Shock Amplification in an Interconnected Financial System of Banks and Investment Funds

by Sydow, Schilte, Covi, Deipenbrock, Del Vecchio, Gábor Fukker, Gehrend, Gourdel, Grassi, Hilberg, Kaijser, Kaoudis, Mingarelli, Montagna, Piquard, Salakhova, Tente

Discussion by

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Federal Reserve Board

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[1] Disclaimer: The views expressed are those of the authors and do not necessarily represent those of the Federal Reserve Board of Governors or anyone in the Federal Reserve System.

Summary

- The paper stress-tests bank capital in an integrated model of banks and investment funds
- The multiple-institution approach studies how the interlinkages between institutions can amplify the same exogenous shocks
  - Additional one percentage point depletion of banks' capital ratios
- Authors have compiled an amazing database for the Euro area by linking several granular data sets, which can feed into many other research papers
- I will focus more on the conceptual issues and the mechanisms, because I think they are also relevant for jurisdictions other than the Euro area

One-institution framework

Securities	$\sum_j h_{i,j}$	4.4
Loans	$\sum_j l_{i,j}$	19.3
Other assets		7.5
Total		**31.2**

(a) Assets

Capital and reserves	k_i	2.6
Securities	$\sum_j h_{j,i}$	3.6
Deposits	$\sum_j l_{j,i}$	18.9
Other liabilities		6.1
Total		**31.2**

(b) Liabilities

Figure 1: Banks' modelled balance sheet (numbers given in trillions of euros). Source: ECB COREP and FINREP data.

Exogenous shocks

- Business-defaults shock affecting loan and bond portfolios
- Market shock affecting asset prices and securities portfolios

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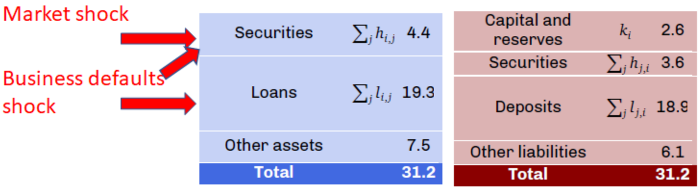

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Multiple-institution framework

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Business defaults & Market shocks

Deposits and claims		0.9
Securities	$\sum_j h_{i,j}$	12
Non-financial assets		0.4
Remaining assets		0.8
Total		**14.1**

(a) Assets

Investment funds shares	k_i	12.9
Loans	$\sum_j l_{j,i}$	0.5
Remaining liabilities		0.7
Total		**14.1**

(b) Liabilities

Figure 3: Investment fund's modelled balance sheet (in trillions of euros).

Multiple-institution framework

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Fire-sales Amplification via common securities holdings

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Redemption shock

Figure 3: Investment fund's modelled balance sheet (in trillions of euros).

Model also features interbank run-offs, but transmission is similar

Key insights

- Institutional vulnerabilities at non-banks can amplify losses to banks in stress-testing exercises
- The main channel of transmission is a market failure resulting in fire-sale externalities for commonly held assets between banks and non-banks
- Both points about *non-bank vulnerabilities* and *fire-sales externalities* are key so I will elaborate on them in my two comments

Asset classes and fire sales

- Are equity, fixed-income, and mixed mutual funds equally important for fire sales?
- The early papers on fire sales were done for equities and they find some evidence of price impact (Coval and Stafford, JFE 2007)
- Goldstein et al (JFE 2017) argues fragility applies to bond, not equity funds
- Falato (JF 2020, JME 2021) finds fire sales and fund instability for FI, while Pastor and Vorsatz (2020) shows that outflows were quiet for equity funds during COVID
- Suggest you differentiate between fire sales from fixed-income/mixed funds and equity funds
- Also consistent with FSB Nonbank monitoring group that concludes that equity funds do not introduce financial stability vulnerabilities

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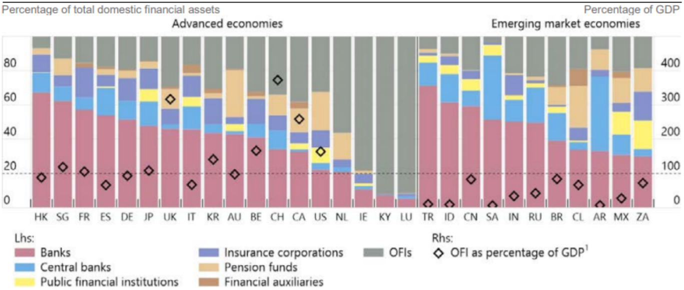
Types of non-banks

- Non-banks are diverse institutions with different business models and different susceptibility to financial vulnerabilities
- Paper only considers mutual funds, yet it might be important to also consider other institutions that dampen the same vulnerabilities
- Timmer (JFE 2018): insurance companies and pension funds act countercyclically mitigating fire sales



Source: FSB

Conclusion

- Introducing non-bank institutional vulnerabilities in bank stress tests is nice and in line with macro-financial amplification
- Yet diversity of nonbanks and differential effect on market failures, such as fire sales, may require a more detailed approach
- Are fire-externalities the only sizeable source of market failure from non-banks we should worry about in bank stress tests?