

# A Note on FISIM

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## Introduction

Imputation is one of the typical practices for national accountants needing to show the working of an economy in an accounting framework within which, in principle, every entry needs to be valued. For example, when they find an activity productive in the light of their system's production boundary (say, that of System of National Accounts 2008<sup>1</sup>) but they cannot find any straightforward valuation for the activity in question because of lack of observation of an actual and appropriate transaction value for it, they must place or estimate some value on it. This kind of processes is called "imputation."

One important observation was made in paragraph 1.38 in the SNA 2008:

Such estimates and imputations should not be interpreted as introducing hypothetical activities or flows of goods and services into the SNA. Their purpose is the opposite, namely, to capture in the accounts major flows of goods and services actually taking place in the economy that would otherwise be omitted. In order to obtain comprehensive measures, values have to be estimated for all outputs of goods and services that are not sold but disposed of in other ways.

Examples may include imputation for banking, housing as well as non-market productive activities including government services. Among these examples, the present paper deals with banking imputation in particular.

In national accounting practices, banks and other similar financial intermediaries are regarded as conducting productive activities other than services rendered explicitly through monetary transactions. In fact, the latter may account for just a fraction of their production. It should be noted in the first place that although interest receivable is compensation for lending money to other units, lending money itself is NOT productive in national accounts. So, the treatment of banking and other financial intermediaries' output in national accounts is one of the longstanding issues for generations of national accountants. Various methods of banking imputation have been proposed and implemented so far.

The present paper deals with the current situations surrounding banking imputation in national accounts, the newest name of which is FISIM (financial intermediary services indirectly measured). In fact, it is not only a new name but also a newly proposed treatment which purportedly improves the previous treatments of banking outputs. The main aim of this paper is to reconsider the claim. In the author's view, Japan's experiences quite clearly exemplified the inadequacy of the FISIM approach to measuring banking outputs. Thus, seemingly because of the atypical kinds of financial policies she has adopted around 2000 or

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<sup>1</sup> The full text of *System of National Accounts 2008* will be found in the website of the United Nations Statistical Commission(UNSC), <http://unstats.un.org/unsd/nationalaccount/sna2008.asp>, the printed version of which is also available as Commission of the European Communities et al. [2010].

later to turn back the further downturn of the economy (or to fight deflation), including quantitative easing as well as the zero interest rate policy, the FISIM approach to measuring banking outputs resulted in yielding an anomalous picture of the functioning of financial intermediaries in Japan's economy. In the picture, the banking output peaked at around 2000-2004, which most authors regard as the bottom of the financial intermediation function of Japan's banks and other similar financial intermediaries in her private sector.

This paper is organised as follows: to begin with, two approaches to banking imputation that appeared in the SNA before the introduction of FISIM will be reviewed. In the next section, the FISIM approach will be described mainly as it appeared in the SNA 2008 (rather than in the SNA 1993) and some criticisms made against it so far (including the author's) will be discussed. Finally, the trial estimates of FISIM conducted by the government of Japan will be examined and it will be claimed that they are considered to be quite misleading.

## **Banking imputation before the introduction of FISIM**

In this section, some banking imputation methods and measures before the introduction of FISIM approach will be described. Naturally, the focus is on those in the successive Systems of National Accounts (SNA) because they are widely recognised as established international statistical standards.

Despite their varieties, most known methods for measuring banking output use some kind of interest spreads. In the SNA 1953<sup>2</sup>, the first international statistical standard recommended by the United Nations, it was assumed that banks (and similar financial intermediaries) produce services to depositors and their measure (namely, imputed banking services) may be the difference between the property incomes receivable and the deposit interest payable. If for the sake of simplicity, the deposit balance and the loan balance are set to be equal, the difference between the two rates plays the role of "price" and the balance plays the role of "quantity" so to speak. It was assumed that the depositors were entitled to acquire the whole interest flows the banks receive for lending the funds to the borrowers (imputed interest in addition to actual deposit interest) and they are obliged to return part of them (imputed interest) to the banks for the services received on their deposit. If the depositor is a consumer, banks' service outputs may be deemed to be included in final consumption expenditures, while they may be considered to be included in intermediate consumption if they are rendered to enterprises. One consequence may be that GDP will be affected because of this treatment to the extent that the services are for the final users.

On the other hand, in the SNA 1968<sup>3</sup>, which is the first major revision to the SNA 1953, it was considered that banking imputation should not affect the total GDP measure, so as not to cause any disturbance to judgement about the state of the economy<sup>4</sup>. Thus, although the measure of banks' outputs were the same as that of the SNA 1953, the outputs imputed for banks and other similar financial intermediaries (imputed banking services) were regarded as constituting intermediate consumption (of the nominal industry, not individual industries) rather than final expenditures. Imputed interest ceased to exist. This treatment is still being used in official national accounts statistics in some countries including Japan because it was

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<sup>2</sup> United Nations [1953].

<sup>3</sup> United Nations [1968].

<sup>4</sup> In fact, a draft version did not include any kind of banking imputation.

permissible in the SNA 1993 to continue the use of the treatment in the previous SNA. However, it was not so satisfactory to some countries which are small but have internationally active financial sectors<sup>5</sup>. Because, their GDP's were, it was claimed, vastly underestimated by this method.

## **FISIM and criticism**

It was in this context that in the SNA 1993<sup>6</sup>, a new method of banking imputation based on a newly introduced concept of the *reference rate of interest*, in which banks' outputs can be final as well as intermediate. It was presumed that the reference rate of interest should be *the* pure cost of borrowing funds without any risk premium element or service charges involved. As a practical recommendation, the inter-bank rate or the central bank lending rate may be used as proxies for the reference rate.

More concretely, banks' services for borrowers may be measured by using the difference between the lending rate and the reference rate, while their services for depositors may be measured by using the difference between the reference rate and the deposit rate. The balances relevant in the calculation should be loans balance on the lending side and deposit balance on the funding side.

An implication of the new treatment may be that it can make it possible to measure banks' services to each customer individually so that FISIM can be *allocated* to customer groups including foreign customers as well as domestic industries or institutional sectors. Though it was originally thought that by aggregating the allocated FISIM measures for all users, you could get the old banking imputation measure (called global FISIM in the recent terminology). But it has proved to be not the case. After the publication of the SNA 2008, Allocated FISIM (or Total FISIM when aggregated) only came to be permissible.

It should be noted that as a logical consequence of the use of the reference rate of interest, loans extended by using banks' own funds rather than deposits came to be included in the calculation of FISIM in the SNA 2008. In the earlier SNA's, they were excluded in principle because it was financial intermediary functions only that were considered to be covered by the concept of FISIM.

In the author's view, there are two ways of interpreting the FISIM measure of banking outputs. One is to look at banks as a margin industry like wholesale and retail trade. Thus, their activities are seen as if they "purchase" funds from the market at the reference rate and "sell" them to borrowers. Another interpretation may be called the user cost view. Thus, suppose a borrower could get funding either from a bank or from the capital market by issuing a bond and borrowing rate is 1% higher than the bond rate. In spite of this, suppose the borrower chooses to borrow from the bank. In this case, the user cost (opportunity cost) involved is said to be 1%. In this view, if the bond rate equals to the reference rate, the user cost may be interpreted as the price for the banking services rendered. While the "margin industry" view is a supply side interpretation, the "user cost" view explains the demand side.

The rest of the section is devoted to criticisms. Criticisms abound. First of all, it should be questioned whether the unique, pure rate of interest exists in the real world, which is definitely NOT a theoretical model. In fact, some difficulties have been encountered with defining the unique reference rate meaningfully and adequately both for domestic borrowers and foreign borrowers so that in the SNA 2008, an ad hoc treatment is introduced that allows the existence of multiple reference rates with respect to export/import of FISIM.

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<sup>5</sup> See Als [1988].

<sup>6</sup> Commission of the European Communities et al. [1993].

A related point may be meaningless minus FISIM figures reported in implementing the proposed method. For, although the rate should lie between the lending rate and the deposit rate, national accountants came to notice it is not the case sometimes.

Anomalous figures were reported for central banks' outputs<sup>7</sup> as well. With respect to the last point, a separate treatment for central banks was introduced in the SNA 2008 to avoid the anomaly. Thus, in the new treatment, central banks may be treated like governments.

The author<sup>8</sup> and Wang and others<sup>9</sup> reached the same conclusion by the early 2000's that there are further inadequacies concerning how to treat risk premium elements involved with the current FISIM approach. The author indicated that there is some inconsistency involved with the treatment of assuming risk in national accounts between that of insurance activities on the one hand and that of banking on the other. In the treatment of insurance, the monetary flows that cover risk elements (net insurance premium) are regarded as transfer while, as is understandable from the above description, assumption of risk by banks and other financial intermediaries covered is considered to be productive.

On the other hand, Wang and others constructed a CCAPM-type theoretical model and found you should exclude the risk premiums from the present measures of FISIM.

Another criticism is due to the author<sup>10</sup> and relates to the above-mentioned user cost view on FISIM. On the deposit side, this view seems to work quite well if the government bond rate is selected as the reference rate. Even if this is not the case, it may be regarded as an approximation.

However, on the lending side, borrowers may not necessarily have such alternative opportunities in general. Some borrowers have no choice but to borrow from banks (or non-bank institutions). In other words, they can only draw on indirect financing. If this is the case, the interpretation of FISIM measures on the lending side as services rendered to the borrowers by banks does not work out.

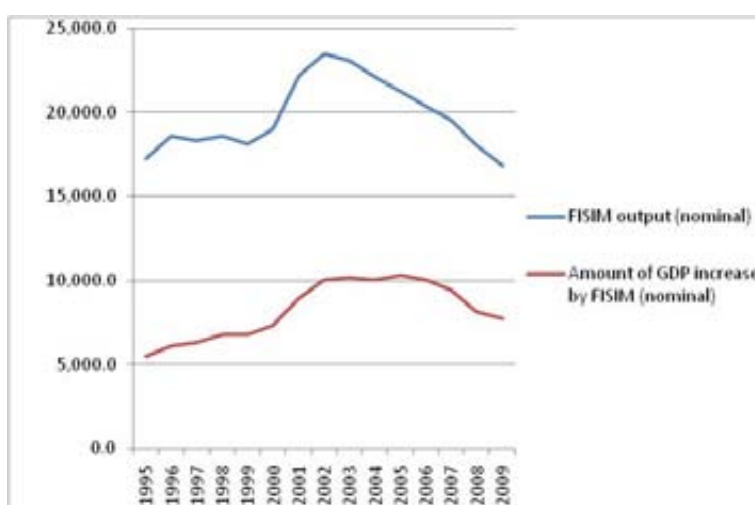


Figure 1 FISIM Estimates in Japan

(nominal, billion yen)

Source: Cabinet Office website

## Japan's experiences

In Figures 1 and 2 trial estimates compiled by the ESRI, the Cabinet Office, the Government of Japan are shown. The estimation is conducted in line with the Eurostat's method of measuring FISIM. <sup>11</sup>Figure 1 shows FISIM output and its influence on the GDP total, while Figure 2 is the real version of Figure 1.

<sup>7</sup> In the SNA 1993, the FISIM calculation procedure did not exclude central banks' activities. Therefore, central banks produce FISIM as well.

<sup>8</sup> Sakuma [2006].

<sup>9</sup> Wang [2003] and Wang et al. [2004].

<sup>10</sup> Sakuma [2009].

<sup>11</sup> See the website of the Economic and Social Research Institute (ESRI), the Cabinet Office, the Government of Japan about details of the estimation.

Strangely enough, Figure 1 seems to suggest that the very severe period of Japan's economy was the period when financial intermediaries were very active *or* their activities were valued very highly.

It is true that the expansion of interest-rate spread took place during the problem period.<sup>12</sup> Many authors believe that it was because the central bank tried to bail out commercial banks in crisis not overtly through transfer payments but implicitly through interest rate manipulation.

It is well known that Japan adopted unconventional financial policies such as the zero interest rate policy (ZIRP) and quantitative easing (QE) during 1999-2006. See Table 1 below.

Ito [2011, p.67] gave a definition of QE in a broad sense as an expansion of the central bank balance sheet by purchasing risk assets that the central bank normally would not buy although some authors define it more narrowly as excess reserve targeting, that is, the policy in which it has a target for the current account balances of commercial banks at the central bank.<sup>13</sup> At any rate, by adopting these policy schemes, the inter-bank rate becomes nearly zero.

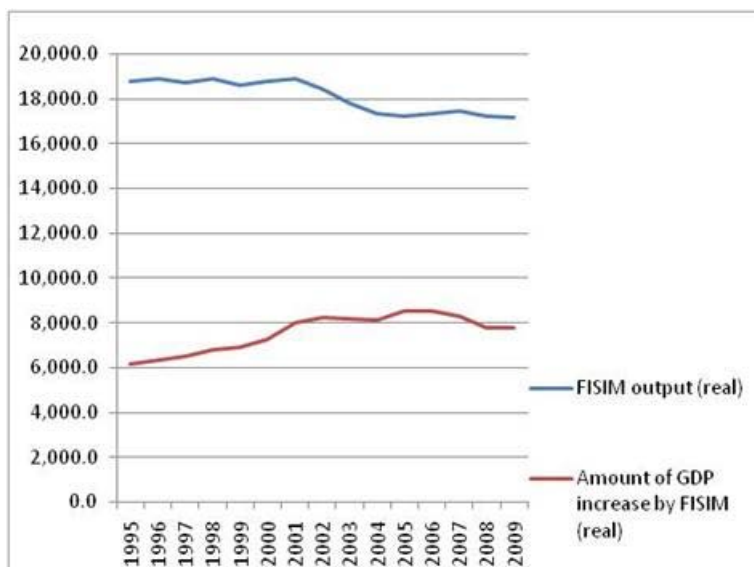


Figure 2 FISIM Estimation in Japan

(real, billion yen)  
Source: Cabinet Office website

**Table 1 Zero Interest Rate Policy and Quantitative Easing in Japan: Chronology**

1999 February	Adopt the Zero Interest Rate Policy (ZIRP).
2000 August	Lift ZIRP.
2001 March	Return to ZIRP with Quantitative Easing.
2006 March	Lift QE.
2006 July	Lift ZIRP.

It should be recognised that as noted above, the inter-bank rate, a typical choice for the reference rate, is not accessible by many borrowers in reality. Therefore, FISIM measures grasp gains from accessibility to the reference rate of interest (the inter-bank rates as well as the central bank lending rate) by commercial banks as their output. Thus, the measure gives the impression that the performance of financial intermediaries in Japan is highly effective in the very period, that is, 2002-2004.

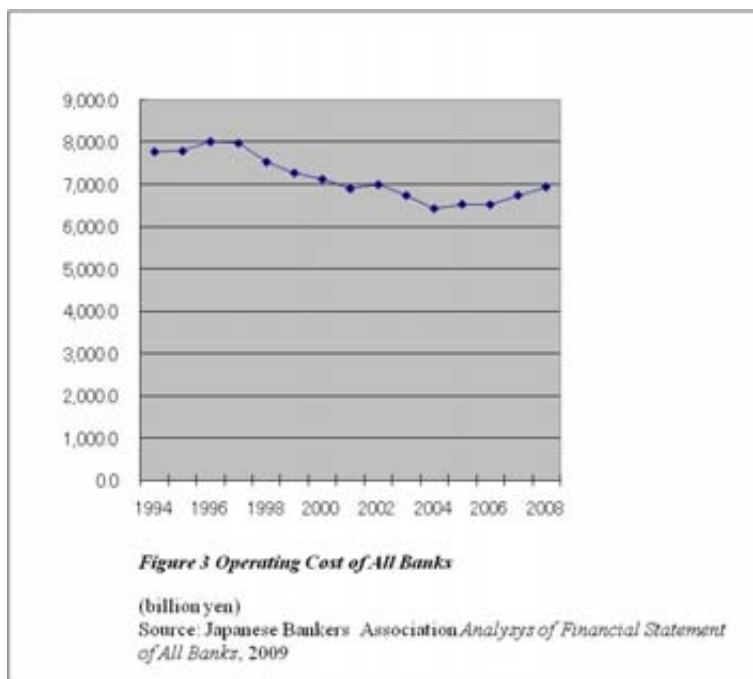


Figure 3 Operating Cost of All Banks

(billion yen)  
Source: Japanese Bankers Association Analysis of Financial Statement of All Banks, 2009

<sup>12</sup> See, for example, Iwata [2000], p.81.

<sup>13</sup> Tanaka [2008], for example.

By looking at Figure 3 in which operating cost of all banks in Japan is shown, you can understand banks' activity level were low then because the cost measure anyhow reflects all types of productive activities conducted by banks unless there was not tremendous productivity growth.

Finally, a few words about the real FISIM measures may be in order. As is explained clearly in Akritidas [2007], the real FISIM in the method proposed by the Eurostat is simply a stock measure. It is just for this reason why the movement of real FISIM is quite stable. It is questionable whether you can get a grasp of financial intermediation activities by using such a stock measure though it may be convenient for statistical offices to incorporate stable real FISIM into real GDP.

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