Use of financial accounts in the context of the ECB needs for monetary policy and financial stability analysis

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1 This presentation was prepared for the meeting. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.
Use of financial accounts in the context of the ECB needs for monetary policy and financial stability analysis

Session III

Workshop on the Use of Financial Accounts
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(*) input from annual ECB financial accounts training seminar acknowledged
(**) Views should not be attributed to the ECB
<table>
<thead>
<tr>
<th>1</th>
<th>Financial accounts uses: financial accounts and the ECB functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Analytical examples</td>
</tr>
<tr>
<td>2.1</td>
<td>Sector analysis: imbalances and leverage rotation</td>
</tr>
<tr>
<td>2.2</td>
<td>Who-to-whom and interconnectedness</td>
</tr>
<tr>
<td>3</td>
<td>Enhancing financial accounts uses: ESCB medium-term strategy</td>
</tr>
<tr>
<td>4</td>
<td>ECB communication</td>
</tr>
</tbody>
</table>
1. Financial accounts uses: financial accounts and the ECB functions

2. Analytical examples

2.1. Sector analysis: imbalances and leverage rotation

2.2. Who-to-whom and interconnectedness

3. Enhancing financial accounts uses: ESCB medium-term strategy

4. ECB communication
1. Financial accounts uses: financial accounts and the ECB functions

**Macroeconomic variables in the system of accounts**

<table>
<thead>
<tr>
<th>Euro area accounts</th>
<th>Uses</th>
<th>Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transactions</td>
<td>S1</td>
<td>S2</td>
</tr>
<tr>
<td>GDP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Financial accounts**

<table>
<thead>
<tr>
<th>Non-financial accounts</th>
<th>Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gov Deficit</td>
<td></td>
</tr>
<tr>
<td>Gov Debt</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Financial Accounts</th>
<th>Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial flow</td>
<td></td>
</tr>
</tbody>
</table>

**Macroeconomic variables**

- GDP
- M3
- HH Consumption
- Gov Deficit
- Gov Debt

**Key variables**

- B1G: Value Added/Good
- D1: Compensation of employees
- D2-D31: Taxes less subsidies on production
- D29-D39: Other Taxes less subsidies on production
- D4: Prop. income
- D5: Taxes on income and wealth
- D61: Social security contributions
- D62: Social security benefits
- D7: Current transfers
- D8: Equity of unincorporated enterprises
- D9: Capital transfers
- K1: Consumption of fixed capital
- K2: Acq.-disp. of non-prod non-fin assets
- P3: Final consumption
- P5: Gross capital formation
- P6: Exports
- B9: Net lending
- F1: SDR and Monetary Gold
- F2-4: Currency, Deposits, Loans
- F3: Securities oth. Than shares
- F5: Shares
- F6: Insurance technical reserves
- F7: Oth. accs receivable/payable
Pros and cons of financial accounts as an analytical tool

**Comprehensiveness** to allow for various kind of analysis

All economic flows: stocks, transactions, other flows… clearly distinguished

Who-to-whom information for key instruments

Together and **integrated with non-financial accounts**

Comparability across countries

Consistent messages (*but more consistency required*)

Very rich and **complex data**: challenge to synthesize relevant messages & have consistent analysis

Availability of **alternative tools** for analysis (e.g. banking statistics, securities statistics, etc) that might provide messages inconsistent with FAs

Timeliness might not be sufficient

Reliability: some data subject to high revisions

**Time series length** insufficient
1. Financial accounts uses: financial accounts and the ECB functions

Some examples of analytical areas of interest for the ECB …

Monetary policy and financial analysis
- Transmission mechanism
- Financial conditions of NFCs
- Households portfolio choices
- Flow of funds
- Monitoring (financial) macroeconomic risks
- …

Financial stability and macroprudential analysis
- Leverage
- Exposures, linkages, propagation
- Shadow banking
- …

Integrated non-financial and financial analysis (cross-checking)
- Housing investment and mortgage financing
- NFC internal and external financing
- Sector interplays
- …

International comparisons
- Sectoral comparison across large economic areas
- Macroeconomic risks by EU countries
- Country contributions to euro area financial developments
- …
EAA and the ECB’s monetary policy strategy

Primary objective: Price stability

Governing Council takes monetary policy decisions based on an overall assessment of the risks to price stability.

Economic Analysis:
- Analysis of economic dynamics and shocks

Monetary Analysis:
- Analysis of monetary trends

Full set of information

1. Financial accounts uses: financial accounts and the ECB functions
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2. Analytical examples

2.1. Sector analysis: imbalances and leverage rotation

2.2. Who-to-whom and interconnectedness

3. Enhancing financial accounts uses: ESCB medium-term strategy

4. ECB communication
2.1 Sector analysis: imbalances and leverage rotation

Comprehensive and integrated view of financial and non-financial developments of the private (non-financial) sector ...

Source: EAA; last observation Q1 2017
2.1 Sector analysis: imbalances and leverage rotation

Comprehensive and integrated view of financial and non-financial developments of the private (non-financial) sector …

Source: EAA; last observation Q3 2018
2.1 Sector analysis: imbalances and leverage rotation

... and also monitor the soundness of the financial sector from a macroeconomic perspective ...

![Graph: Capital position of the financial corporations’ sector in the Euro Area](chart)

Source: EAA; last observation Q1 2017

Notes: 1. “Equity” comprises shares and other equity.
2. “Net assets” are the difference between assets and liabilities other than equity, all at market value.
3. The “notional net assets to assets” ratio is based on net assets and assets excl. changes in prices of assets and liabilities. Interbank deposits and Eurosystem financing are netted out from assets A and liabilities.
2.1 Sector analysis: imbalances and leverage rotation

... and analyse external imbalances ... and sector imbalances...

Source: EAA; last observation Q3 2018
Units: four-quarter sums, as percentage of GDP
2.1 Sector analysis: imbalances and leverage rotation

... or leverage developments...

Year-on year change in contributions to leverage in the euro area

Source: EAA; last observation Q3 2018
Units: Contributions to debt-to-asset ratio; year-on-year changes due to transactions
2.1 Sector analysis: imbalances and leverage rotation

... and compare policy responses

**Accumulated change in public liabilities (consolidated)**

**Euro area**

**US**

Source: EAA & US FoF; last observation Q3 2018
Units: Accumulated change in liabilities since 2007, contributions
Note: holdings of government liabilities by the central bank and of the central bank by government are consolidated out
2.1 Sector analysis: imbalances and leverage rotation

Useful for country analysis: cross-country size differences of the financial system

Size of the euro area financial sector, 2008, 2014 and 2015
(ratio of assets to GDP)

Source: ECB (EAA, MFI BSI statistics) and ECB calculations.
Notes: “MFIs (excl. ESCB)” refers to the difference between MFI total assets (including national central banks, NCBs) from the QSA and NCB assets from the MFI BSI statistics. Data for 2008 are not available for all the countries, and in such cases data for 2012 are used. EA (euro area) is the sum of individual euro area countries and is therefore also a combination of data for 2008 and 2012 for the starting date.
Cross-country composition differences of the financial system

Composition of the euro area financial sector, 2008, 2014 and 2015 (% of total assets of the financial sector)

Source: ECB (EAA, MFI BSI statistics) and ECB calculations.
Notes: “MFIs (excl. ESCB)” refers to the difference between MFI total assets (including NCBs) from the QSA and NCB assets from the MFI BSI statistics. Data for 2008 are not available for all the countries. In such cases data for 2012 are used instead. EA is the sum of individual euro area countries and is therefore also a combination of data for 2008 and 2012 for the starting date.
2.1 Sector analysis: imbalances and leverage rotation

MIP: Annual review of macroeconomic imbalance in the European Union

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2. Analytical examples

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4. ECB communication
2.2 Who-to-whom and interconnectedness

**NETWORK of sector interlinks**

**Columns** break down a sector’s liabilities by counterparty.

**Rows** break down its assets.
2.2 Who-to-whom and interconnectedness

Policy transmission: government debt securities before and after QE (PSPP) by the ECB

All sectors (except Insurance) net sellers of government debt after PSPP start. MFIs, IFs and the RoW sell similar proportions of their prior holdings.

<table>
<thead>
<tr>
<th>Sector</th>
<th>13Q4 to 15Q1</th>
<th>15Q2 to 16Q3</th>
<th>% of prior holdings sold in 2nd period</th>
</tr>
</thead>
<tbody>
<tr>
<td>NFCs</td>
<td>+3%</td>
<td>-7%</td>
<td>2.2% by excluding the Eurosystem</td>
</tr>
<tr>
<td>MFIs *</td>
<td>+3%</td>
<td>-7%</td>
<td></td>
</tr>
<tr>
<td>IFs</td>
<td>+3%</td>
<td>-7%</td>
<td></td>
</tr>
<tr>
<td>OFIs</td>
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<tr>
<td>PFs</td>
<td>+3%</td>
<td>-7%</td>
<td></td>
</tr>
<tr>
<td>Gov’t</td>
<td>+3%</td>
<td>-7%</td>
<td></td>
</tr>
<tr>
<td>HHs</td>
<td>+3%</td>
<td>-7%</td>
<td></td>
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<tr>
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<td>+3%</td>
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* excluding the Eurosystem

**Investment flows into government debt by sector, six quarters prior (to 15Q1) and after (to 16Q3) the activation of the PSPP, EUR bn.**

The PSPP was activated on 9 March 2015. Consequently, a period of 17 business days following activation still falls within the six quarters to 15Q1.
2.2 Who-to-whom and interconnectedness

Propagation effects of shocks with network theory tools …

Flow-of-Funds data

Sectors interconnected via ‘Who-to-whom’ accounts

Iterative algorithm

Initial shock

Bank capital depletion

1st round: Market value of bank equity decreases

2nd and subsequent rounds (iterative): Loss of equity transmitted to sectors holding equity
2.2 Who-to-whom and interconnectedness

Propagation effects of shocks with network theory tools …

Cross-sector spillovers would largely affect the non-bank financial sector

Losses triggered by a reduction in market value of bank equity, euro area aggregates, percentages of total financial assets.

- HH
- GOV
- PF
- INS
- NMMF
- OFI
- MFI
- NFC

2.2 Who-to-whom and interconnectedness

... and decomposing propagation effects...

e.g. indirect effects on investment of a QE shock on banks in a 3-sector economy

Paper prepared for the 35th IARIW General Conference
## 2.2 Who-to-whom and interconnectedness

...linking propagation to network centrality (euro area) ...

<table>
<thead>
<tr>
<th>based on volume (degree centrality)</th>
<th>eigenvector centrality</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Asset volume</strong></td>
<td><strong>Investment centrality</strong></td>
</tr>
<tr>
<td>S12K</td>
<td>S12K</td>
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<tr>
<td>S13</td>
<td>S13</td>
</tr>
<tr>
<td>S14</td>
<td>S14</td>
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<td>S15</td>
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<td>S18</td>
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<tr>
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<td>S21</td>
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<td>S24</td>
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Notes:

- S11: non-financial corporations;
- S12: MFIs (S121+S122+S123);
- S124: investment funds;
- S125: OFIs (S125+S126+S127);
- S128: insurance corporations;
- S129: pension funds;
- S13: general government;
- S1M: Households and NPISHs (S14+S15);
- S12: rest of the world

Households, government, RoW present substantial differences in the financing ranking

Households, RoW present substantial differences in the investment ranking
3. Who-to-whom and interconnectedness

... and comparing centrality across countries (MFIs in the euro area)

- High centrality of MFIs in all euro area countries: high persistence of propagation effects in quantity shocks; exceptions are IE, NL, LU
- **IT, ES**: MFI central and relatively higher n-order propagation effects, but less persistent

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</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Analytical examples</td>
</tr>
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</tr>
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3. Enhancing financial accounts uses: ESCB medium-term strategy

H.9, M.3, M.4 backdata, timeliness, consistency

M.5 micro-data based enhancements

M.1 More on the financial sector (sector/instruments)

H.8 Distributional financial accounts

H.6/ M.6 “look-through” institutional investors

H.10 Split DB/DC for pension funds
1. Financial accounts uses: financial accounts and the ECB functions

2. Analytical examples
   - 2.1 Sector analysis: imbalances and leverage rotation
   - 2.2 Who-to-whom and interconnectedness

3. Enhancing financial accounts uses: ESCB medium-term strategy

4. ECB communication
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EAA Communication channels:

- Briefing note for ECB Executive Board
- Press releases synchronized with Eurostat, with different focus
- 2 ECB press releases each quarter
  - T+94 (NFCs and households focus)
  - T+120 (complete)
- EU country data dissemination by ESCB
- ECB Economic and Statistical Bulletins
- ECB Statistical Data Warehouse
- Quarterly publication: Household Sector Report
4. ECB communication

Specific presentation of network charts

: www.euro-area-statistics.org
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2. Analytical examples
   2.1 Sector analysis: imbalances and leverage rotation
   2.2 Who-to-whom and interconnectedness
3. Enhancing financial accounts uses: ESCB medium-term strategy
4. ECB communication

Thank you for your attention
Questions and comments are welcome

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