

IFC Workshop on the use of financial accounts, co-organised with the Central Bank of the Republic of Turkey  
18-20 March 2019, Istanbul, Turkey

## Use of financial accounts in the context of the ECB needs for monetary policy and financial stability analysis<sup>1</sup>

Celestino Giron,  
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<sup>1</sup> 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.

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EUROPEAN CENTRAL BANK

EUROSYSTEM

Celestino Girón\*)  
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# **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  
Istanbul, 18-20 March 2019***

\*) input from annual ECB financial accounts training seminar acknowledged

\*\*\*) Views should not be attributed to the ECB

**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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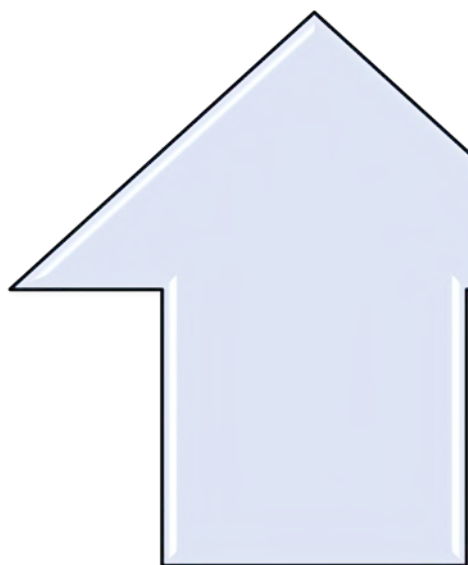
**4** ECB communication

# 1. Financial accounts uses: financial accounts and the ECB functions

## Macroeconomic variables in the system of accounts

		Euro area accounts Transactions								Uses								Resources												
		GS	S1	S11	S12	S13	S14_5	S2	GS	S1	S11	S12	S13	S14_5	S2	GS	S1	S11	S12	S13	S14_5	S2								
		<b>GDP</b>								GS	S1	S11	S12	S13	S14_5	S2	GS	S1	S11	S12	S13	S14_5	S2	GS	S1	S11	S12	S13	S14_5	S2
										Goods and Services	Total Economy	Non-financial corporations	Financial corporations	General Government	Households and NPISH	Rest of the world	Goods and Services	Total Economy	Non-financial corporations	Financial corporations	General Government	Households and NPISH	Rest of the world	Goods and Services	Total Economy	Non-financial corporations	Financial corporations	General Government	Households and NPISH	Rest of the world
Non financial accounts	B1G	Value Added/GDP	M3																											
	D1	Compensation of Employees																												
	D2FD31	Taxes less subsidies on products																												
	D29-D39	Other Taxes less subsidies on production																												
	D4	Property Income																												
	D5	Taxes on income and wealth																												
	D61	Social security contr.																												
	D62	Social security benefits																												
	D7	Current transfers																												
	D8	Equity grants to policy holders																												
	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																													
P7	Imports																													
B9	Net lending																													
B9F	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

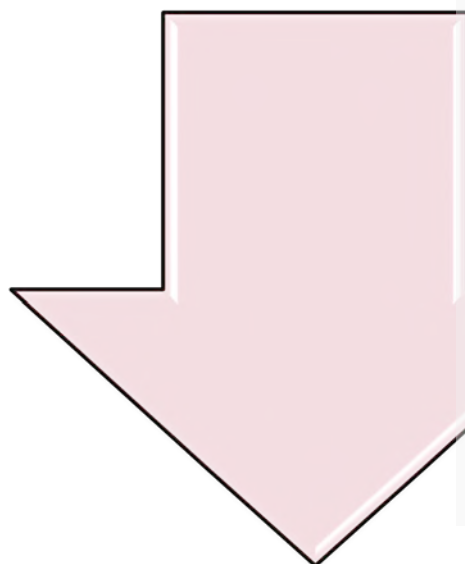
**All economic flows:** stocks, transactions, other flows... clearly distinguished

**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

## 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**

**Monetary Analysis**

cross-checking

Analysis of economic dynamics and shocks

Analysis of monetary trends

**EAA**

**Full set of information**



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**2.1** Sector analysis: imbalances and leverage rotation

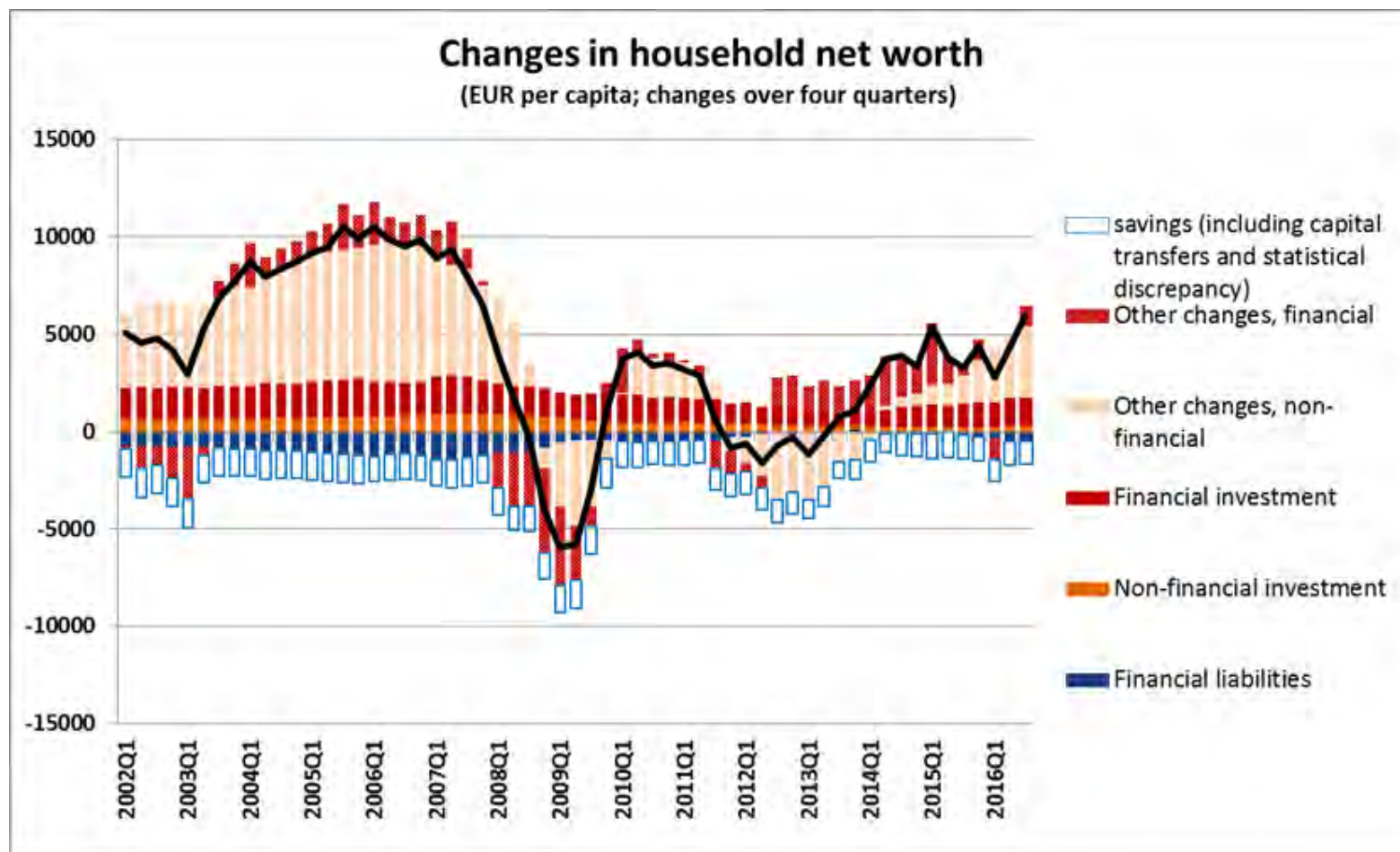
**2.2** Who-to-whom and interconnectedness

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## 2.1 Sector analysis: imbalances and leverage rotation

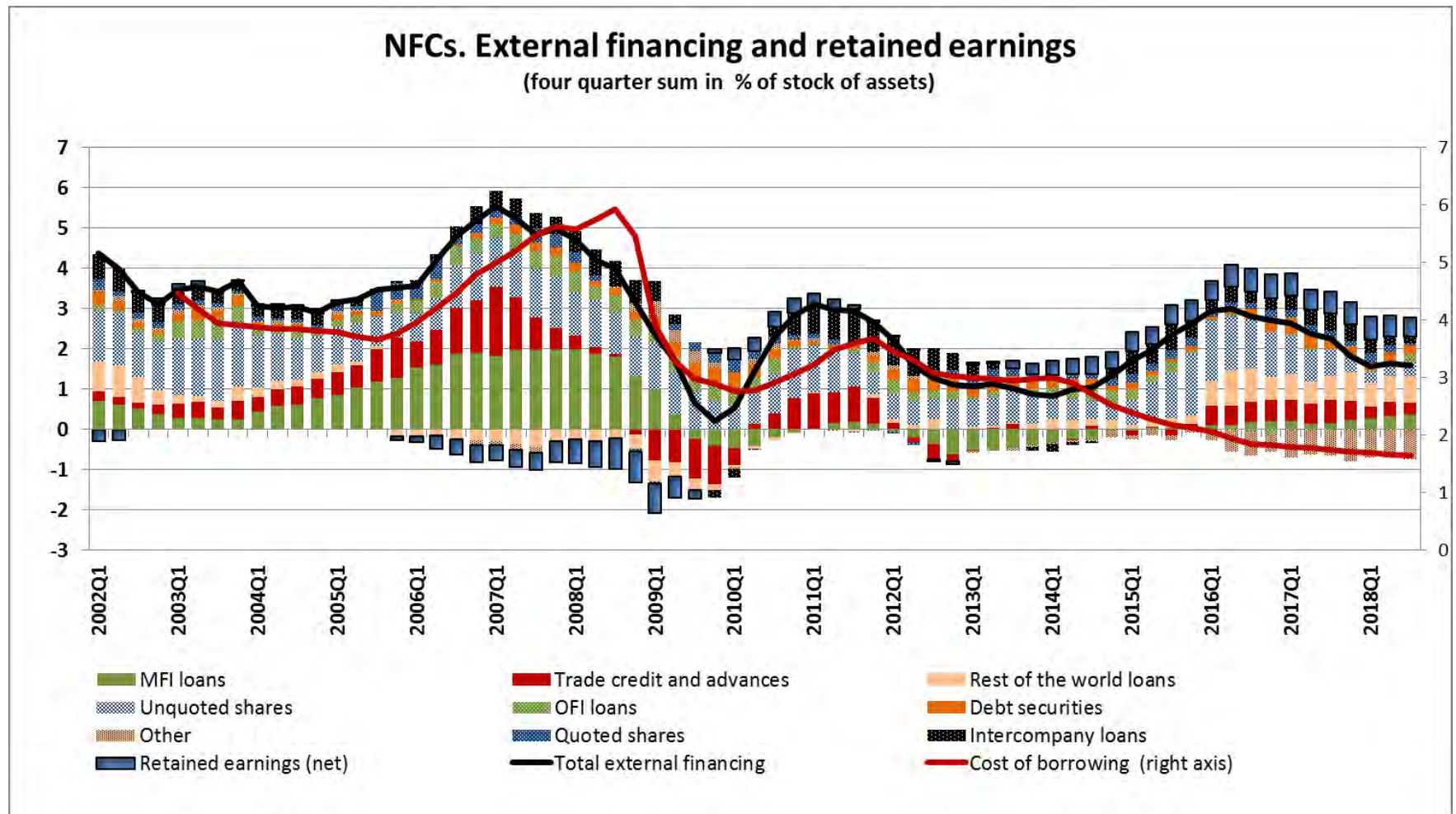
Comprehensive and integrated view of financial and non-financial developments of the private (non-financial) sector ...



Source: EAA; last observation Q1 2017

# 2.1 Sector analysis: imbalances and leverage rotation

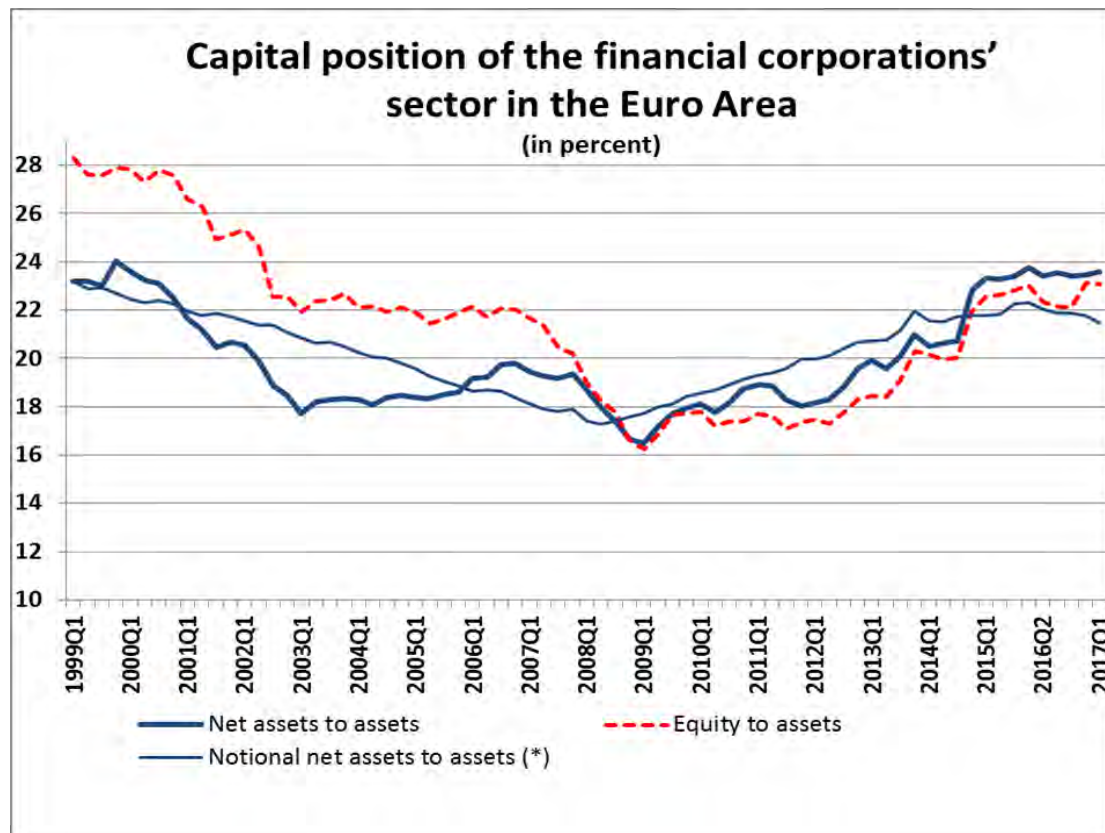
## Comprehensive and integrated view of financial and non-financial developments of the private (non-financial) sector ...



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 ...



Source: EAA; last observation Q1 2017

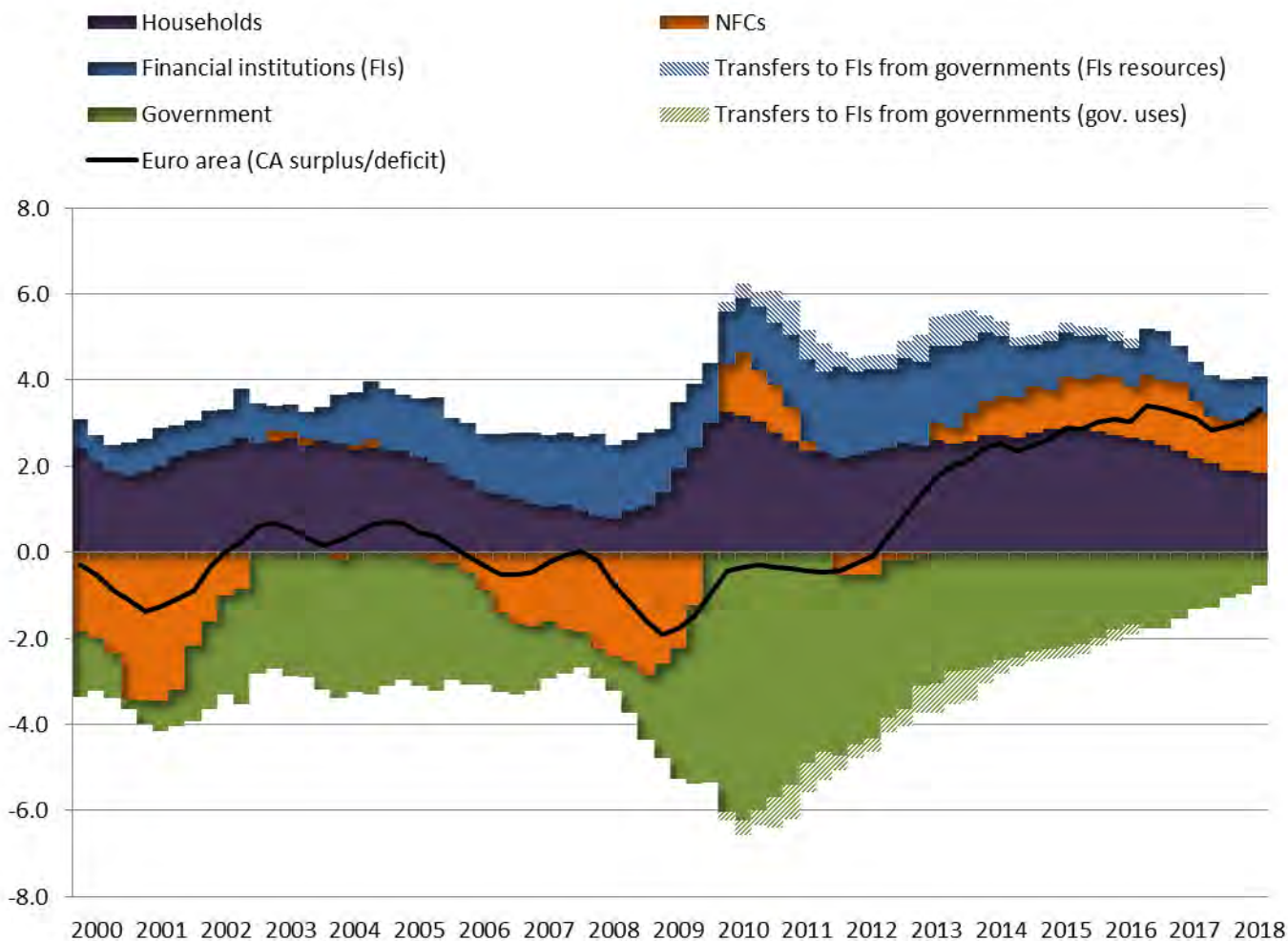
Notes: 1. "Equity" comprises shares and other equity.

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...



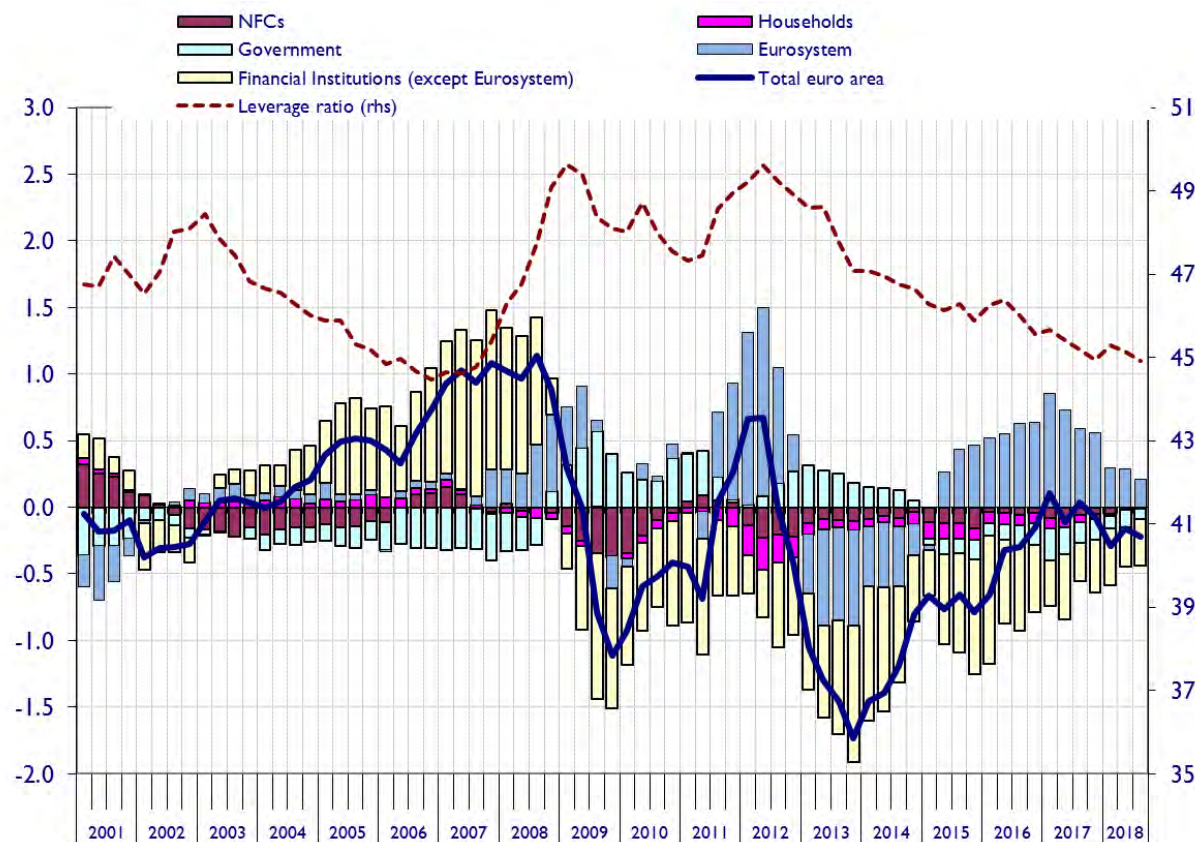
Source: EAA; last observation Q3 2018

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

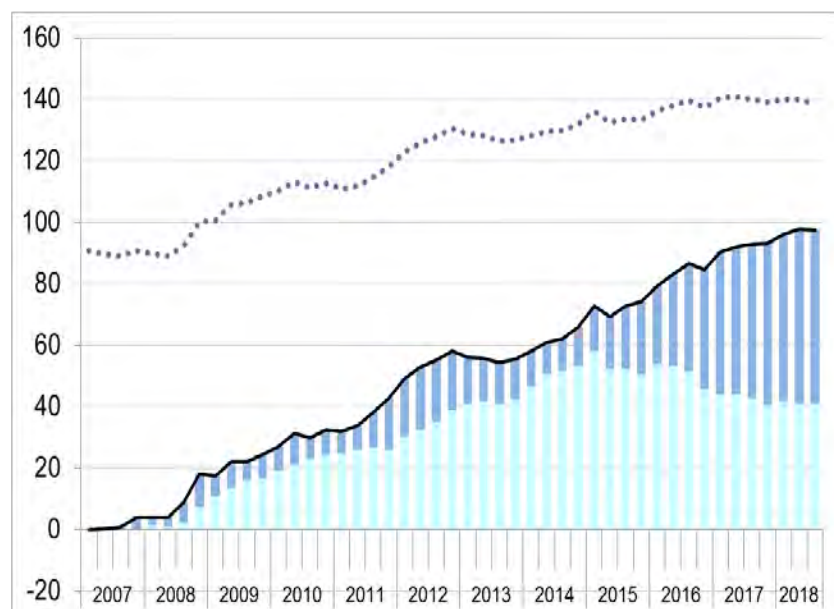
Units: Contributions to debt-to-asset ratio; year-on-year changes due to transactions

## 2.1 Sector analysis: imbalances and leverage rotation

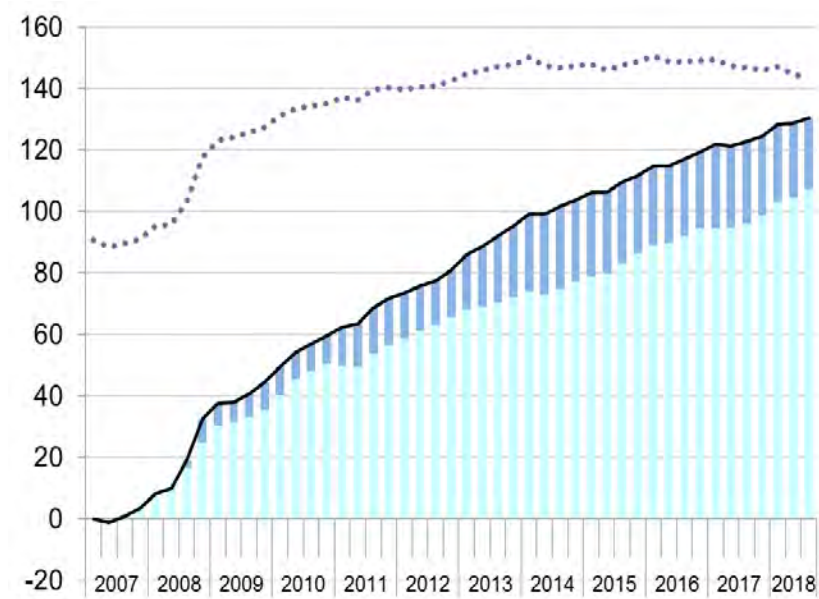
... and compare policy responses

*Accumulated change in public liabilities (consolidated)*

*Euro area*



*US*



Government

Central Bank

Total cumulated change

Total level in %GDP

Source: EAA & US FoF ; last observation Q3 2018

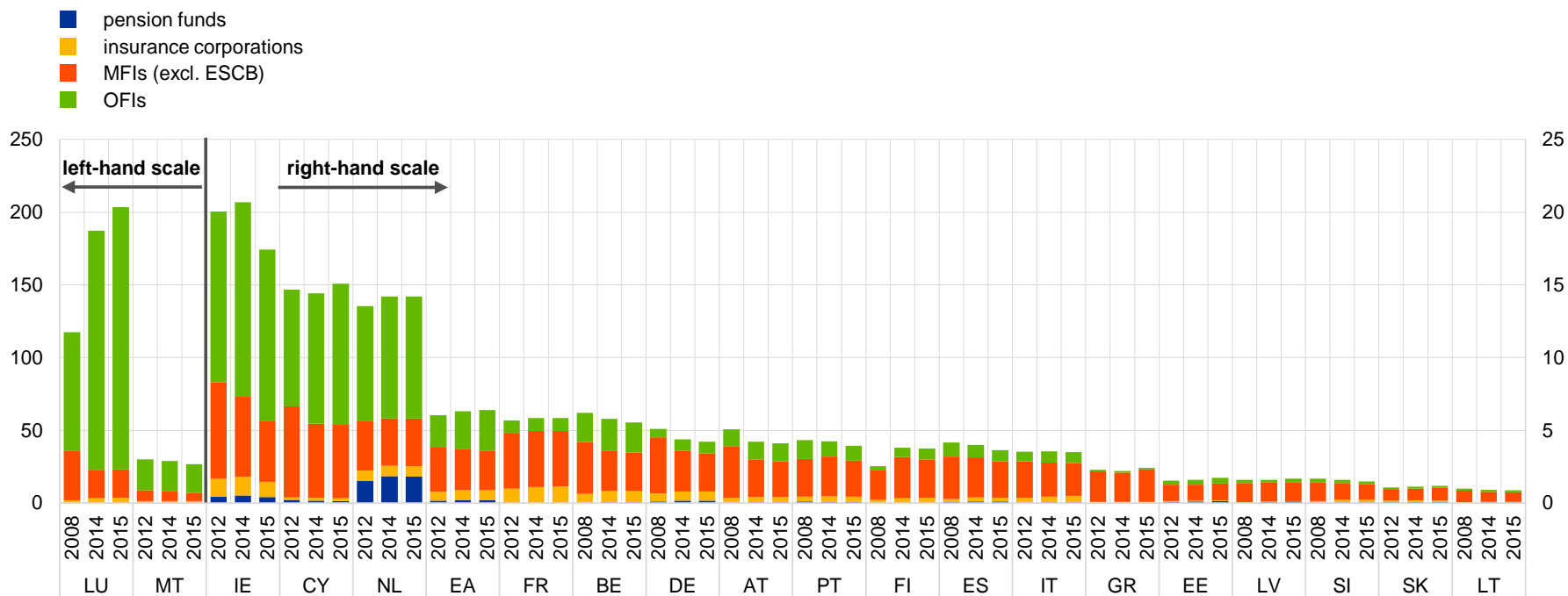
Units: Accumulated change in liabilities since 2007, contributions

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.

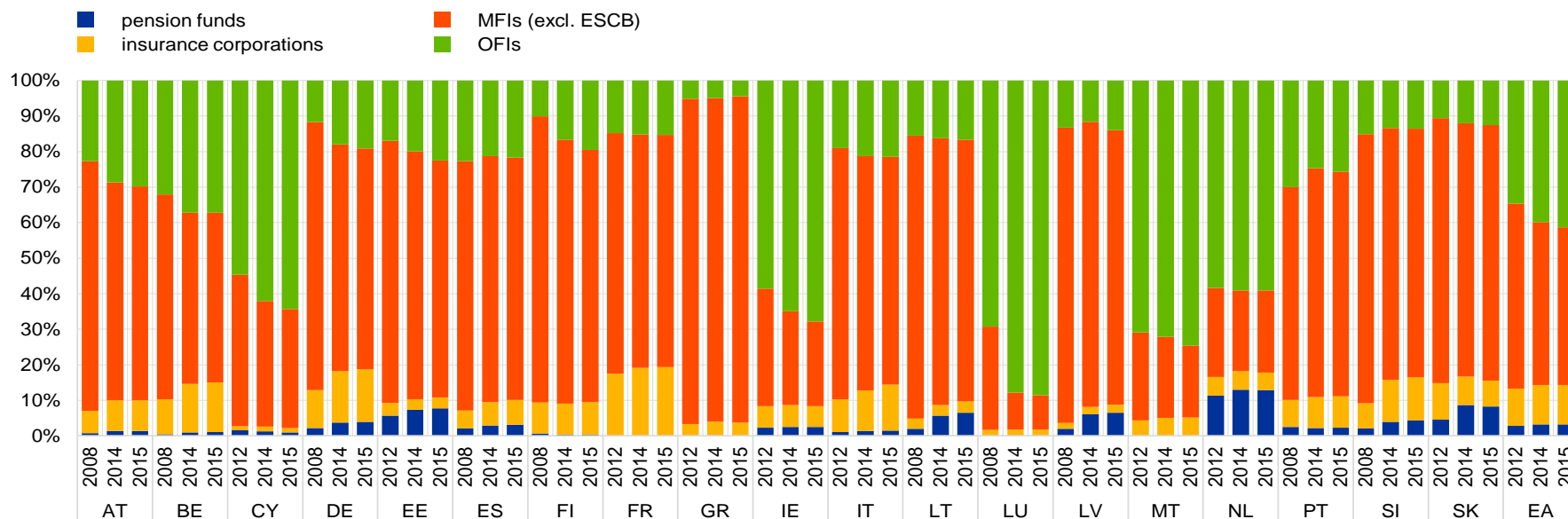
Notes: "MFIs (excl. ESCB)" refers to the difference between MFI total assets (including national central banks, NCBs) from the QSA and NCB assets from the MFI BSI statistics. Data for 2008 are not available for all the countries, and in such cases data for 2012 are used. EA (euro area) is the sum of individual euro area countries and is therefore also a combination of data for 2008 and 2012 for the starting date.



# 2.1 Sector analysis: imbalances and leverage rotation

## 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)



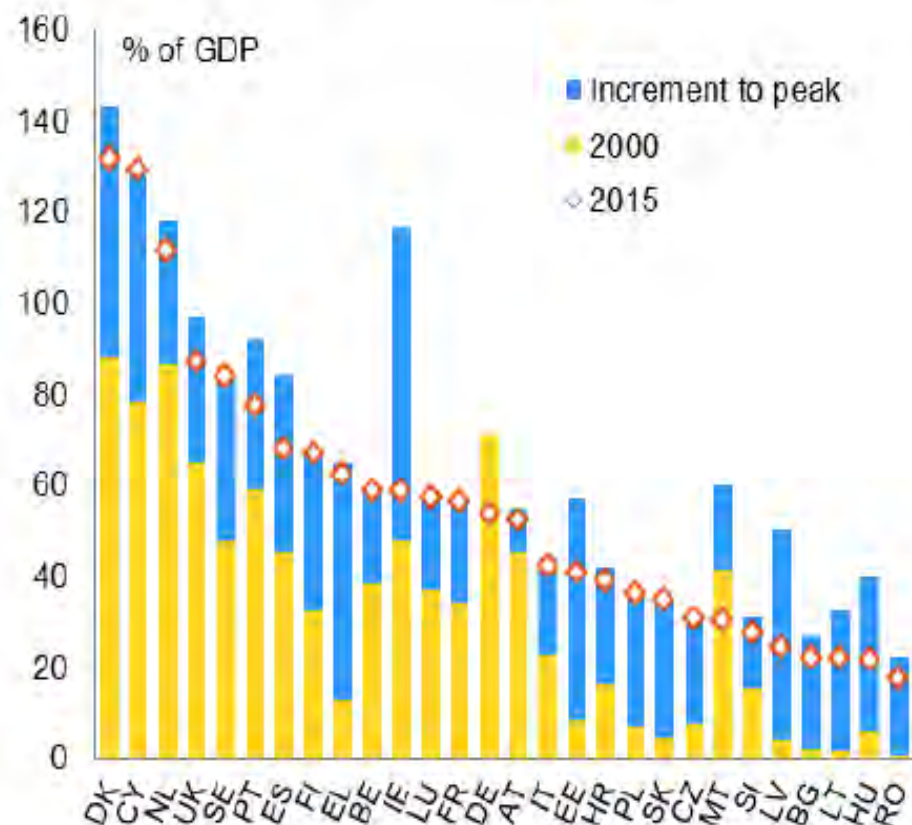
Source: ECB (EAA, MFI BSI statistics) and ECB calculations.

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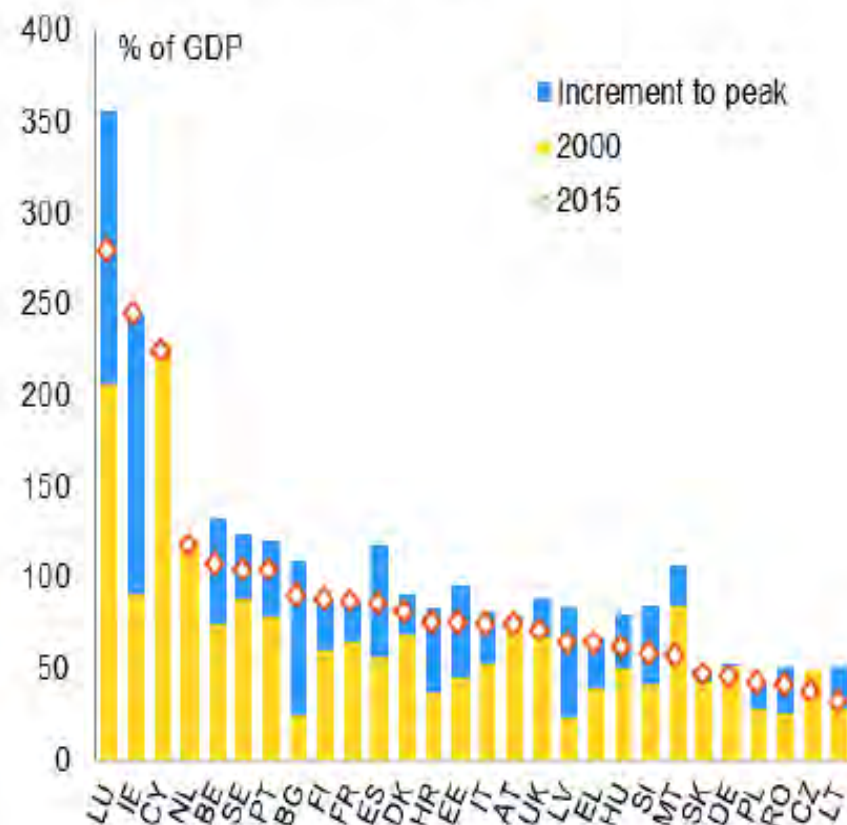
## 2.1 Sector analysis: imbalances and leverage rotation

### MIP: Annual review of macroeconomic imbalance in the European Union

**Graph 8a: Consolidated household debt**



**Graph 8b: Consolidated debt of NFCs**



Source: Alert Mechanism Report 2016, European Commission.

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# 2.2 Who-to-whom and interconnectedness

## NETWORK of sector interlinks

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

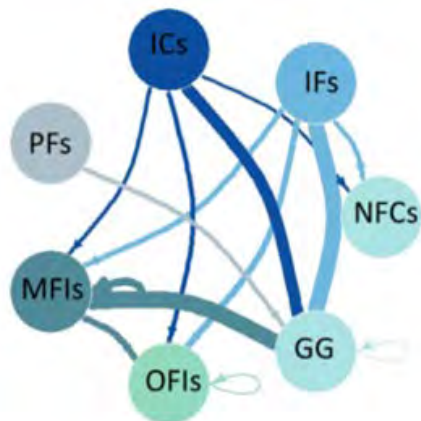
**Rows** break down its assets.

Government

Assets:	Liabilities :
Item 1 ...	Item 1 ...
Item 2 ...	Item 2 ...
	<b>Debt issued : B+E+H</b>

Banks

Assets:	Liabilities :
Item 1 ...	Item 1 ...
Item 2 ...	Item 2 ...
<b>Debt held : A+B+C</b>	

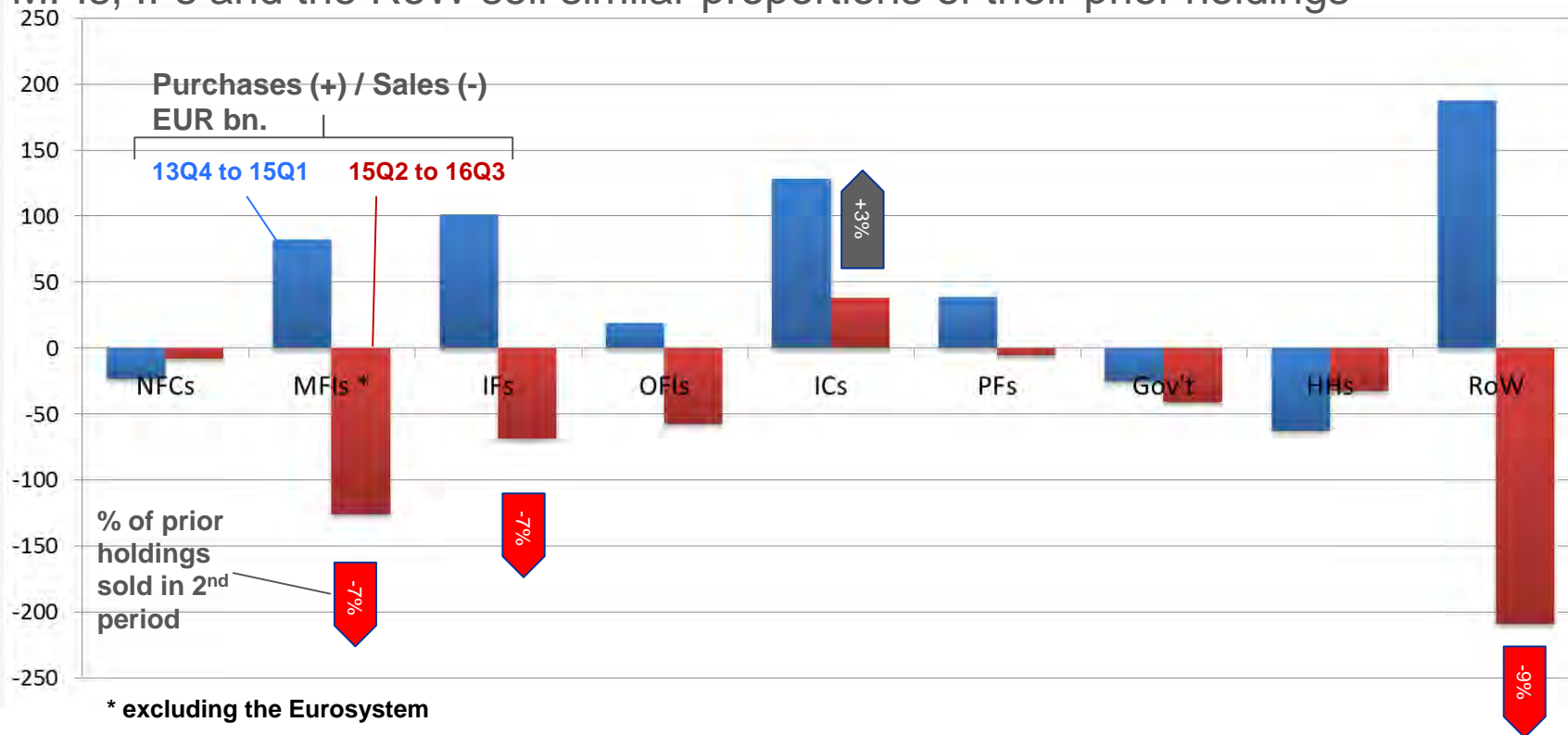


		Debtor (issuer)			
		Banks	Gov't	Corp.	Total held
Creditor (holder)	Banks	A	B	C	Banks: A+B+C
	Gov't	D	E	F	Gov't: D+E+F
	Corp.	G	H	I	Corp.: G+H+I
	<b>Total issued</b>	<b>Banks: A+D+G</b>	<b>Gov't: B+E+H</b>	<b>Corp.: C+F+I</b>	

## 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



**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

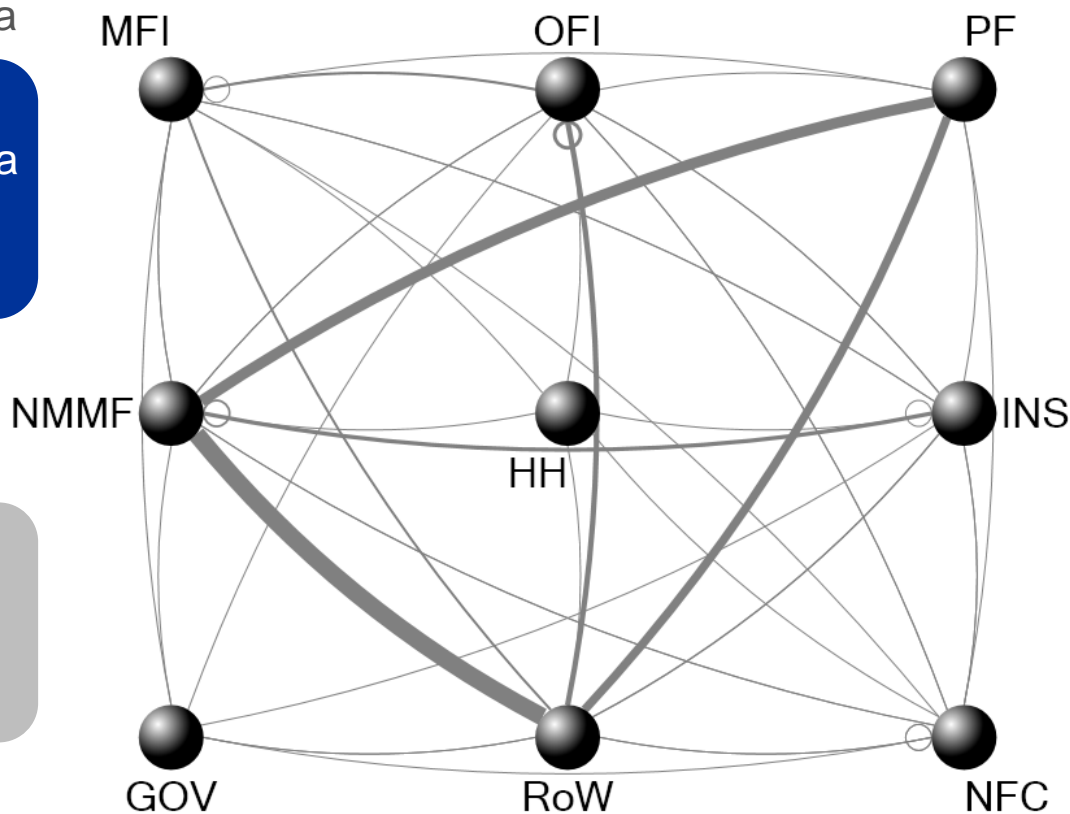
### Propagation effects of shocks with network theory tools ...

Flow-of-Funds data

Sectors interconnected via 'Who-to-whom' accounts

Initial shock

Bank capital depletion



Iterative algorithm

1<sup>st</sup> round: Market value of bank equity decreases

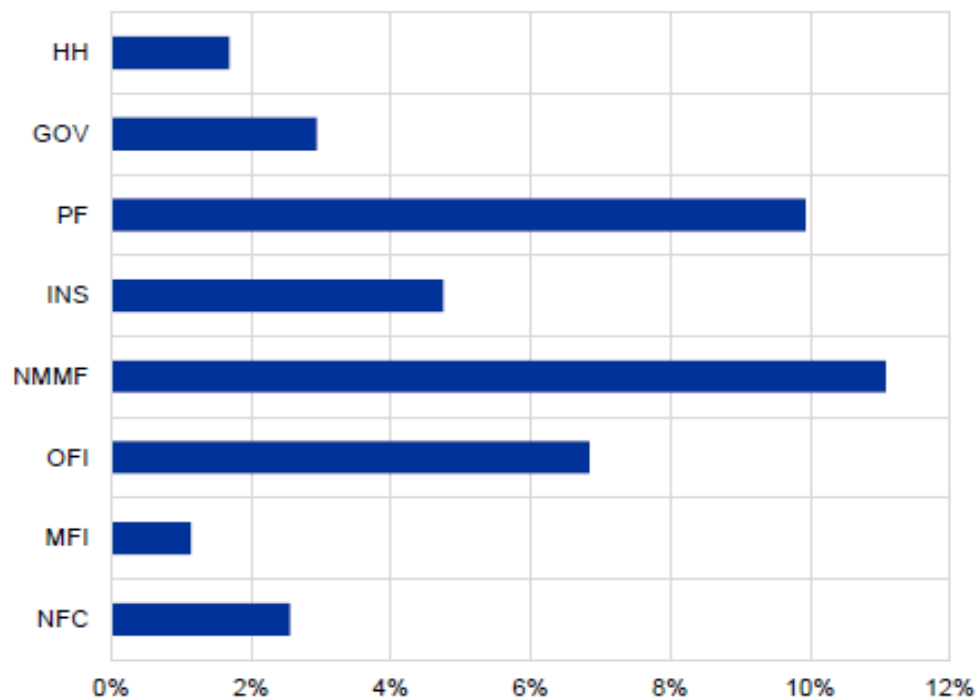
2<sup>nd</sup> and subsequent rounds (iterative): Loss of equity transmitted to sectors holding equity

## 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.

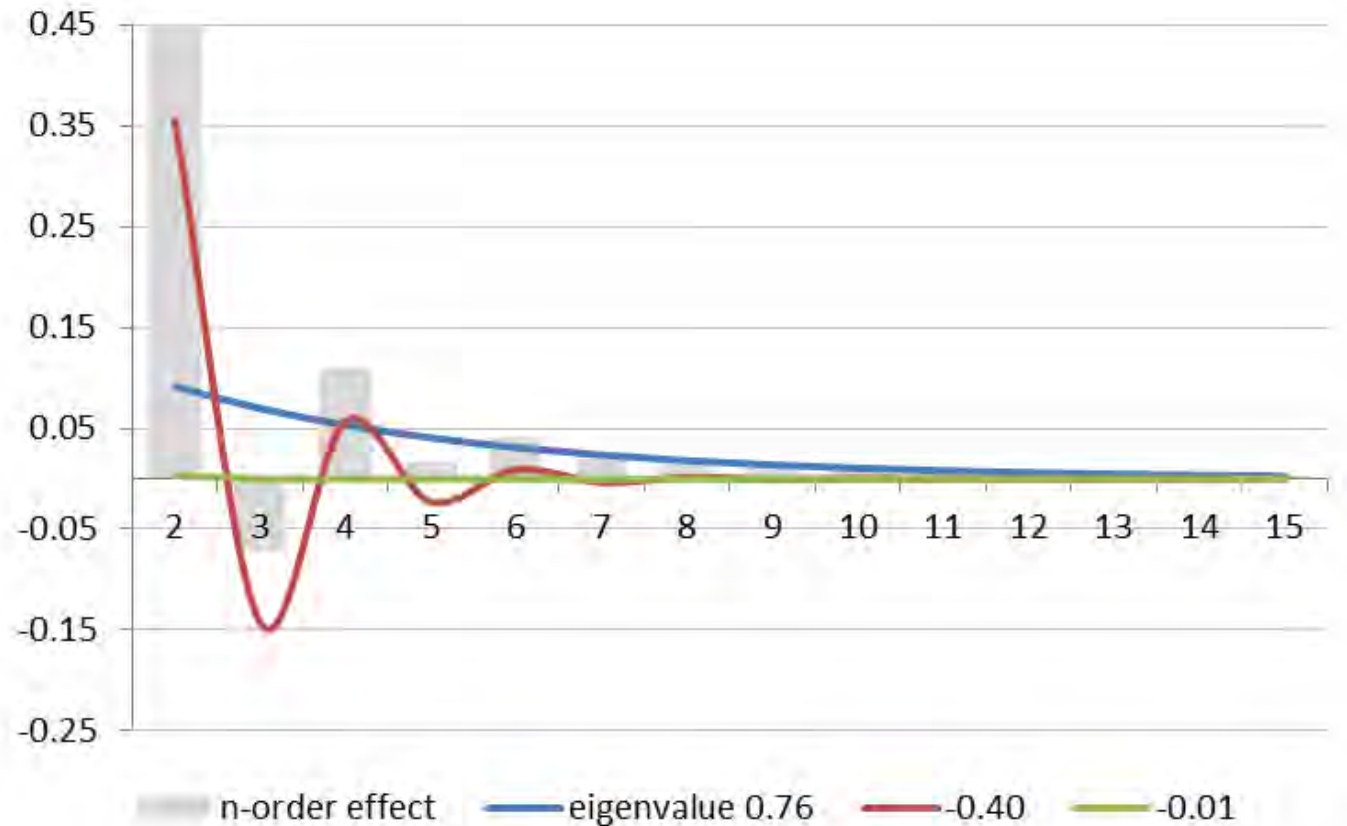


Note: NFC: non-financial corporations, MFI: monetary financial institutions, OFI: other financial institutions, NMMF: non-money market investment funds, INS: insurance companies, PF: pension funds, GOV: general government, HH: households, RoW: rest of the world.

## 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*

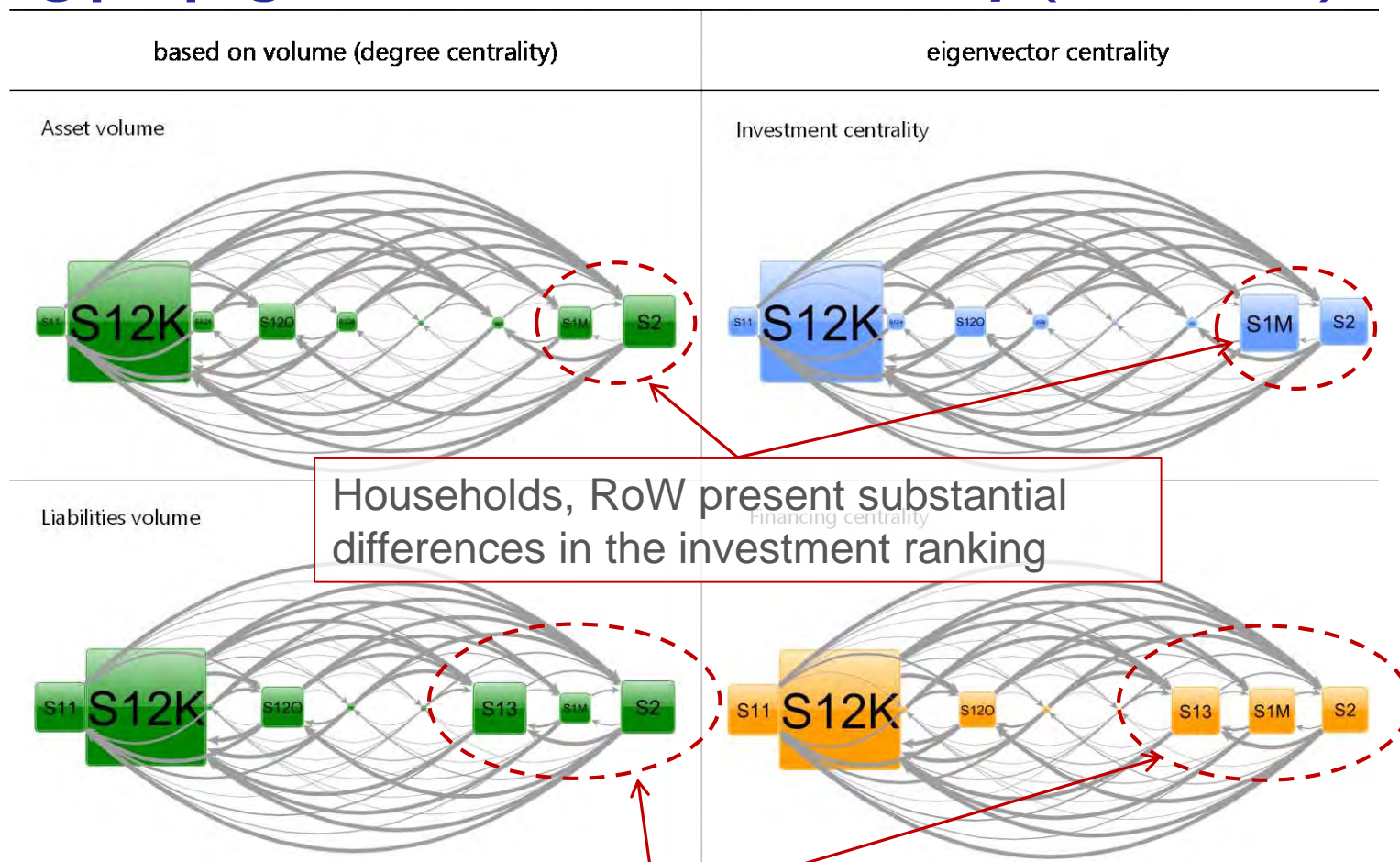


Girón, C et al (2018), "Propagation of Quantity Shocks in Who-to-whom Networks"  
Paper prepared for the 35th IARIW General Conference



## 2.2 Who-to-whom and interconnectedness

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

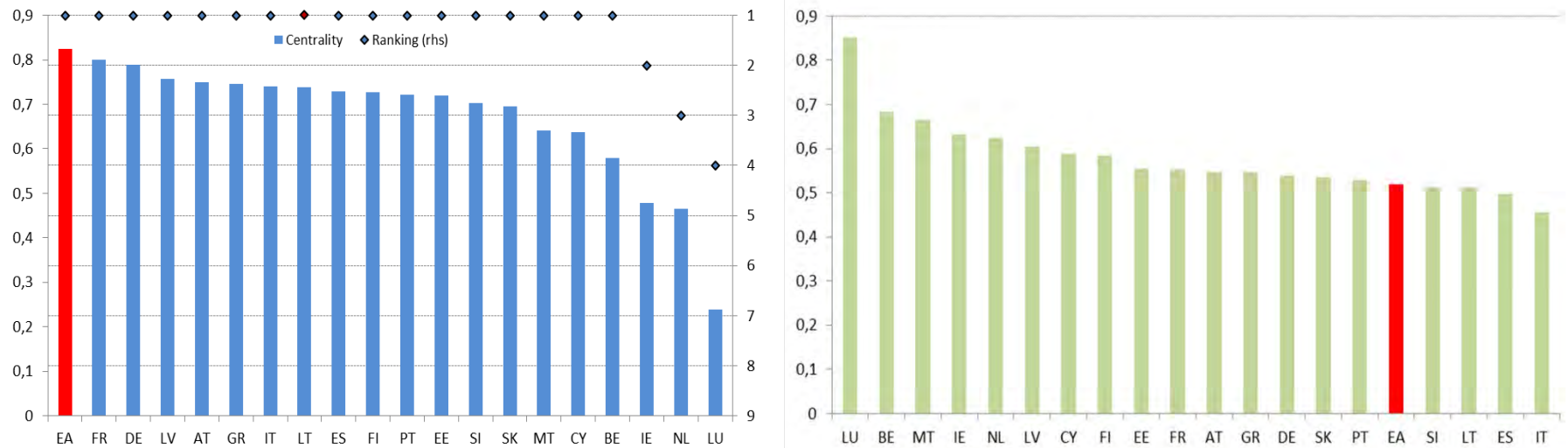


#### Notes:

- S11: non-financial corporations; S12K: MFIs (S121+S122+S123); S124: investment funds; S120: 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 financing ranking

### 3. Who-to-whom and interconnectedness

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



Units : left panel, MFI component in normalized Perron's eigenvector and ranking position; right panel: Perron's eigenvalue; **debt network/matrix** ; 16Q4

- ✓ 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

Girón C, Matas A (2017), "Interconnectedness of shadow banks in the euro area", in "Data needs and Statistics compilation for macroprudential analysis", IFC Bulletin No. 46.

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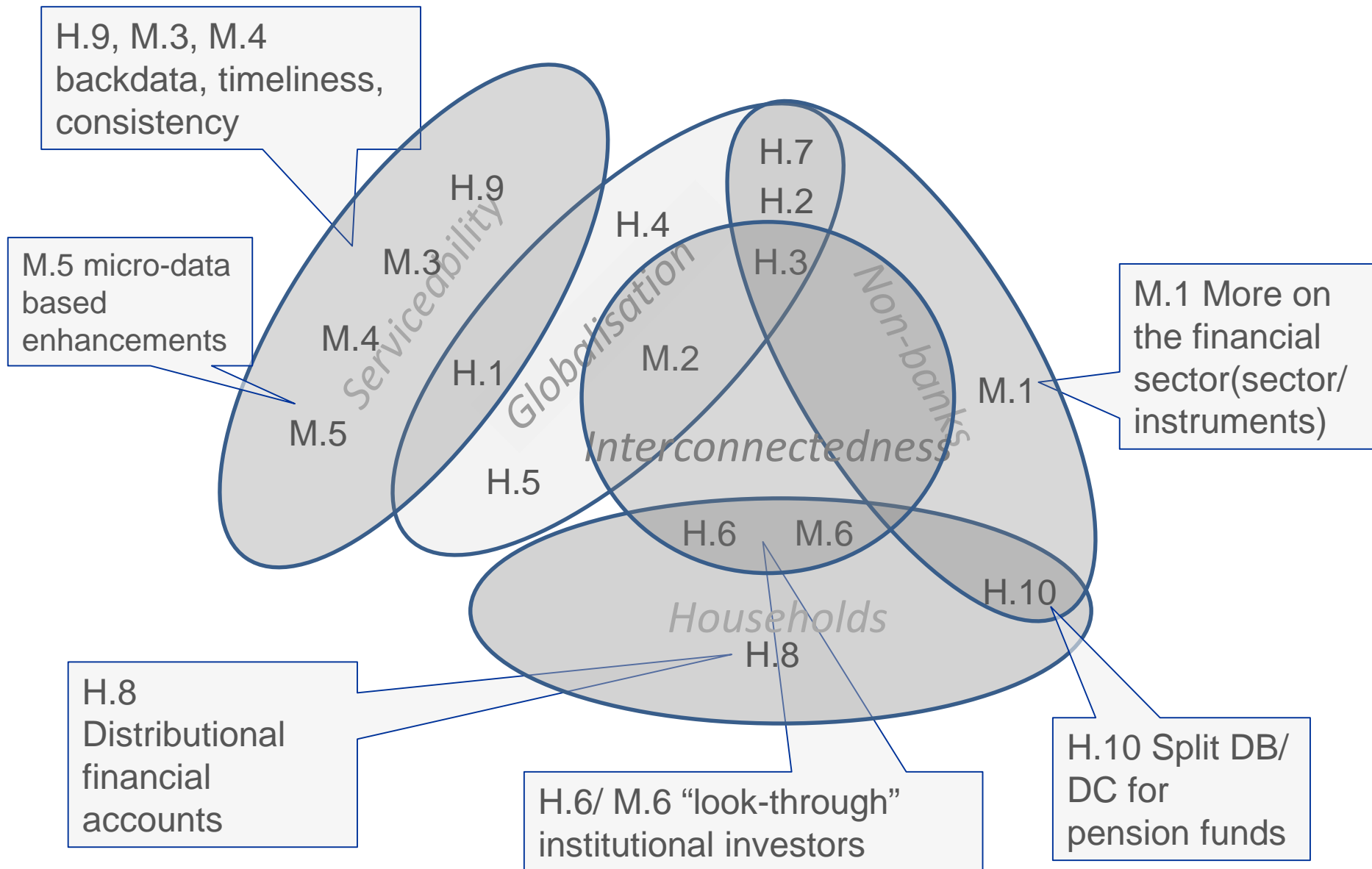
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### 3. Enhancing financial accounts uses: ESCB medium-term strategy



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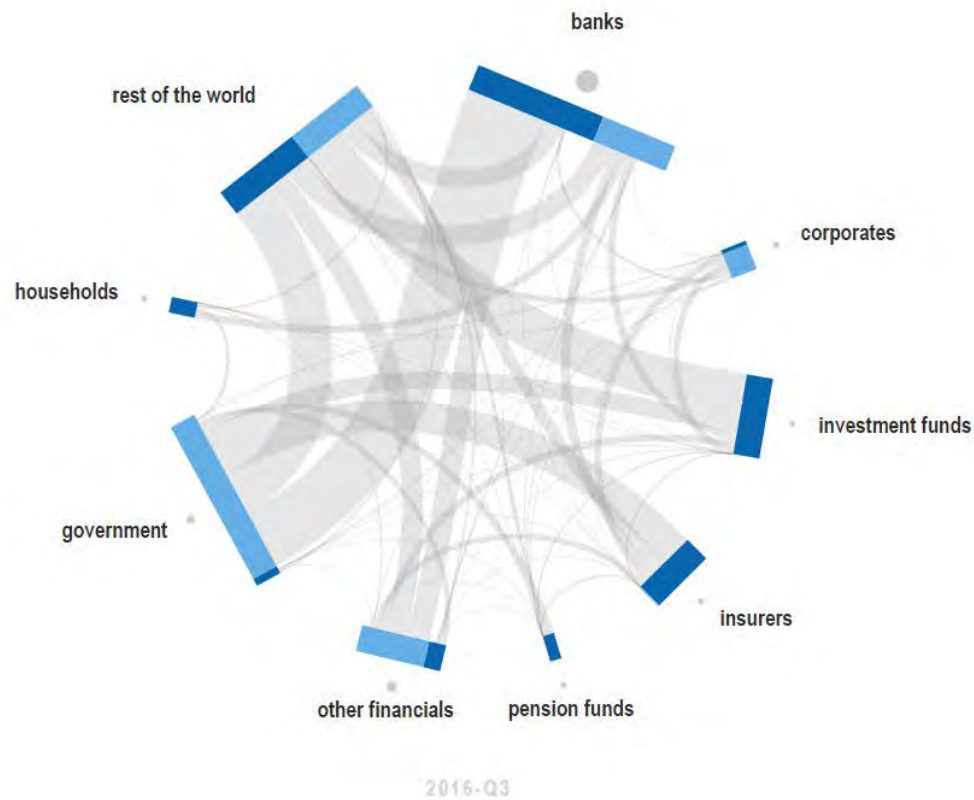
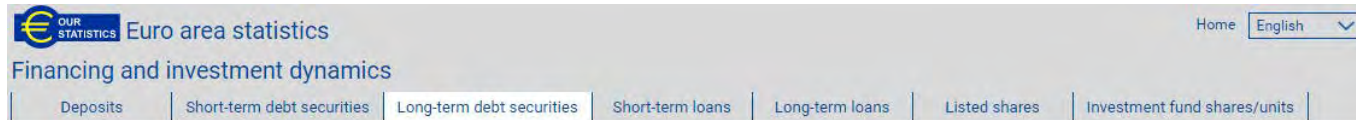
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### EAA Communication channels:

- 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



# Specific presentation of network charts



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**Thank you for your attention**  
**Questions and comments are welcome**

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