Working Party on National Accounts

Estimating and allocating FISIM to users by employing indirectly related available data

Common day

To be held on 3 October 2012
OECD Conference Centre
Beginning at 9:00 a.m.

This document has been prepared by Esther Ohana, Pablo Mandler and Oz Shimony CBS, Israël) and will be presented under item 6 of the draft agenda

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Estimating and allocating FISIM to users by employing indirectly related available data

Prepared by Mrs. Esther Ohana, Mr. Pablo Mandler and Mr. Oz Shimony
Introduction

The paper presents three issues:
• FISIM estimated by incorporating data from a new source
  (section 1)

• Results of a trial exercise on the use of different reference rates, when incorporating the maturity term dimension of deposits and loans in the FISIM estimation
  (section 2)

• The impact on FISIM of unpaid interest, nonperforming loans and banks expected defaults from their customers
  (section 3)
Introduction - continued

• For estimation and allocation of FISIM to users, a data source which was not previously used is incorporated in the paper.

• Banks present information about financing intermediation activity distinguishing between types of customers and types of services provided by them.

• The SNA approach for measuring financial intermediation services is wide (see paragraph 3 in the introduction), while in practice the approach used is more narrow and applies to loans and deposits provided by or deposited with financial institutions.
Measurement and allocation - FISIM

• Allocation FISIM to sectors requires detailed data on interest paid and received by sector.

• There is a difficult to use interest data reported in the financial statements of the companies (counterparty sector) because in many cases the interest received on deposits and paid on loans are not separated from other receipts and expenditures, or are provided as interest receipts net of interest paid.

• The information on the financing intermediation activity of the banks, as presented in their Business by Segments Activity analysis, has been used as a related source.
Measurement and allocation - FISIM

• The segments of activity are presented according to general recommendations made by the Bank of Israel’s Supervisor of Banks.

Segments and main characteristics:

• **Households Segment**: Private customers with low levels of income and wealth.

• **Private Banking Segment**: Young customers with monthly income and/or high investment.
Measurement and allocation - FISIM

- **Small Business Segment**: Customers are involved in a wide range of economic activities with a low level of business activities that have a low to medium level of complexity.

- **Commercial Segment**: Market business customers that are engaged in a wide range of economic activities.

- **Corporate Segment**: Different levels of high turnover and indebtedness are defined.

Although the banks objective is to estimate segments profits which differs from the SNA’s output indirectly measured, the method applied by the banks is quite similar to the SNA method of estimating FISIM.

- The coverage of the segments are deferent from the coverage of the SNA sectors.
Measurement and allocation - FISIM

• The data source was mainly used to obtain the segments received and paid interest rates on their deposits and loans respectively, and to apply them at the SNA sectors level.

• When more than one segment and sub-segment were linked to a given sector, their weighted average interest rates was calculated.

• The obtained rates were applied to average sectors deposits and loans based on a different source, the National Balance Sheet.
Measurement and allocation - FISIM

• Other sources:
  – National balance-sheet
  – Reports from the Bank of Israel Supervisor of the Banks
  – Balance of payments and the International investment position (IIP)
  – Satellite accounts on non-profit institutions
  – General government - Sequence of Accounts
Measurement and allocation - FISIM

Table 1 - Domestic produced FISIM by users, impact on GDP
(million NIS)

<table>
<thead>
<tr>
<th>Users/Year</th>
<th>Used for consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non Financial Corporations</td>
<td>v</td>
</tr>
<tr>
<td>Financial Corporations</td>
<td>v</td>
</tr>
<tr>
<td>General Government*</td>
<td>v</td>
</tr>
<tr>
<td>Non Profit Institutions*</td>
<td>v</td>
</tr>
<tr>
<td>Household</td>
<td></td>
</tr>
<tr>
<td>As consumers</td>
<td>v</td>
</tr>
<tr>
<td>As producers</td>
<td>v</td>
</tr>
<tr>
<td>Mortgage</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
<tr>
<td>Rest of the world - Israel export</td>
<td></td>
</tr>
<tr>
<td>Impact on GDP (%)</td>
<td></td>
</tr>
</tbody>
</table>

* FISIM used for intermediate consumption but recorded as final consumption, see explanation in text
# Table 2 - Supply and Use of FISIM

(million NIS)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>FISIM</td>
<td>25,370</td>
<td>24,137</td>
<td>20,975</td>
<td>22,747</td>
<td>20,139</td>
<td>21,688</td>
<td>20,097</td>
</tr>
<tr>
<td>Import</td>
<td>498</td>
<td>982</td>
<td>1,317</td>
<td>1,276</td>
<td>1,484</td>
<td>1,134</td>
<td>1,059</td>
</tr>
<tr>
<td>Total</td>
<td>25,868</td>
<td>25,119</td>
<td>22,292</td>
<td>24,023</td>
<td>21,624</td>
<td>22,821</td>
<td>21,156</td>
</tr>
<tr>
<td>Intermediate Consumption</td>
<td>17,493</td>
<td>18,159</td>
<td>16,398</td>
<td>14,661</td>
<td>13,242</td>
<td>15,452</td>
<td>14,550</td>
</tr>
<tr>
<td>Final Consumption Expenditure HH</td>
<td>6,985</td>
<td>5,875</td>
<td>4,608</td>
<td>7,197</td>
<td>6,522</td>
<td>6,071</td>
<td>5,022</td>
</tr>
<tr>
<td>Final Consumption Expenditure GG*</td>
<td>243</td>
<td>251</td>
<td>209</td>
<td>268</td>
<td>456</td>
<td>658</td>
<td>671</td>
</tr>
<tr>
<td>Final Consumption Expenditure NPISH*</td>
<td>214</td>
<td>171</td>
<td>192</td>
<td>128</td>
<td>137</td>
<td>138</td>
<td>191</td>
</tr>
<tr>
<td>Export</td>
<td>934</td>
<td>662</td>
<td>884</td>
<td>1,769</td>
<td>1,268</td>
<td>502</td>
<td>722</td>
</tr>
<tr>
<td>Total</td>
<td>25,868</td>
<td>25,119</td>
<td>22,292</td>
<td>24,023</td>
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<td>21,156</td>
</tr>
</tbody>
</table>

*See note in table 1
Different reference rates

- Optional reference rates are tested, to take into account the different maturity terms of loan and deposits:

- **Single Interbank average interest rate** on deposits and loans.

- **Average reference rate**, obtained by taking short and long-term reference rates, weighted by the stocks of short term and long term deposits and loans.

- **Mid-point** by using the mid-point of the banks interest rate paid on deposits and the interest rate charged on loans.
Different reference rates - main results

Figure 1 - Total FISIM under the various reference rates (Million NIS)
Different reference rates - main results

Figure 2 - FISIM as percentage GDP under the various reference rates (%)
Different reference rates - main results

Figure 3 - FISIM contribution to bank output (%)
FISIM Implication of unpaid interest and nonperforming loans

• SNA recording of Non performing loans (NPL), un-paid interest and treatment of banks borrowers expected defaults are mentioned and their FISIM implications analyzed.

• Part of the loans provided by Financial Intermediaries (FI), are not repaid, and also their interest are not paid for. Because FI expect this to happen, they include a default risk premium in their lending rate.

• Although the banks do not expect to receive the rates charged to customers, these rates are applied by adopting the SNA accounting rules.
FISIM Implication of unpaid interest and nonperforming loans

• Interest is recorded on an accrual basis, implying that the unpaid interest and the associated service charge are recorded as payable until the debt is unilaterally written off by the creditor or cancelled by mutual agreement between both parties.

• Also non performing loans (NPL) will continue to be included in the outstanding principal. Although the FI make provisions for NPL, the SNA does not recognize them in its central framework’s flows, stocks and aggregates, nevertheless, data on NPL and provisions on them are incorporated as memorandum items only.
FISIM Implication of unpaid interest and nonperforming loans

• The strict application of the SNA accounting rules implies that the average expected interest rate by FI will in practice, be lower than the lending rate applied to the average period loans in the process of estimating FISIM

• If this is the case, and no adjustment to account for the expected default losses, FISIM will be overvalued and, also the FI’s output, value added and operating surplus

• A proposal made on how to value loans when estimating FISIM would help to partially resolve the mentioned overvaluation
FISIM Implication of unpaid interest and nonperforming loans

• “Although we find little evidence for purging risk premia from FISIM, we do find that the SNA’s valuation of loans at contract value on the balance sheet is inappropriate for the calculation of financial services output... We propose instead that FISIM in current prices be calculated incorporating the market or fair value of loans even though loans on the SNA balance sheets are at book value. This approach would be compatible with existing 2008 SNA guidance on calculation of FISIM, without requiring a substantive revision of the current national accounting standard” (Dennis Fixler and Kim Zieschang, Deconstructing FISIM: Should Financial Risk Affect GDP? July 30, 2010).
FISIM Implication of unpaid interest and nonperforming loans

• It is worth noting that, although NPL are not recognized in its central framework, the 2008 SNA recommends including two memorandum items in relation to NPL in the accounts, with measurement of NPL at nominal value and also at market or fair value. In the absence of fair value data, the SNA recommends to show the nominal value less expected loan losses (see 2008 SNA, paragraph 13.67).

• Nominal loans less expected default losses have been applied in FISIM adjusted estimation. Also an estimation of FISIM with a reduced volatility of expected default losses was obtained by applying the Hood K.K. proposed algorithm. Both are compared to the FISIM estimation of section 1.
FISIM Implication of unpaid interest and nonperforming loans - main results

Figure 8 - Expected default losses adjustment, Impact on FISIM (Million NIS)

- Fisim adj by provision directly
- Fisim
- Fisim adj by reducing provision volatility
Conclusions

• FISIM and the main derived aggregates have been estimated in a trial exercise using data on Banks Business by Segments Activity, combined with data from other sources. There are some positives outcomes, e.g., a better estimation of the households uses of FISIM for intermediate and final consumption, which usually presents a difficult challenge.

• The exercise also enabled the detection of the main weaknesses of the Banks Business by Segments Activity as a data source.

• Additional information from the banks is needed, specially an SNA sector classification of the banks customers and their transactions, that could be requested by the Bank of Israel.
Conclusions - continued

• The results of applying different reference rates, related to the maturity term of deposits and loans on the value of FISIM, its composition and impact on GDP were estimated.

• The convenience of eliminating from FISIM the indirectly measured services generated as a result of the different maturity terms of deposits and loans have been discussed by two international Task Forces.

• Finally, the implications of the SNA recording rules for NPL and unpaid interest were discussed. An adjustment was applied to measure the effects of excluding from FISIM the expected default losses.
Estimation and allocation of FISIM

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