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CHAPTER 14
FINANCIAL INTERMEDIATION SERVICES
INDIRECTLY MEASURED (FISIM)

**THE CONCEPT OF FISIM AND THE IMPACT OF THEIR USER ALLOCATION ON
MAIN AGGREGATES**

14.01 One traditional way in which financial services are provided is by means of financial intermediation. This is the process whereby a financial institution such as a bank accepts deposits from units wishing to receive interest on funds, and lends them to units whose own funds are insufficient to meet their needs. The bank thus provides a mechanism to allow the first unit to lend to the second. The unit lending funds accepts a rate of interest lower than that paid by the borrower. A 'reference rate' of interest is the rate at which both lender and borrower would be happy to strike a deal. The difference between the reference rate and the rate actually paid to depositors and charged to borrowers is a financial intermediation service charge indirectly measured (FISIM). The total FISIM is the sum of the two implicit fees paid by the borrower and the lender.

14.02 However, it is seldom the case that the amount of funds lent by a financial institution exactly matches the amount deposited with them. Some money may have been deposited but not yet loaned; some loans may be financed by the bank's own funds and not from borrowed funds. However, the depositor of funds receives the same amount of interest and intermediation service whether or not his funds are lent, and the borrower pays the same rate of interest and receives the same intermediation service whether his funds are provided by intermediated funds or the bank's own funds. For this reason FISIM are estimated for all loans and deposits offered by a financial institution irrespective of the source of the funds. The amounts of interest recorded are calculated as the reference rate times the level of loan or deposit in question. The difference between those amounts and the amounts actually received by or paid to the financial institution are recorded as the indirect service charges paid by the borrower or depositor to the financial institution. The amounts recorded in the system as interest are described as 'ESA interest' and the total amounts actually paid to or by the financial institution are described as 'bank interest'. The total implicit service charge is the sum of the bank interest on loans less the ESA interest on the same loans plus the ESA interest on deposits less the bank interest on the same deposits.

14.03 FISIM apply only to loans and deposits provided by, or deposited with, financial institutions. The financial institutions in question need not be resident; nor need the clients of the financial institution be resident. Imports and exports of FISIM occur. The financial institution need not offer deposit-taking facilities as well as making loans. The financial subsidiaries of retailers are examples of financial institutions that make loans without accepting deposits. A money lender who has sufficiently detailed accounts to be treated as a corporation or a quasi-corporation can receive FISIM.

14.04 To consider the impact of the allocation of FISIM on GDP and national income, as compared with the situation where FISIM would not be allocated, five cases have to be considered:

- (a) loans are provided and deposits are taken by resident financial intermediaries (FIs) for intermediate consumption of market producers (including households as owners of unincorporated enterprises and of dwellings):

the FISIM output of FIs is counterbalanced by the intermediate consumption of market producers. Therefore, there is no impact on GDP and national income;

- (b) loans are provided and deposits are taken by resident FIs for intermediate consumption of non-market producers and for final consumption of households:

when FISIM is consumed by non-market producers, as intermediate consumption, the output of such producers is increased by the same amount since intermediate consumption is a part of the sum of their costs and the counterpart flow is an increase of final consumption expenditure. Therefore, GDP and national income increase by the amount of allocated FISIM.

Also, when FISIM is consumed by households as final consumers, GDP and national income increase by the amount of allocated FISIM;

- (c) loans are provided and deposits are taken by resident FIs to non-resident non-FIs (exports of FISIM):

exports of FISIM are recorded, increasing GDP. But in the transition from GDP to national income, this increase is counterbalanced by a decrease of interest receivable less interest payable towards the rest of the world (as FISIM is deducted from interest receivable on loans and added to interest payable on deposits). Therefore, exports of FISIM do not impact national income;

- (d) loans are provided and deposits are taken by non-resident FIs for intermediate consumption of market producers, including households as owners of unincorporated enterprises and of dwellings (imports of FISIM):

GDP decreases by the amount of this category of imports of FISIM, as their counterpart is intermediate consumption. But in the transition from GDP to national income, this decrease is counterbalanced by an increase of interest receivable less payable towards the rest of the world (as FISIM are added to interest receivable on deposits and deducted from interest payable on loans). Therefore, this category of imports does not impact national income;

- (e) loans are provided and deposits are taken by non-resident FIs for intermediate consumption of non-market producers and for final consumption of households (imports of FISIM):

imports of FISIM by non-market producers correspond to intermediate consumption. The output of such producers is increased by the same amount since intermediate consumption is a part of the sum of their costs and the counterpart flow is an increase of final consumption expenditure. When measuring GDP from the production approach, the increase in intermediate consumption is matched by the rise of output, leaving value added unchanged. When measuring GDP from the expenditure side, the increase in final consumption expenditure is neutralised by the increase of imports of services. But in the transition from GDP to national income, there is an increase of interest receivable less payable towards the rest of the world (as FISIM is added to interest receivable on deposits and deducted from interest payable on loans). Therefore, national income increases by the amount of this category of imports of FISIM.

Also, when FISIM is imported by households as final consumers, there is no impact on GDP and national income increases as there is an increase of interest receivable less payable towards the rest of the world.

By convention, FISIM are not calculated for interbank loans and deposits between resident FIs, nor between resident FIs and non-resident FIs. But interbank loans and deposits are used to calculate reference rates.

14.05 From the five cases presented in paragraph 14.04, the impact of allocating FISIM on GDP and national income can be summarised in the following way:

- (a) GDP increases by the amount of FISIM produced by resident FIs and allocated to sectors S.13 (general government), S.14 (for households as consumers), S.15 (NPISHs) and S.2 (rest of the world);
- (b) GDP decreases by the amount of imported FISIM allocated to S.11 (non-financial corporations), S.12 (financial corporations) excluding S.121 (central bank), S.122 (deposit-taking corporations except the central bank) and S.125 (other financial intermediaries, except insurance corporations and pension funds), and S.14 (for households as owners of dwellings and unincorporated enterprises);
- (c) national income increases by the amount of FISIM (produced by resident FIs or imported) allocated to sectors S.13 (general government), S.14 (for households as consumers) and S.15 (NPISHs).

CALCULATION OF FISIM OUTPUT BY SECTORS S.122 AND S.125

14.06 FISIM are produced by FIs: the central bank (S.121); deposit-taking corporations except the central bank (S.122); and other financial intermediaries, except insurance corporations and pension funds (S.125).

FISIM calculations concentrate on subsectors S.122 and S.125; by convention, FISIM are not calculated for the central bank (see part VI).

Statistical data required

14.07 For each of the subsectors S.122 and S.125, data is needed in the form of a table of stocks of loans and deposits categorised by user sectors, and averaged over a four quarter period, and the corresponding accrued interest. The interest is calculated after reallocation of interest rate subsidies to the recipients.

Reference rates

14.08 In the balance sheets of financial intermediaries included in subsectors S.122 and S. 125, loans and deposits with resident units have to be broken down to differentiate between loans and deposits:

- which are interbank (i.e. within the institutional units providing FISIM included in subsectors S.122 and S.125),

- which are undertaken with the user institutional sectors (S.11 — other S.12 subsectors — S.13 — S.14 — S.15) (except with the central banks).

In addition, loans and deposits with the rest of the world (S.2) are broken down into loans and deposits with non-resident financial intermediaries and loans and deposits with other non-residents.

Internal reference rate

14.09 To obtain the FISIM output of the resident FIs by resident user institutional sector, the internal reference rate is calculated as the ratio of interest receivable on loans within and between subsectors S.122 and S.125 to stocks of loans within and between subsectors S.122 and S.125 as follows:

$$\frac{\text{interest receivable on loans within and between subsectors S.122 and S.125}}{\text{stock of loans within and between subsectors S.122 and S.125}}$$

In theory, the internal reference rate is the same when using deposits data rather than loans data. Due to data inconsistencies, the estimate from the deposits data will be different from the estimate from the loans data.

When the deposits data is more reliable, the internal reference rate should be calculated on interbank deposits as the ratio of:

$$\frac{\text{interest payable on deposits within and between subsectors S.122 and S.125}}{\text{stock of deposits within and between subsectors S.122 and S.125}}$$

If the loans and deposits data are equally reliable, the internal reference rate should be calculated on interbank loans and deposits as the ratio between interest receivable on loans incurred plus interest payable on deposits held between FIs, and the stock of loans plus the stock of deposits held by FIs on behalf of other FIs.

In cases where resident FIs, for their resident customers, provide loans and take deposits expressed in foreign currencies, several 'internal' reference rates by currencies or groups of currencies are to be calculated if this improves the estimates significantly. This would require splitting by currency or groups of currencies both the calculation of the 'internal' reference rates and the loans and deposits from resident FIs towards each resident user sector.

External reference rates

14.10 To determine FISIM imports and exports, the reference rate used is the average interbank rate weighted by the levels of stocks in the headings 'loans between resident FIs on the one hand, and non-resident FIs on the other hand' and 'deposits between resident FIs on the one hand, and non-resident FIs on the other hand', which are included in the balance sheet of the FIs. So the external reference rate is calculated as the ratio of interest on loans plus interest on deposits between resident FIs and non-resident FIs, to the stock of loans plus the stock of deposits between resident FIs and non-resident FIs.

Several external reference rates are to be calculated for different currencies or groups of currencies, if the data is available for each currency or group of currencies for the following categories, and if this improves the estimates significantly:

- (a) loans and deposits from non-resident FIs towards each user sector;
- (b) loans and deposits from resident FIs towards non-resident users.

Detailed breakdown of FISIM by institutional sector

14.11 By convention, no interbank FISIM have to be calculated between resident FIs, nor between resident FIs and non-resident FIs. FISIM are calculated in respect of non-bank user institutional sectors only.

For each institutional non-FI sector, it is necessary to have data according to the following table of loans and deposits granted by the resident FIs:

	Stocks	Interest receivable by resident FIs		Stocks	Interest payable by resident FIs
Loans granted by resident FIs (S.122 and S.125)			Deposits with resident FIs (S.122 and S.125)		

The total FISIM by institutional sector is obtained as the sum of FISIM on loans granted to the institutional sector and of FISIM on deposits of the institutional sector.

FISIM on the loans granted to the institutional sector is estimated as interest receivable on loans less (loan stocks multiplied by the internal reference rate).

FISIM on the deposits of the institutional sector is estimated as (deposit stocks multiplied by the internal reference rate) less interest payable on deposits.

Part of the output is exported; on the basis of the balance sheet of the FIs we observe:

	Stocks	Interest receivable by resident FIs		Stocks	Interest payable by resident FIs
Loans to non-resident non-banks			Deposits with non-resident non-banks		

Exports of FISIM are estimated using the external interbank reference rate, for loans granted to non-residents (excluding FIs), as interest receivable less (loan stock multiplied by the external reference rate).

Exports of FISIM on deposits of non-residents (excluding FIs) are estimated as (deposit stocks multiplied by the external reference rate) less interest payable.

Where several reference rates are used for different currencies or groups of currencies, the loans and deposits are split both by institutional user sectors and by the currencies (or groups of currencies) in which they are denominated.

Breakdown into intermediate and final consumption of FISIM allocated to households

14.12 FISIM attributable to households are broken down into the following categories:

- (a) intermediate consumption of households in their capacity as owners of dwellings;
- (b) intermediate consumption of households in their capacity as owners of unincorporated enterprises; and
- (c) final consumption of households.

The estimation method requires a breakdown of loans to households (stocks and interest) into the following corresponding categories:

- (i) dwelling loans;
- (ii) loans to households as owners of unincorporated enterprises; and
- (iii) other loans to households.

Loans to households as owners of unincorporated enterprises and dwelling loans are generally shown separately in the various breakdowns of lending in financial and monetary statistics. Other loans to households are obtained as a residual item by subtracting the two previously mentioned categories of loans from the total. FISIM for loans to households should be distributed amongst the three categories on the basis of information on stocks and interest for each of the three groups. Dwelling loans are not identical to mortgage loans, as mortgage loans can have other purposes.

Household deposits are broken down into:

- (1) deposits of households as owners of unincorporated enterprises; and
- (2) deposits of households as consumers.

In the absence of statistics on deposits of households as owners of unincorporated enterprises, stocks of deposits are calculated by one of the following methods:

Method 1

Stocks of deposits are calculated by assuming that the ratio of stocks of deposits to value added observed for the smallest size corporations applies for unincorporated enterprises.

Method 2

Stocks of deposits are calculated by assuming that the ratio of stocks of deposits to turnover observed for the smallest size corporations applies for unincorporated enterprises.

FISIM on the deposits of households must be distributed between FISIM on the deposits of households as owners of unincorporated enterprises and FISIM on the deposits of households as consumers on the basis of the average stocks of those two categories, for which, in the event of lack of further information, the same interest rate may be used.

As an alternative, where detailed information on loans and deposits of households is absent, FISIM to households are allocated to intermediate consumption and final consumption assuming that all loans are attributable to households as producer or as owners of dwellings and that all deposits are attributable to households as consumers.

CALCULATION OF IMPORTS OF FISIM

14.13 Non-resident FIs grant loans to residents and receive deposits from residents. Data according to the following table is needed for each institutional sector.

	Stocks	Interest receivable by non-resident FIs and payable by resident users		Stocks	Interest payable by non-resident FIs and receivable resident users
Loans granted by non-resident FIs			Deposits with non-resident FIs		

Imports of FISIM for each institutional sector are calculated as follows:

Imports of FISIM for loans are estimated as the interest receivable by non-resident FIs *less* (loan stocks *multiplied by* the external reference rate).

Imports of FISIM for deposits are estimated as (deposit stocks *multiplied by* the external reference rate) *less* the interest payable by non-resident FIs.

It is recommended that several external reference rates are used by currency or groups of currencies (see paragraph 14.10).

FISIM IN VOLUME TERMS

14.14 Volume estimates of FISIM are calculated using stocks of loans and deposits deflated to base period prices using a general price index such as the implicit price deflator for domestic final demand.

The price of FISIM has two components: the first is the difference between the bank rate of interest and the reference rate (or the reverse in the case of deposits) which represents the margin earned by the financial intermediary; the second is the price index used to deflate the stocks of loans and deposits to base period prices.

FISIM in volume terms are calculated as follows:

FISIM in volume on the loans granted to the institutional sector	$= \frac{\text{FISIM on the loans granted to the institutional sector}}{\text{price index}} \times \frac{\text{base period margin}}{\text{effective margin}}$
FISIM in volume on the deposits of the institutional sector	$= \frac{\text{FISIM on the deposits of the institutional sector}}{\text{price index}} \times \frac{\text{base period margin}}{\text{effective margin}}$

Base period margin on loans is *equal* to the effective interest rate on loans *less* the reference rate.

Base period margin on deposits is *equal* to the reference rate *less* the effective interest rate on deposits.

In nominal terms, the effective margin is equal to the ratio of FISIM to stocks, so replacing the effective margin by this expression in the two above formulas gives the following:

FISIM in volume on the loans granted to the institutional sector	$= \frac{\text{stocks of loans granted to the institutional sector}}{\text{price index}}$	\times base period margin
FISIM in volume on the deposits of the institutional sector	$= \frac{\text{stocks of deposits of the institutional sector}}{\text{price index}}$	\times base period margin

CALCULATION OF FISIM BY INDUSTRY

14.15 The allocation of FISIM among user industries is based on the stocks of loans and deposits of each industry and, if this information is not reliable, on the output of each industry.

THE OUTPUT OF THE CENTRAL BANK

14.16 The output of the central bank is, by convention, to be measured as the sum of costs, i.e. its intermediate consumption, compensation of employees, consumption of fixed capital and other taxes less subsidies on production. FISIM do not have to be calculated for the central bank.

Commissions and fees for directly measured services invoiced by the central bank both in respect of resident and non-resident units should be allocated to these units.

Only the part of the total central bank output (sum of costs less commissions and fees) which is not sold has to be, by convention, allocated to the intermediate consumption of other FIs — subsectors S.122 (deposit-taking corporations except the central bank) and S.125 (other financial intermediaries, except insurance corporations and pension funds) — in proportion to the respective value added of each of these subsectors.

To equilibrate the accounts of subsectors S.122 and S.125, the amount of their respective intermediate consumption of the service provided by the central bank is to be counterbalanced by a current transfer (classified under D.759 'other miscellaneous current transfers') received from the central bank, for the same amount.
