

**UN STATISTICAL COMMISSION and  
UN ECONOMIC COMMISSION FOR EUROPE**

**Working Paper No. 3  
March 2004**

**ENGLISH ONLY**

**CONFERENCE OF EUROPEAN STATISTICIANS**

Session on National Accounts for CIS Countries and  
other Transition Economies  
(Geneva, 27 April 2004)

**NON-PERFORMING LOANS, INTEREST ARREARS AND FISIM ESTIMATES**

Pablo Mandler, Aharon Blekh and Daniel Finzi,  
Central Bureau of Statistics, Israel.

## NON-PERFORMING LOANS, INTEREST ARREARS AND FISIM ESTIMATES<sup>1</sup>

This short paper analyses the relation between non-performing loans and interest arrears with the estimation in the national accounts of the Financial Intermediation Services Indirectly Measured (FISIM). It concludes that FISIM may be overvalued, which implies that also the output, value added and operating surplus of the financial intermediaries may be overvalued. This being the case, an adjustment to the estimated FISIM should be made. An illustration of such an adjustment is provided in an exercise based on Israel's data, for period 1999-2002.

### Introduction.

Non-performing loans (NPLs) are in many cases not recognised in the *1993 SNA*. NPLs originate entries in the national accounts only when it becomes clear that the debt will not be repaid under the agreed conditions: entries are registered in the accounts if the debt is renegotiated, forgiven by mutual agreement, or the creditor accepts writing off the debt. Unilateral repudiation of debts by the debtors is not recognised by the System. Also, provisions for bad debts are not recorded in the SNA:

“Provisions for bad debts are treated as bookkeeping entries that are internal to the enterprise and do not appear anywhere in the System”, 1993 SNA Para. 10.140.

The Monetary and Financial Statistics Manual (MFSM) recommendation on recording provisions for NPL under “Other Accounts Payable” represents an improvement, but due to the impact that NPLs have had in international financial crises, more information is needed on NPLs, provisions on them and arrears on interest.

Interest is recorded on an accrual basis, also on NPLs, even if they are not paid. This may create problems with the interpretation of FISIM, measured on the basis of accrued interest flows. Some aspects of the problem are discussed below.

### FISIM estimates and non-performing loans.

It is possible that the income recorded in the national accounts as generated by financial intermediaries exceeds what they conceive as their generated income. This happens if creditors are able to charge interest rates that include a premium for possible default risks. If this is the case, and FISIM are calculated without adjusting the interest rates implicit in the accrual interest flows and the nominal value of loans, the output, value added and operating surplus of financial intermediaries will be overvalued.

An IMF working paper (also posted on the IMF's EDG on Non-Performing Loans), written by Adriaan M. Bloem and Cornelis N. Gorter, "The treatment of Nonperforming Loans in Macroeconomic Statistics", notes in paragraph 8 that; “A more or less predictable level of non-performing loans, though it may vary slightly from year to year, is caused by an inevitable number of wrong economic decisions...Enterprises may well be able to pass a large proportion of these costs to customers in the form of higher prices. For instance, the interest margin applied by financial institutions will include a premium for the risk of non-performance on granted loans”. It insists, in Para. 31; “... it is very likely that the rates financial intermediaries set include a risk premium, the *1993 SNA* may well cause recording of overstated values for output and operating surplus of banks and other financial intermediaries”. Para. 38 stresses that FISIM; “as recorded in the national accounts...can be deemed as overstated if, in reality, imputed interest on impaired loans is never paid”.

---

<sup>1</sup> Pablo Mandler, Aharon Blekh and Daniel Finzi. Parts of this paper are taken from a previous one, written for the IMF's EDG on Non-Performing Loans.

However, Para. 39 concludes that; “it can also be argued that the financial service for which FISIM was recorded has been delivered, no matter whether it is eventually paid for or not. Seen from this angle, unpaid FISIM should be recorded as output, and treated in the same way as output of other industries that is not paid for” (our underlining).

It is true that financial services have been produced and provided to debtors, but the average price charged on them is higher than the effective price paid by the debtors that do not perform their loans and accrued interest. Because financial intermediaries expected this situation to occur, and have included a risk premium covering defaults in their interest rates, the average price effectively received might be the expected one, which is lower than the “price” recorded in the national accounts on the basis of accrual interest flows.<sup>2</sup>

Could the statements made above be applied to non-financial producers, since the cash price charged by them could also include a risk premium?

Three cases are analysed:

1. Non-financial producers sell part of their output on a cash basis and part on instalments.

The price taken into account in the SNA to value sales in this case is the cash price charged by the producer. Of course, the interest rate charged on the credit provided to the buyer may contain a risk premium, but it does not necessarily affect the cash price charged on products sold by the producers. FISIM are not calculated for them and interest flows are recorded in the allocation of income account. In this way, defaults do not affect the value of output, value added and operating surplus of these producers.

2. Only cash prices are known for products that can also be bought in instalments, with no interest charge for the instalment payments.

In this case cash prices are established higher than normal, with zero interest (or very low explicit rates) for the credit provided for sales in instalments. The objective is to induce buyers to acquire products to be paid in instalments, charging them high implicit interest rates. In this case, the use of the “cash price” would overvalue the producer’s output, for which reason an implicit cash price should be estimated by excluding the implicit interest charged on the credit provided by the seller, as it is usually done in price surveys.

A normal market rate of interest should be charged on the credit provided by the seller, in order to estimate the effective implicit cash price. The latter price will not contain a risk premium for default on the credit provided. As noted above, the “normal market rate” applied may contain a risk premium charged by banks, but FISIM is not estimated for credits provided by non-financial producers, even if financed by loans obtained from financial intermediaries.

3. The cash price charged by stores, supermarkets and the like may contain an overcharge to cover losses due to small robberies (shoplifts).

In principle, transactions between two willing economic units have not taken place. However, the costs of the shoplifted items are generally included as part of the costs of the sold

---

<sup>2</sup> The discussion paper notes, “ This argument presumes that banks are able to pass the risks of loans on to their customers” (note 23, in page 13). Probably this is not the case for “catastrophic” defaults, in periods of deep and generalised financial crisis; but it is reasonable to think that if financial intermediaries have the power to fix a spread between the interest rates charged on loans and deposits, as a way to charge indirectly for “free” services provided to customers, the spread may well include a risk premium on “a more or less predictable level of NPLs, that may vary slightly from year to year”.

ones, when estimating the trade margin. As a result, a zero implicit price for these non-transacted items is charged in practice, effectively reducing the average price charged on the transacted ones. Output, value added and operating surplus will not be overvalued in this case.

The accounting rules applied by the System make sure that defaults on credits provided to buyers and interest rates charged on them (including, or not, a risk premium) do not affect the measurement of the output of the non financial intermediaries, whereas the measurement of FISIM (based on accrual interest flows) may effectively overvalue the output generated by financial intermediaries.

If the latter is the case, an adjustment should be made to estimate FISIM in order to avoid the implicit overvaluation of output, value added and operating surplus of financial intermediaries. The adjustment should eliminate the excess spread charged by them when taking into account the risk of losses due to defaults by borrowers. The adjustment should in principle cover not only the defaulted loans but also the interest not paid, since both of them are supposed to be taken into account by financial intermediaries when fixing the spread between the interest rates charged and paid by the banks. The spread represents the price of the services indirectly measured. The adjustment will also affect the series at constant prices, since the base year spread will change.

### **An exercise based on empirical data**

A very simple exercise is annexed, showing the impact of non-performing loans on the production account of the commercial bank corporations.

Banks' financial statements in Israel record the interest received on an accrual basis. However, the interest payment on a non-performing loan is not recorded as part of the interest received, but as a partial repayment of the loan itself. Also, non-paid interest on some types of "problematic debts" are not accrued.

The provisions made by the banking corporations for bad debts have been taken as an approximation to the adjustment that should be made to FISIM. This is to eliminate the risk premium incorporated in the interest rate charged by banks when trying to cover possible defaults by borrowers. However, they are based on instructions given by the Central Bank to the banking corporations, which may in practice result in higher provisions than the ones required to cover the losses incurred by banks due to effective defaults.

The exercise shows that although the provisions for bad debts amount to a relatively small percent of the loans provided by the commercial banks, they have grown significantly during the covered period, creating an important impact on the absolute values, and behaviour through time, of some components of the commercial banking corporations' production account.

### **Conclusions.**

The adjustment of FISIM in order to eliminate the risk premium from the interest rates charged by financial intermediaries may have significant effects on the estimated macroeconomic aggregates on financial activities, specially in periods of economic recessions. It is particularly important in such periods to not get the wrong signals from the national accounts on the level and characteristics of financial activities.

It may be difficult to reach an agreement on the need of doing the type of adjustment explained above and on how should it be done if so decided. However, the topic should be discussed in the framework of the revision process of the 1993 SNA.

**Annex: An illustrative exercise on FISIM adjustment based on Israel's data.****PRODUCTION ACCOUNT OF COMMERCIAL BANKING CORPORATIONS****NIS millions, at current prices**

	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>
Services directly sold	6524	6896	6655	5987
FISIM	4851	5394	6369	11123
<b>Output</b>	<b>11375</b>	<b>12290</b>	<b>13024</b>	<b>17110</b>
Intermediate consumption	2153	2231	2379	2222
Value added, gross	9222	10060	10645	14888

**After adjustment**

Services directly sold	6524	6896	6655	5987
FISIM	2854	3231	2184	3627
<b>Output</b>	<b>9378</b>	<b>10127</b>	<b>8839</b>	<b>9614</b>
Intermediate consumption	2153	2231	2379	2222
Value added, gross	7225	7896	6460	7392

**Additional data**

Annual loan-loss provision	1997	2164	4185	7496
FISIM adjustment as percent of GDP at current prices	0.5	0.5	0.9	1.5