Discussant comments on session IPM83: Measures of output and prices of financial services

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General conceptual issues concerning the measurement of FISIM

The organisers of this ISI conference deserve praise for selecting the topic of measuring the output and prices of financial services as the subject of an invited paper session. Undeniably, financial services play a crucial role in all economies today and, concomitantly, their contribution to domestic output and employment is substantial, and growing, in almost all countries. At the same time, the measurement of their output and prices is fraught with conceptual and practical difficulties. Even worse is the fact that the current international standards, in particular the 1993 System of National Accounts (SNA), may provide somewhat misleading guidance, which in turn can lead to outcomes that are not only incorrect, but are also non-comparable over time and across countries. The papers presented in this session richly illustrate these issues and, therefore, the continued need to reflect upon their solution in the revised SNA that is being prepared.

The core issue is well known: Since financial intermediaries often do not charge directly for their services, and because their remuneration for those services is combined with their receipts and payments for property income (as well as with the acquisition and disposal of financial assets and liabilities, and with insurance and pension premiums and benefits), it is not a simple matter to derive the output and price of their services from the available data. Since all papers in this session deal with Financial Intermediation Services Indirectly Measured (FISIM), this contribution will also focus on the implicitly charged output of commercial banks.

In comparison with the 1968 SNA, which recommended computing FISIM as the difference between interest receivable and payable, the 1993 SNA defines it as "… *the total property income receivable by financial intermediaries minus their total interest payable, excluding the value of any property income receivable from the investment of their own funds*." However, this definition ignores the fact that interest receivable on bank loans consists of three elements: (1) a receipt for the "consumption foregone" (the risk-free interest, which should include compensation for expected inflation); (2) a receipt for the risks incurred by the lender (both borrowers' credit risks and specific market-related risks); and (3) a receipt for the services provided by the banks (eg checking the creditworthiness of the borrower). Similarly, interest payable on bank deposits equals (1) the risk-free interest, plus (2) a payment for the risk incurred by the depositor (which may be zero if the deposit is insured), minus (3) a receipt for the services provided by the banks (eg safe storage of the deposit, and enabling money transfers and withdrawals). Remuneration for the risk incurred should not be included in the financial intermediation output, since it is part of the user costs of the funds.[2]

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[2] By contrast, the 1993 SNA states: "The reference rate to be used 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 Advisory Expert Group on the review of the SNA has broadly confirmed this definition.

In fact, a recent prominent development in banking has been the rise of the so-called "originate and distribute" business model, at least for large global banks, in which (collateralised) loans are packaged, and asset-backed securities are issued to transfer the credit risk to the purchasers of those securities. In addition, a whole range of other credit risk transfer instruments, such as credit default swaps, has mushroomed. In all of these cases, the risk is transferred to the end-investors, who also reap the remuneration for it (which may sometimes be negative). Alternatively, (large, corporate) borrowers can decide to issue debt securities directly, for which they pay the risk-free interest rate plus a risk premium, but not for the kind of financial intermediation services they use when incurring a loan. Similarly, potential depositors can decide to instead invest their money in debt securities, eg money market funds, and to receive the risk-free interest plus a risk premium, in which case it is not reduced by remuneration for the FISIM linked to a bank account.

When applying the 1993 SNA definition, the remuneration for risk is correctly excluded only if the banks' receipts for the risks incurred on their loans equal their payments for the risks incurred by their depositors. This is unlikely to be the case in practice. In fact, the former tend to be (much) higher than the latter, which implies that the FISIM measurement method advocated by the 1993 SNA (greatly) overestimates bank output. Moreover, in various circumstances it leads to all kinds of implausible and non-comparable outcomes, as is also illustrated in the papers presented in this session.

In conclusion, to arrive at a correct estimate of the financial intermediation services output, it is not only the risk-free interest income that must be subtracted from the property income on each category of loans and deposits, but also the remuneration for the risk incurred.[3] Since this risk may vary over time, across countries and by category of loan (and, to a lesser extent, by category of deposit), the bank output must be estimated (and allocated) separately for these categories.[4] As a by-product, this approach would also solve the problem of negative FISIM that frequently arises when a single (short-term intra-bank business) reference rate is used for all categories of deposits, as well as for all categories of loans (of the same currency), which may in fact have a quite different (average) maturity structure.

Taking the above observations as a point of reference, we now turn to a review of the papers for this session.

Dennis Fixler, Marshall Reinsdorf and George Smith: "What can we learn from the new measures of bank services in the national accounts? The case of the US"

This paper starts out with an exposition of the conceptual framework, and then illustrates the quantitative impact of introducing the reference rate approach in the US, including the evolving role of banks in the economy.

The conceptual framework is based on a theory of the user cost of money. Interestingly, an extended version of the paper contains a discussion on the treatment of how the assumption of risk is compensated, and concludes: "A treatment of risk premiums paid on business loans

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[3] Refer also to Wang (2003) and Basu, Inklaar and Wang (2003) for further theoretical and practical considerations on this issue. In Europe, the German statistical office (DESTATIS) recently proposed a similar approach.

[4] A specific complication concerning the allocation of FISIM is that only institutional units can incur loans and hold deposits. This implies that any allocation to industries, and even demand categories, is rather arbitrary (cf. Keuning, 1990).

as distributions of income to banks has some theoretical advantages. […] For consumer loans, however, such a treatment would result in reductions to personal income, national income and GDP that would be hard to explain. Furthermore, estimation of risk-premium components would be impractical for national economic accounts, because they are subject to stringent constraints of timeliness and replicability. Also, inclusion of risk premiums in the reference rates for measuring depositor services could cause an unwelcome increase in the contribution of imputed depositor services to the volatility of US GDP. [...] In any case, any risk premium component of net interest categorized as income absorbed by banks cannot be too large, or the measure of the banking industry's net operating surplus would become implausibly small."

It may, however, be possible to raise some counterarguments. First, the current approach, which excludes the imputed service charge on consumer loans from household interest payments – treating them as part of household disposable income (and as consumption expenditure) – is difficult to explain to frequent users of national accounts, let alone to the average citizen. Indebted households will not view this service charge as part of their disposable income and, in fact, once they have incurred the loan, they are not free to spend it otherwise. A conceptually preferable reduction of the FISIM on consumer loans, by eliminating the risk premium element, may thus reduce this communication problem.

Secondly, estimation of risk components could indeed be data intensive, but not unfeasible, in view of the timeliness and level of detail of financial statistics collected by central banks around the world. Besides, DESTATIS has suggested a quite straightforward method that estimates the average "financial intermediation service price" as the (absolute value of the) difference between a risk-free (or nearly risk-free) market interest rate on loans or deposits, and the EURIBOR (Euro Interbank Offered Rate). The FISIM would then be calculated as the product of the estimated service price and the outstanding stocks. If applied by all EU member states, this method would at least significantly enhance the comparability of the estimates for this economic activity. At the same time, this method presupposes that the service provided is unrelated to the type of loan or deposit. Potential refinements may include:

- A maturity correction in the computation of the "financial intermediation service price."
- For loans, matching the risk profile of the loans on banks' balance sheets with a security portfolio with a similar risk profile, and comparing the weighted average yield of this security portfolio with the average interest rate on the loan portfolio.
- For deposits, an evaluation of the effect of depositors' insurance schemes.

The estimates that result from this approach can also be subject to some uncertainty, but they would be more accurate than the current ones. Once greater experience has been gained with its implementation, further guidance may be provided to national accounts compilers in a Handbook.

Thirdly, in many countries, the risk premium embedded in deposit interest rates is probably close to zero, in view of the availability of a deposit insurance scheme and the small likelihood that a bank would fail (and that the government would not compensate the depositors). From that perspective, therefore, the impact of shifting to the alternative approach on GDP volatility may be very minor. On the other hand, the risk premiums on loans can be quite substantial, so that the overall impact of the alternative approach to GDP may indeed be non-negligible, and may in fact vary over time (if banks do not adjust their loan portfolios to changing circumstances).

Another conceptual issue raised by the authors concerns the scope of the assets and liabilities to be covered, and they prefer to "... include all bank assets and liabilities that earn interest in our calculations of implicitly priced output." This may indeed make sense, although this approach may be restricted to financial intermediaries (excluding central banks and

insurance corporations and pension funds).[5] Moreover, it remains to be seen whether, in the case of bonds, any FISIM remains if the risk premium is excluded.

The authors' discussion of the empirical implications of their approach is quite interesting. Of particular note is their observation that, over the business cycle, explicitly charged bank borrowing services usher in changes in GDP – a circumstance that may be relevant to policy and to users of the national accounts.

Triono Widodo: "Measure of output and prices of financial services (banking)"

This paper deals with a number of important issues. It describes the Indonesian experience with measuring the output of financial services in general and of FISIM in particular, and elaborates on the estimation of property income receivable from the investment of own funds. It also notes some implausible outcomes in the event that interest received by banks falls short of interest paid, or if the total size of the loans is much lower than that of the deposits. In addition, it touches upon the issue of whether or not the Central Bank also produces FISIM. It concludes: "…the most critical factor in calculating the banking sector gross value added is how to determine the value of the reference interest rate."

The conversion of a significant portion of commercial bank assets from loans into government bonds and Central Bank certificates at the time of the financial bailout in Indonesia in 1998 caused the interest receivable to be lower than interest payable, although much of the interest previously recorded as receivable might never have actually been received. According to the SNA method, this resulted in a negative estimate for value added, which is another illustration of the fact that, for financial intermediaries, an asset and liability concept broader than just loans and deposits may be needed to generate plausible estimates. In addition, accounting for the risk concept outlined above could have revealed that, even before the crisis, the bank output and value added were not as high as had been estimated, because a correct reference rate would have had to include a high risk premium for a significant part of the loan portfolio.

Puntharik Supaarmorakul: "Estimation of financial intermediation services indirectly measured (FISIM) – Thailand's case"

This paper offers a comprehensive overview of the main issues relating to implementation of the 1993 SNA method, such as the selection of the FISIM-producing sectors and the FISIM-generating financial instruments. Again, it is proposed that the latter encompass bonds and notes. The author also discusses the choice of appropriate reference rates and the type of interest rates that should be used for the computation of interest flows.

The paper also devotes considerable attention to the computation of FISIM at constant prices, based either on the use of a general price index such as the GDP deflator, or the use of separate deflators (GDP deflator, CPI, PPI) for various loans and deposits. This is generally consistent with the 1993 SNA guidelines. However, the question arises as to whether the resulting volume index correctly reflects the change in FISIM output volume.

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[5] The Advisory Expert Group on the SNA revision has agreed to restrict FISIM to deposits and loans, by convention. At the same time, it would not be appropriate to compute FISIM on bonds held by other sub-sectors, as this would not be related to financial intermediation services.

Instead, a direct volume change measurement, based on the development in the quantity and the quality of the services provided (numbers, values and risk profiles of loans; numbers of deposit and savings accounts, and of the implicitly priced services associated with them, etc.) appears to be a more conceptually sound approach, though various implementation issues remain to be settled.

The author ends with a list of concerns, including the timeliness of the source data used in compiling quarterly estimates, the distinction between funds provided by depositors and "own" funds, and the choice of the reference rates for estimating international trade in FISIM. Again, the empirical results show the substantial impact that the choice of reference rates has on results. All of this demonstrates the need for appropriate international standards. In this regard, concrete guidance may also be expected from the future revised European System of Accounts. Because this Handbook is a legal act and has various important administrative uses in Europe, it will be quite precise and detailed.

Kil-Hyo Ahn: "Practical issues on the calculation and allocation of FISIM in Korea"

This is a well-written paper and provides a good analysis of the Korean methodology for estimating FISIM, in light of the characteristics of the domestic financial system. The methodology applied by the Bank of Korea is broadly in line with the 1993 SNA. Its main peculiarities relate to the inclusion of bonds among the FISIM-generating financial instruments and the inclusion of financial auxiliaries among the FISIM-producing sub-sectors, in addition to banks and other financial intermediaries. These choices are said to better reflect the Korean financial system, in which bonds are viewed as close substitutes for loans and deposits, and in which financial auxiliaries usually accept deposits and provide loans to their customers.

In particular, FISIM is computed for each of the three FISIM-producing sub-sectors according to separate reference rates, calculated as average rates on deposits and loans of the particular sub-sector, and then aggregated. The allocation of FISIM by institutional sector is based on the quarterly flow of funds tables. Some improvements are envisaged in the allocation by industry, which is hindered by a lack of underlying data. Interestingly, if the interbank rate had been selected as a reference rate, the application of the current methodology would have led to a permanently negative FISIM, because the average deposit rates of banks consistently exceeded the interbank rate in Korea.

The application of several reference rates, to reflect various segments of the market facing different risks, partially addresses the criticism expressed above, and could in fact be further elaborated. For instance, as a first step, it may be worthwhile to contemplate the use of different reference rates for deposits, loans and securities.

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