to call attention to the following three points. First, both the 68SNA and the 93SNA exclude property income receivable

---

institutions are classified as public financial corporations. On the other hand, the latter institutions, though they do not engage in financial intermediation (and therefore not financial institutions), were tentatively positioned as financial institutions as “government lending institutions” in the 68SNA. Such institutions are not objects of imputation in the 68SNA but are objects of FISIM imputation in the 93SNA, except for government lending institutions. In the 93SNA, government lending institutions are not financial institutions. They are included in non-market type government services. This also suggests that certain types of activities of financial institutions are very close to non-market type services.

<sup>8</sup> See 68SNA, para. 6.35.

from investment of own funds (if their actual difficulties are not taken into account).<sup>9</sup> This is because it is not financial intermediation (not bridging between savings of other entities and investment). Debatable points with regard to investment of own funds will be mentioned later.

Second, the 68SNA focused attention on the property income from investment of deposits (D), but the 93SNA, since it focuses on interest spread, must have taken into account a wider range of fund raising (D + E).<sup>10</sup>

As to the asset side, the 68SNA, and the 93SNA for that matter, takes into account not only loans but also all assets except for fixed assets (G), such as banks' own buildings.

In this manner, the 68SNA and the 93SNA have more in common than they have in contrast with regard to measuring FISIM (imputed service). But, it is so only as long as allocation of FISIM is not taken into account. As has been mentioned, the 68SNA does not allocate imputed services, but the 93SNA "in principle" allocates FISIM to various final uses and intermediate uses.<sup>11</sup>

Simplified Balance Sheet of Financial Intermediaries	
Loans A;	Deposits D;
Other financial assets (excluding C below) B;	Other fund raising E; Example; Bank debenture;
Examples; Government bond, CP, shares;	Own funds (equities, net worth) F
Deposits with the Bank of Japan C;	
Fixed assets G	
Example; Buildings of bank branches;	

Figure 1

### Problems of central banks

The 68SNA makes no mention of central banks. But, para 6.123 of the 93SNA recommends that the services of financial intermediation provided by central banks should be measured in the same way as those of other financial intermediaries.

<sup>9</sup> See 68SNA, para.6.33 and 93SNA, para.6.125.

<sup>10</sup> See 93SNA, para.6.125.

<sup>11</sup> The 93SNA has a flexibility provision allowing continued use of the convention proposed in the 1968 version of the SNA (para 6.126). Therefore, each country was able to record the whole of the output as the intermediate consumption of a nominal industry at its own discretion without allocating FISIM. The policy Japan adopted when it shifted to the 93SNA in the fall of 2000 was in conformity with this provision.

However, central banks are issue banks and the fund-raising position of central banks is significantly different from that of private banks. Moreover, the collective nature of central banks' services is clear. Therefore, it would be reasonable to say that central banks' output should be valued by their costs, in the same way as government services.

## **2. Allocation of FISIM and Reference Rate of Interest: 93SNA and Proposal by Eurostat**

What differentiates the 68SNA and the 93SNA is that the latter recommended a method of allocating FISIM output by using a concept of "reference interest rate." That is to say, according to the 93SNA, "FISIM must be recorded as being disposed of in one or more of the following ways - as intermediate consumption by enterprises,<sup>12</sup> as final consumption by households, or as exports to non-residents." (93SNA, para 6.125) And the 93SNA recommends as follows: "When the output is allocated among different users, one possible way of proceeding is to base the allocation on the difference between the actual rates of interest payable and receivable and a 'reference' rate of interest." (93SNA, para 6.127)<sup>13</sup>

However, as will be explained more fully later, it is generally impossible to allocate FISIM as defined above (sometimes called "global FISIM") by using a reference rate, which is the most notable developments concerning FISIM after the publication of the 93SNA. For this reason, it can be said that the allocation of FISIM has resulted in changing the concept of FISIM.

The EU initially (in ESA95) did not require member states to allocate FISIM,

---

<sup>12</sup> The usage of the word "enterprise" in the 93SNA is a bit tricky. The explanation is, "...defines an institutional unit engaged in production as an enterprise" (93SNA, para 5.1). In the same paragraph, it also states, "An enterprise may be a corporation (a quasi-corporate enterprise being treated as if it were a corporation in the System), a non-profit institution (NPI), or an unincorporated enterprise. Corporate enterprises and non-profit institutions are complete institutional units. An unincorporated enterprise, however, refers to an institutional unit - a household or government unit - only in its capacity as a producer of goods and services. It covers only those activities of the unit which are directed towards the production of goods or services. Many households do not contain an unincorporated enterprise."

<sup>13</sup> The second half of the para 6.127, 93SNA says, "When the requisite information is available, estimates of the following may be calculated and used to allocate the total output:

(a) For those to whom the intermediaries lend funds, both resident and non-resident, the difference between the interest actually charged on loans, etc. and the amount that would be paid if a reference rate were used;

(b) For those from whom the intermediaries borrow funds, both resident and non-resident, the difference between the interest they would receive if a reference rate were used and the interest they actually receive.

because of some concerns about how to make the allocation in practice and the reliability of the calculations. But EU Council Regulation (EC) 448/98 of 16 February 1998 presented trial methods of calculating and allocating FISIM which were to be tested by member states for the years 1995 to 2002. Based on the results of the tests, the Council Regulation (EC) 1889/2002 of 23 October that confirms that FISIM is to be allocated, fixes the methods to be used and sets the 2005 deadline for the implementation of the allocation of FISIM in national accounts.<sup>14</sup> This section discusses allocation of FISIM by using the 93SNA and the EU proposal.

### **Reference rate of interest**

According to the 93SNA, para 6.128, the referent rate “represents the pure cost of borrowing funds - that is, a rate from which the risk premium has been eliminated to the greatest extent possible and which does not include any intermediation services.”

The interest rate that banks and other financial intermediaries actually receive or pay is the reference rate minus service charges (in the case of interest rate on deposits) or the reference rate plus service charges (in the case of interest rate on loans). The principle of 93SNA’s FISIM allocation is breaking down such “nominal” flow of interests into the flow of reference rate, or the pure cost of borrowing funds, and the flow of indirectly measured service charges, and allocating FISIM to institutional sectors and to industrial sectors. Therefore, it yields a by-product since, in theory, it replaces most of the flow of interest in which banks and financial intermediaries are involved (on the receiving side or on the paying side), with the flow of a uniform reference rate. Naturally, it causes a major change in the recording of the financial aspects of the economy.<sup>15</sup>

---

<sup>14</sup> See Christian Ravets, “Allocation of Financial Intermediation Services Indirectly Measured (FISIM) in the European Union Countries,” *SNA News and Notes*, Issue 16, April 2003. Incidentally, there is a same-titled OCED paper by Brian Newson in OECD National Accounts Experts Meeting on 7-10 October 2003. The original report containing the results of the tests can be found in Commission of the European Communities, “Report from the Commission to the Council and the European Parliament concerning the Allocation of Financial Intermediation Services Indirectly Measured (FISIM) containing a qualitative and quantitative analysis of the results of the trial calculations for allocating and calculating FISIM as described in the Council Regulation (EC) No 448/98 Of 16 February 1998,” Brussels, 21 June, 2002. It should be noted here that the EU regulation called for the adoption of the method in national account statistics. Flow of funds statistics and balance of payments statistics are expected to be immune from the FISIM regulations and resulting changes in the recording method for interest flow. This is perhaps because the users and producers of the statistics are not (yet) convinced about the FISIM regulations.

<sup>15</sup> This is in contrast to the “imputed” service in the 68SNA that gave special consideration to prevent disruption of financial records. In fact, with regard to income and outlay accounts,



The 93SNA, para 6.128, proposes either the inter-bank lending rate or the central bank lending rate for use as the reference rate.

Eurostat has laid down FISIM allocation by using the following specific inter-bank rate as the reference rate.

Interest receivable on loans between resident financial intermediaries (s122, s123)

Stocks of loans between resident financial intermediaries (s122, s123)

### **FISIM allocation by reference rate**

Figure 2 shows the relationships of reference rate ( $r$ ), interest rate on deposits ( $d$ ), and interest rate on investment ( $a$ ), in various cases.

Case 1 is a typical case. According to an analysis by the 93SNA,  $(r - d)$  is considered indirect service charges to lenders (depositors) and  $(a - r)$  is considered indirect service charges to borrowers.<sup>16</sup> In its original recommendation, the 93SNA thought that FISIM allocation is possible with this policy, as long as data-related problems are cleared.

Case 2 is a case where the margin is small. Case 3 is a case where service charges to borrowers are larger than service charges to lenders. Up to these cases, the allocation of FISIM seems feasible with the 93SNA recommendation. However, when the reference rate is not in between the interest rate on investment and the interest rate on deposits, like Case 4, it is impossible to allocate FISIM in line with the 93SNA recommendation. Moreover, like Case 5, there may be cases where only minus service charges can be measured, regardless of the size of the reference rate.<sup>17</sup>

---

the 68SNA classified nominal industry units as financial institutions. Therefore, it was assumed the negative operating surpluses of such “special” financial institutions would be completely offset by imputed service charge income received by banks, etc.

<sup>16</sup> It is not uncommon that service charges are indirectly charged. For instance, a money changer for tourists may include “service charges” in the currency exchange rate. Or he may charge “service charges” called a commission separate from the exchange rate. Moreover, the “service charges” are most likely to vary from one money change to another.

<sup>17</sup> This is a case that actually occurred in trial calculations of FISIM conducted in Japan with regard to exports/imports of FISIM (Hideki Yamaguchi, “*Study on FISIM Estimation Method*” National Accounts Quarterly No. 130, June 2004). Apart from exports/imports problems, there are possibilities of “cross-subsidisation” among the various activities of banks.

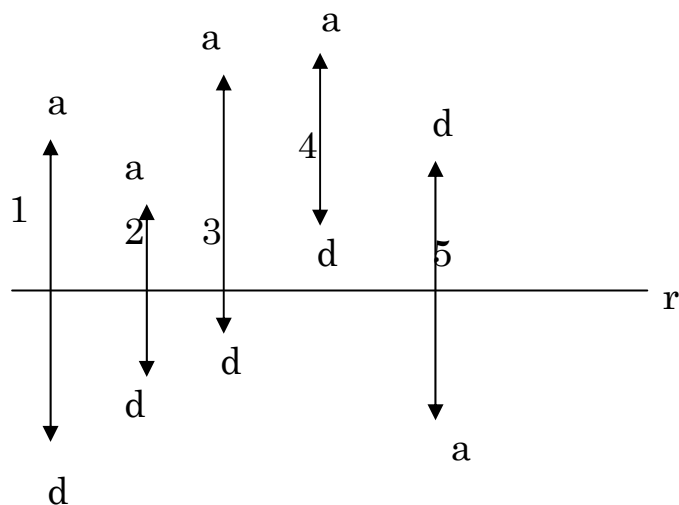


Figure 2 Reference rate; interest rate on deposits; interest rate on investment

$(r - d) \times D$  and  $(a - r) \times A$  are the aggregate sum of indirect service charges to lenders (depositors) and borrowers, respectively. (For simplification, let us assume  $D$  is the only funding vehicle and  $A$  is the only type of invested asset.) According to the definition of in the previous section, FISIM (global FISIM) is

$$\text{FISIM} = aA - dD \quad (1)$$

But, in order for it to be  $(a-r) A + (r-d) D$  (total of detailed FISIM, total FISIM), or in order for the equation

$$\text{FISIM} = aA - dD = (a-r) A + (r-d) D$$

to be the case,  $A$  must be equal to  $D$  ( $A = D$ ), in other words, loan balance must be equal to deposit balance.

Eurostat proposed that the right-hand side of the above equation

$$(a-r) A + (r-d) D = (aA - dD) - r(A - D) \quad (2)$$

be a new yardstick for FISIM in order to avoid the above difficulty.<sup>18</sup>

Professor Peter Hill's "Services of Financial Intermediaries or FISIM Revisited" (Joint UNECE/Eurostat/OECD Meeting on National Accounts, Geneva, 30 April – 3 May 1996), which had a profound impact on the proposal by Eurostat, studied this point in more detail.<sup>19</sup> With regard to the balance sheet ( $A+B+C+G=D+E+F$ )<sup>20</sup> in Figure 1, if

<sup>18</sup> Besides the previously mentioned papers by Ravets and Newson, Mr Toru Oumori of The Bank of Japan made a detailed study on the Eurostat proposal, "A Study on the Concept of 'Financial Intermediation Services Indirectly Measured'" (in Japanese, Bank of Japan Working Paper Series, 03-9, July 2003)

<sup>19</sup> In the paper prepared for the Australian Bureau of Statistics as a consultant, he did

we note the facts that Professor Hill limited invested assets for the calculation of FISIM only to loans (A), that his supposition that formation of fixed assets is made by own funds was accepted, and that, after simplifying and limiting funding vehicles only to deposits (D) (and therefore  $A+G=D+F$ ), that interests from investment of own funds ( $A^F$ ) were not included in the FISIM (FISIMSNA) of the 93SNA (1),

$$\begin{aligned} \text{FISIMSNA} &= (aA - dD) - aA^F \\ &= (aA - dD) - a(A - D) \\ &\because A^F = A - D = F - G \end{aligned} \quad (3)$$

A comparison of the above equation with the equation (2) shows that the difference is whether  $(A - D)$  is multiplied by the reference rate or by the interest rate on investment.

### Problems on the unique reference rate and risk premium

One of the focal points is whether such a unique reference rate for the pure cost of borrowing funds exists or not. It raises serious questions to assume the unique interest rate, not in a theoretical model, but in a step to process statistics. There is a danger that it is not fully understood by the producers and users of statistics that such an imaginary rate could affect balance of payments statistics and other economic and financial statistics beyond the scope of national accounts statistics.

Let us examine the matrix of lender ( $L$  entities, including  $F$  financial intermediaries) x borrower ( $B$  entities, including  $F$  financial intermediaries).<sup>21</sup> The 93SNA and also the Eurostat proposal for that matter, seems to have assumed that any element of the matrix can be written as follows:

$$r_{lb} = r + s_{lb} \quad (4)$$

Here,  $r_{lb}$  is a nominal interest rate between lender  $l$  and borrower  $b$ , and (the absolute value of)  $s_{lb}$  is service charges included in the nominal interest rate (with

---

not use the term FISIM for the kind of FISIM expressed by the equation (2), and instead called it SSC (Sum of the Service Charges). Nowadays, the term FISIM is used less often than before for the kind of FISIM expressed by the equation (1).

<sup>20</sup> Consider it as an equation for the financial intermediaries excluding the central bank (S. 121) on a consolidated basis.

<sup>21</sup> Instead of the two-dimensional matrix described above, you can consider lender by borrower by financial instrument (three-dimensional) matrix.

$s_{lb}$  being plus or minus depending on the case, for example,  $s_{lb}$  being minus in the case of lender = depositor and borrower = bank). Of course,  $r$  is the reference rate.

The author would like to point out several problems with regard to the equation.

First, considering that the reference rate is the pure cost of borrowing funds and the risk premium is excluded (and so claimed), the risk premium is included in  $s_{lb}$ . However, since the risk premium should be considered as an (non-life) insurance-premium-type payment, it seems more reasonable to think that most of the risk premium is a contractual transfer, although the existence of the factor of service charges in the premium cannot be denied. Therefore, the following equation would be more persuasive:

$$r_{lb} = r + rP_{lb} + S_{lb} \quad (5)$$

Thus, for example, this equation tells that the level of resources consumption varies greatly depending on whether the loan is collateralised or not.

Suppose a bank lent a sum of money to a somewhat risky firm with a high interest rate. Suppose that during first four years, the firm's business went fairly well. So the bank got a relatively large amount of money as interest received. The difference between the interest rate and the reference rate was, of course, deemed to be service element involved. But suppose that in the fifth year, the firm went bankrupt. So, the bank received no money that year. If we consider the bank's output through the entire five years, the bank's production of FISIM seems to be overestimated because the risk premium element was counted in its services.

Next, equation (4) (and even equation (5)) does not recognise transfer factors except for the pure interest (and risk premium). It treats various factors that affect the level of interest rate, such as the relationship between lenders and borrowers, and the difference in fund-raising capacity, as services not as current transfers. In short, the principle to explain the difference in nominal interest rate is too weak.

In addition, there will be cases where the existence of a unique reference rate of interest is impossible, as we have seen in the Figure 2. It is well known that such cases occurred frequently with regard to exports/imports of FISIM, in particular.<sup>22</sup>

Finally, the author would like to raise doubts from the standpoint of opportunity cost.

---

<sup>22</sup> See page 8 of the previously mentioned paper written in Japanese by Mr Yamaguchi and page 30 of Yuji Ounuki and Hideki Yamaguchi, "Trial Estimation of Financial Intermediation Services Indirectly Measured (FISIM) in Japan" in the same issue. For this reason, you have no choice but to treat exports/imports of FISIM on an ad-hoc basis.

In the author's opinion, it is a good bet that the size of the (individual) services to depositors provided by banks, etc. can be measured in a method close to the allocation of FISIM. But, the service price should be measured not by the difference between the unique reference rate and deposit interest rate but by the difference between the maximum interest rate each depositor would get and the deposit interest rate, or in other words by opportunity cost. Although allocating FISIM by using the reference rate could be a rough approximation, it is necessary to take into account that the opportunity cost in question varies depending on individual depositor and sector (size of deposits, and whether it is incorporate enterprise or individual).

### **Contents and examination of the Eurostat proposal (excluding the proposal concerning the estimation at constant prices)<sup>23</sup>**

As previously stated, the 93SNA and for that matter its EU equivalent, European System of Accounts 95 (ESA95), did not require member states to allocate FISIM. However, EU member states, as already explained, have to incorporate FISIM allocation in their national accounts statistics before the deadline set for 2005 (EU Regulation No 1889/2002, Oct. 23, 2002). The 93SNA, which is now undergoing a minor change slated for completion by 2008, is quite likely to incorporate the same FISIM allocation as that in the EU regulation.

The EU regulation, as mentioned previously, is based on the report on the results of the EU tests. The main results of the EU tests reported are as follows.

(1) Allocating FISIM is recognised as an improvement of the national accounting methodology as more accurate GDP levels could be obtained: GDP would include the entire value added generated by financial intermediaries, and not just the part corresponding to commissions and fees invoiced to customers.

(2) The impact of allocating FISIM on GDP (GNI) would correspond, on average, to an increase of 1.3%. The results are similar among member states, and quite stable through years.

(3) Despite the lack of direct sources for some data, a sufficient level of quality has already been obtained. The main problem met were the calculation of imports of FISIM and the breakdown of households' deposits and loans in order to determine the parts corresponding to final and intermediate consumption.<sup>24</sup>

---

<sup>23</sup> The Eurostat proposal taken up here is based on previously mentioned papers by Ravets and Newson.

<sup>24</sup> That is, division of households as consumers and as non-corporate enterprises and producers of housing services (imputed rents).

Based on the evaluation of the results of the tests, EU Regulation No 1889/2002 confirmed allocation of FISIM and determined a method to be used. In addition, it set the deadline for implementation of FISIM allocation in national accounts statistics by member states for 2005.

The contents of the EU regulation can be summarized as follows.

(1) First, a bottom-up approach to the measurement of FISIM was adopted. That is to say, FISIM was defined not by the above equation (1) but by the equation (2).

(2) Second, according to the Eurostat proposal, when allocating FISIM, only loans with regard to the receiving side and only deposits with regard to the paying side will be taken into account, not the entire property income received and interest paid as in the case of the 93SNA.<sup>25</sup> The rationale behind this is somewhat interesting. The Eurostat proposal decided on the method on the grounds that only interest rates concerning loans and deposits can be controlled by financial intermediaries. The same argument can be found in the Eurostat paper in 1996<sup>26</sup> as well as Hill's influential paper referred to above.

Their argument seems to be that if financial intermediaries can control the interest rate, they can set the rate with the service charges added or subtracted, and that the interest rates concerning loans and deposits are those which are subject to financial intermediaries' control.

However, interest rates concerning loans (among others) are generally strongly influenced by the relationship between the lenders and the borrowers. So, it is not so self-evident to conclude that the margins over the market interest rate if any (=the reference rate) the lenders get are equal to the service charges (only in the case of the lenders being financial intermediaries).

One of the consequences of this argument is the exclusion of securities from the financial instruments covered in the FISIM calculation. But, securities or even shares are, at any rate, in the portfolio of the financial intermediaries. Some resource consuming processes are evidently involved in the management of the portfolio by the financial intermediaries. Some people, including Stauffer (cited before), argue that much more, or even all, balance sheet items of financial intermediaries should be taken into account.

---

<sup>25</sup> With regard to the scope of financial intermediaries, there are no changes between the 93SNA and the Eurostat proposal. That is to say, S122 (other monetary financial institutions) and S123 (other financial intermediaries, except insurance corporations and pension funds) are the institutional (sub) sectors covered in the measurement of FISIM as the producers of FISIM.

<sup>26</sup> Eurostat, "Proposal for a Council Regulation on the allocation of FISIM," the meeting of the Working Party on National Accounts, Luxembourg, 28-29 March 1996.

(3) Third, in preparation for calculation of FISIM, inter-bank loans and deposits have to be separated from those for other users. That is to say, of the loans and deposits in the balance sheets of the financial intermediaries included in S122 or S123, those from S122 and S123 and those to S122 and S123, in other words inter-bank (excluding the central bank) loans and deposits, must be separated from other loans and deposits; it is necessary to use loan and deposit balances (annual average of quarterly data) and accrued interest data; with regard to loans and deposits abroad, those of nonresident financial intermediaries must be separated from those of other nonresidents; and in order to calculate imports of FISIM, nonresident financial intermediaries' loan and deposit balances and interest paid and received by sector of users must be available.

(4) Next, the calculation and allocation of FISIM must be made for loans and deposits respectively based on the difference between the actual rates of interest payable or receivable and a reference interest rate. The difference is a margin acquired by financial intermediaries. With regard to loans, it should be noted that those from own funds are not excluded. The last point is based on an argument in Hill's paper. In fact, Hill maintains that, although lending itself is not production activity, there are production activities that must be engaged when institutional units make loans to a large number of customers and that, in such a case, it is not necessary to distinguish between loans from own funds and loans from other funds.

However, if Hill's argument was extended, it could result in calculating FISIM even in the case of "village money lenders"<sup>27</sup> who lend their own funds, and in the case of institutional units that are not classified as financial corporations in the 93SNA, such as government lending institutions.

Incidentally, as a result of EU tests, it was agreed to use an inter-bank rates as the reference rate. Its computational expression is reproduced here.<sup>28</sup>

$$\frac{\text{Interest receivable on loans between resident financial intermediaries (s122, s123)}}{\text{Stocks of loans between resident financial intermediaries (s122, s123)}} \quad (6)$$

<sup>27</sup> See 93SNA, para 4.82 and para 6.134.

<sup>28</sup> Because of its definition, the reference rate of interest is pure cost of borrowing without any service element, leading to the conclusion that FISIM is not rendered concerning the loans in the above equation (6). In fact, if FISIM is calculated by multiplying stocks of loans of the sectors (s122, s123) by the margin, FISIM=zero. However, in theory (unless a kind of net recording is followed), financial intermediaries can be consumers of FISIM (positive or negative) concerning the loans in question as well as producers, because financial intermediaries may take out loans at other financial intermediaries with interest rate contracted above or even below the average (6). Of course, financial intermediaries can be consumers of FISIM concerning deposits with other financial intermediaries.

Note, however, that Eurostat proposed using a different reference rate for the calculation of export/import of FISIM. And it is the weighted average of inter-bank rates on loans and deposits between resident financial intermediations and nonresident financial intermediaries. It should also be noted that the EU made a fairly ad hoc proposal, saying it was ready to set reference rates currency by currency, if necessary.

As previously stated, the problem with (4) is the rather dogmatic assumption about the existence of a unique reference rate. If the author may be allowed to state again, from the viewpoint of opportunity cost, there are most favorable interest rates for diverse customers (in terms of investment and procurement of funds), but the customers are using banks, etc. abandoning the most favorable rates for them. For customers, the value of using banks, etc. is opportunity cost (or user cost). Since the most favorable rates for them are diverse, it is, in some cases, impermissible to use a unique reference rate to represent the most favorable rates and is even infuriating to make it the principle for processing statistics. In practice, we question the wisdom of assuming the “domestic” existence of such an interest rate. It is practically impossible for such a rate to exist in loans and deposits and in domestic and international transactions throughout.

In particular, there is a rather serious problem reported with regard to FISIM export and import. “Rather serious” because of the following reason. That is, originally, allocation of FISIM primarily had three problems to be overcome; (1) financial intermediaries have to be deemed to engage in production; (2) the production has to be somehow reflected in GDP (it should not be treated as intermediate consumption of the nominal industry as in the case of the 68SNA), and (3) GDP of small countries having international financial centers should not be underreported. In the case of adopting a method of allocating FISIM (or in the case where an alternative method of treating financial intermediaries in a similar way as government services is not adopted), the last point in question is that there is no choice but to adopt a method of allocating FISIM to export (and import).<sup>29</sup> Therefore, this appears to be a rather serious defect in 93SNA’s FISIM allocation. The EU proposal tried to correct this defect by abandoning the uniqueness of the domestic and international reference rate. In tests conducted in

---

<sup>29</sup> For the alternative method in the bracket proposed by the author himself, see “A Proposal – Imputed Interest and Imputed Commission in SNA (in Japanese),” *Kokumin Keizai* (National Economy), No. 138, 1977. A similar proposal was examined in the course of establishing the 93SNA. However, it is difficult to incorporate financial intermediation services into models containing IO structure (at least in the same manner as ordinary industries are treated) by this method. But it should be questioned whether the proposition that 0.3 unit of FISIM is necessary to produce one ton of steel has any meaning.



Japan,<sup>30</sup> yields, not interest rates, were used to calculate FISIM's export and import. But in view of the fact that yields contain capital gain elements, it seems to contravene one of the basic principles of national accounts.<sup>31</sup>

(5) As to the treatment of central banks (S.121), the EU regulation stipulates that the output of a central bank should be measured by building up costs as in the case of government services. This is in violation of 93SNA recommendations. The EU proposal maintains that, due to the unique functions which may be performed by central banks, treating central banks in the same way as in the case of other financial intermediaries yields strange results.

The author would like to make a few comments. A central bank's costs will remain extremely stable compared with its interest margin, and central banks do not seek the maximisation of profit. Since central banks are operated for public policy objectives, such as stabilisation of prices, if a central bank seeks maximisation of its margin, it would cause an excessive liquidity or result in a large-scale run on banks. If this is the case, the question is how other publicly controlled banks with public policy objectives should be treated. Furthermore, it could be maintained that one of the *raison d'être* of the indirect financial institutions including banks may be to improve the situation of many economic entities placed in a disadvantageous position in the capital market. Viewed in this light, it would be worth considering the measurement of the output of at least publicly controlled banks as well as the central bank, more preferably wider range of financial intermediaries, using their costs.

(6) Lastly, with regard to the allocation of FISIM by industry (not by institutional sector), the EU regulation stipulates that the allocation of FISIM is based on the stock of loans and deposits for each industry, or if this information is not reliable on the output of each industry.

The former as well as the latter cannot be said to be a strict application of the reference rate system. For instance, declining industries may be asked for a higher risk premium. In short, what the EU proposal requires to be an elaborated FISIM allocation based on the reference interest rate is only an allocation by institutional sector. The failure of the allocation by industry clearly demonstrates the difficulty of allocating FISIM on the basis of the reference interest rate system.<sup>32</sup>

---

<sup>30</sup> See previously-mentioned Ounuki and Yamaguchi paper and Yamaguchi paper.

<sup>31</sup> Stauffer, however, argues that entire profits including (expected) holding gains should be taken into account in the measurement of FISIM.

<sup>32</sup> It may be possible to explain the matter from the viewpoint of "real-financial dichotomy." If we notice that the main aim of measuring FISIM is to capture the activities of financial intermediaries in real not financial spheres, it is more important to allocate FISIM by industry than by institutional sector. But, after all, interests are paid or received on an

In addition to (1) to (6) above, the EU regulation contains matters concerning the constant price estimation of FISIM.

### 3. The Constant Price Estimation of FISIM

There is no mention of the constant price estimation of FISIM (or imputed bank services) either in the 68SNA or in the 93SNA. However, the Eurostat proposal included the following procedures concerning the estimation of FISIM at constant prices. To be more specific, with regard to FISIM at constant prices, it proposed that the base-year margin between the reference interest rate and actual interest rates on loans and deposits should be applied to the balance of loans and deposits deflated by the general price index (preferably by final domestic demand deflator) to get FISIM at constant prices.<sup>33</sup>

First of all, it should be noted that this proposal could affect price index statistics, such as Consumer Price Index (CPI; Statistics Bureau, Ministry of Internal Affairs and Communication) and Corporate Service Price Index (CSPI; Research and Statistics Department, Bank of Japan). Let's take up some points in question in the proposed procedures.

First, the Eurostat proposal on the constant price estimation of FISIM is almost the same as using a "commission rate" system as is often seen in price index statistics. For instance, in the case of "trust business services" in CSPI, the following explanation is made with regard to commissions on management and investment of trust assets: "As service prices are determined based on commission rates (xx%), the commission rates are converted to a 'price' basis through multiplying the rates by an appropriate inflator (a price index showing the trend of general price level). This price is adopted as price data for the CSPI and "consumer price index (national; excluding perishable foods; seasonally adjusted) compiled by the Ministry of Internal Affairs and Communications is used as the inflator."<sup>34</sup> (There is one-month time lag. For instance, the consumer price index for January is used in the compilation of February CSPI.)

There are two points in question in the proposal: (1) it treats fluctuations of commission rate (%), or interest spread (margin, %) in the case of FISIM, as a "price" P component and (2) it assumes that "quantity" Q components can be separated from outstanding balance by using some appropriate inflator.

---

institutional unit basis only, resulting in fundamental difficulties.

<sup>33</sup> More detailed account of the matter can be found in Oumori paper mentioned earlier.

<sup>34</sup> "List of Services Covered by Corporate Service Price Index (CSPI)," p. 5, Research and Statistics Department, Bank of Japan.

However, the author believes that there are problems that have to be examined with regard to the treatment of risk premium and selection of inflator. As to the first point, since risk management inevitably involves resource input, it is necessary to consider whether some Q components must be identified in interest spread parts as well. The Eurostat proposal would produce inconsistency, unless financial vehicles and institutional units are minutely classified to make risk premium elements (%) equalised for each category.

The second point is the problem of the price index to be selected as an inflator. The EU proposal seems to recommend absorption deflator. In the trial calculation made in Japan, GDP deflator was adopted.<sup>35</sup> In order to use a same-period GDP or absorption deflator as an inflator, it needs ingenuity. For example, the deflator in question must be calculated by removing FISIM, and the real value of FISIM must be calculated by using the deflator. Then, GDP deflator and real GDP value will be obtained by using a nominal FISIM value and the real FISIM value. This method was adopted in the Japanese calculation. In theory, however, this iteration process must be continued until it converges.

A more fundamental problem is that a price index is not something that can be defined freely from the activity of an entity; it's not like "the purchasing power of money." Therefore, it is necessary to examine if the deflator for the entity providing funds and the deflator for the entity borrowing the funds are the same. One way of thinking is that the determination of the deflator for the entity providing funds would depend on what purpose the fund will be used for. Therefore, the appropriate deflator may be CPI, investment good deflator, or some others. Viewed in this light, the absorption deflation proposed by the EU may make sense. However, the situation of the entity borrowing funds – in an ordinary case, producers – is different. Since producers convert input into output, they have different prices on the input and output sides. This characteristic must be taken into account. The appropriate option in this case may be value-added deflator (GDP deflator, if aggregated) or operating surplus deflator.

Lastly, the author would like to add one more point in question. It is a problem of linkage with ordinary price indices. As already made clear, financial institutions like banks often offer services for which no explicit charges are made. Recently, banks' move to charge for such services (expansion of explicit charges for ATM use) has been a talk of the town. The question is if such services had really been free. Recognition that this is not the case should be the starting point of discussions.

One way of thinking is that people choose to secure liquidity by keeping deposit

---

<sup>35</sup> See previously-mentioned Ounuki and Yamaguchi paper and Yamaguchi paper.

outstanding at banks, giving up opportunity costs even though they can earn higher interest (or other property income). Incorporating prices with no explicit charges into indexes like CSPI or CPI is worth careful consideration, in particular when the entities covered by the indices are likely to react to opportunity costs (user costs) severely.

When doing so, it should be fully kept in mind that paid services and (apparently) free services are provided in continuity by financial institutions. The author's proposal is that the opportunity costs plus the explicit charges concerning a typical (model) use of bank accounts should be considered as the specified services banks provide. The "spec" needed might be based on such factors as the frequency of using an account, the days of the week and the time zones of the withdrawals, the frequency of automatic withdrawals from the account, and the frequency and sum of money transfers, and so on.

### **A proposal**

To conclude, the author proposes an alternative method of the allocation of FISIM. Because the method of the allocation using reference rate proposed by the Eurostat, not to mention that in 93SNA, is fraught with problems both in terms of principle and measurements. It should not be introduced into national accounts statistics (and balance of payments statistics) at least at this stage.

Since his 1977 paper (referred to in footnote 29), the author's first priority is to measure FISIM from the cost side. However, in the cost approach as well as the convention followed in the 68SNA, the *allocation* of the FISIM is not feasible. Although at least part of FISIM should be treated as "public goods," the author admits that it may be reasonable, up to a point, to allocate services rendered to depositors by taking opportunity costs (user costs) into account *carefully*.

The first part of the author's proposal may be as follows:

1) Services to depositors (lenders) should be measured in a somewhat similar way as proposed by Eurostat, while taking opportunity costs (user costs) and risk premium elements involved into account. In the case of producers being depositors, there is not choice but to use an ad-hoc method, such as allocation in accordance with deposit balances by industry.

It is highly important to *take opportunity costs into account* because of several reasons. First, the supposition of the unique interest rate, which is the logical consequence of the EU method, is judged to be extremely harmful not only to national accounts statistics but also to economic statistics as a whole. In fact, it means the

replacement of actual interest flows with the fictional interest flows as far as the financial intermediaries for which FISIM is estimated are involved in the flows. Second, the final expenditure imputed as a consequence of applying the uniform interest rate called “reference rate” may cause some disturbance to the government’s judgment about the performance of the economy because it may change the intermediate-final division of the FISIM simply due to the change of financial policy.

Imputation on the income side is also necessary. But the uniform interest rate should not be used for that purpose. As a consequence, the economy has multiple interest rates instead of the unique reference rate. Although the rates still have service elements in them, the overestimation of imputed income and final expenditure due to the use of the reference rate may be avoided to a certain extent.

2) As to private financial intermediaries’ residual services, they should be measured by deducting the above services to depositors from the measures of the global FISIM of the 68SNA system.<sup>36</sup> This takes into account the complicated nature of services to borrowers as already noted. The FISIM in question should be treated as purchase by the nominal industry unit as in the 68SNA (as intermediate consumption of the producers).

3) As to central banks and other publicly controlled banks, their output should be measured by their costs, as they are the tools to implement public policies. The output should be assumed to be consumed by special units as final items.<sup>37</sup>

With regard to the constant measures of the FISIM, he proposes as follows:

4) A new type of banking services price indices should be constructed with the use of a “model” approach, in which a typical use of bank account is specified as outlined in the previous section. The price indices reflect the opportunity costs as well as the explicit charges. If the explicit charges part can be eliminated from the indices, they may be used to estimate a FISIM deflator for 1) above. The method recommended by the EU proposal may be used if the above method is not feasible for some reasons if the difference between the reference rate and deposit rate is replaced with the user costs.

On the other hand, for 2) and 3), the use of cost approach may be recommended. That is, FISIM at constant prices should be measured by building up costs, while taking into account a change in productivity (in the same method as proposed for government services at constant prices in 93SNA). The constant price measure for 2) will be obtained by deducting constant price measure for 1) from constant cost side measure for

---

<sup>36</sup> Instead of global FISIM of 68SNA, some extended measure suitably designed as well as the cost measure may be applicable here.

<sup>37</sup> Or intermediate items.

1) and 2) combined.

*This paper was originally a report put forward to the Subcommittee for FISIM, Advisory Committee for National Accounts, Cabinet Office of Japan on September 13, 2004. The Cabinet Office made an English translation for the ESRI meeting on the JSNA, March 24, 2005 with some correction and amendment by the author. The author made further amendments for the publication of it in National Accounts Quarterly No132, 2006. The present version is almost the same as the published version except for some corrections.*