Andrea Deghi

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Work Experience

2018 – present **Monetary and Capital Markets Department (MCM/GS), International Monetary Fund**
Financial Sector Expert

- Coauthored "Bank Dollar Funding and Financial Stability" chapter in the Oct 2019 Global Financial Stability Review (GFSR)
- Coauthored "Downside Risks to House Prices" chapter in the Apr 2019 Global Financial Stability Review (GFSR)
- Contributed to the construction of financial condition indices and asset pricing models currently used in the Global Financial Stability Review (GFSR)
- Analyzed systemic risk in the Hong Kong housing market as part of the Hong Kong SAR FSAP team

2017 – 2018 **Systemic Risk and Financial Institutions, European Central Bank**
Research Analyst/Expert

- Quantified the effects of negative interest rates on bank profitability and systemic risk
- Identified the determinants of bank mergers through an endogenous matching model
- Analyzed the effects of loan market concentration on firm loan rates

2016 -2017 **Financial Stability Division, European Central Bank**
PhD Trainee

- Estimated the effects of negative interest rates on bank profitability and systemic risk
- Applied a matching model to identify the determinants of bank mergers
- Quantified the effects of loan market concentration on firm loan rates

2015 – 2016 **Research Department, Deutsche Bundesbank**
Research Assistant

Education

2013 – 2017 **University of Florence, University of Pisa and University of Siena (Joint Pogram)**
Ph.D., Department of Economics and Statistics

2009 – 2013 **University of Siena**
B.A. and M.S.c. in Economics, summa cum laude

Research Interests

Financial Intermediation, Monetary Policy, Systemic Risk, Interbank Networks

References

Paul Hiebert, Head of Division
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European Central Bank
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Thomas Vlassopoulos, Head of Division
Monetary Analysis Division
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Published Papers

Portfolio Diversification and Systemic Risk in Interbank Networks
Journal of Economic Dynamics and Control, 82, 96-124, 2017
Joint with Stefano Battiston (University of Zurich) and Paolo Tasca (Deutsche Bundesbank)

This paper contributes to a growing literature on the ambiguous effects of risk diversification. In our model, banks hold claims on each other's liabilities that are marked-to-market on the individual financial leverage of the obligor. The probability of systemic default is determined using a passage-problem approach in a network context and banks are able to internalize the network externalities of contagion through their holdings. We study the optimal diversification strategy of banks in the face of opposite and persistent economic trends that are ex-ante unknown. We find that the optimal level of risk diversification may be interior or extremal depending on banks' exposure to external assets and that individual incentives may favor a banking system that is over-diversified with respect to the social optimum.

Working Papers

Predicting Downside Risks to House Prices and Macro-Financial Stability
Joint with Mitsuru Katagiri (BoJ), Sohaib Shahid (IMF), and Nico Valckx (IMF)

This paper predicts downside risks to future real house price growth (house-prices-at-risk) in 32 advanced and emerging market economies. Through a macro-model and predictive quantile regressions, we show that current house price overvaluations, excessive credit growth, and tighter financial conditions jointly forecast higher house-prices-at-risk up to three years ahead. House-prices-at-risk (HaR) can in turn predict future growth at risk and financial crises. We also investigate and propose policy solutions for preventing the identified risks. We find that overall, a tightening of macroprudential policy is the most effective at curbing downside risks to house prices, whereas a loosening of conventional monetary policy reduces short term downside risks only in advanced economies.

A composite index of systemic risk
Joint with Peter Welz (ECB), Dawid Zochowsky (ECB)

This paper estimates the predictive power of systemic risk buildup on the probability of future macroeconomic downturns. We first put forward a broad range of individual indicators to capture fluctuations in non-financial imbalances, financial vulnerability, risk appetite and systemic risk. To efficiently aggregate information across indicators, we then construct a composite index of systemic risk through semiparametric dimension reduction. Increases in the composite index robustly forecast future drops in the distribution of economic activity. A one standard deviation increase in the index predicts that the 20th percentile of the GDP growth shock distribution shifts downwards by 71

The Effects of Negative Interest Rates on Interbank Markets
Joint with Yiming Ma (Stanford GSB) and Livia Polo Friz (ECB)

We show that the effects of negative interest rates are amplified through the unsecured interbank market. As retail deposit rates are floored at zero while asset returns track policy rates, reliance on retail deposits shrinks net returns, lowers bank capital and raises the cost of external financing. Banks relying more heavily on retail deposits face stronger downward pressure on net interest margins and reduce lending to other banks in the unsecured money market by more. However, deposit reliant banks also tend to be more profitable and better capitalised to begin with, alleviating the net adverse impact of negative rates.

Liquidity in Times of Distress: The Effect of Interbank Network Structure

This paper identifies the importance of market power in the interbank market during times of distress. We show that in the aftermath of the 2008 financial crisis, lending and borrowing in the Italian overnight unsecured interbank market became more sensitive to banks' network position. We fit the observed network to a core-periphery structure and find that highly connected core banks were able to selectively charge higher interest rates on loans to and pay lower interest rates on loans from sparsely connected periphery banks over the course of the crisis. We use link level variation to verify that the differences stem from banks' network contingent market power. This demonstrates banking sector interconnectedness as a source of market illiquidity and sheds light on the effective design of central bank liquidity policy.

A Model of Network Formation for the Overnight Interbank Market
Joint with Mikhail Anufriev (University of Technology Syndey), Valentyn Panchenko (University of New South Wales) and Paolo Pin (Bocconi University)

We introduce an endogenous network formation model of the interbank overnight lending market. Banks are motivated to meet the minimum reserve requirements set by the Central Bank but their reserves are subject to random shocks. To adjust their expected end-of-the-day reserves, banks enter the interbank market, where borrowers decrease their expected cost of borrowing with the Central Bank, and lenders decrease their deposits with the Central Bank in an attempt to obtain a higher interest rate from the interbank market while facing counter-party default risk. In this setting, we show that a financial network arises endogenously, exhibiting a unique giant component which is connected but bipartite in lenders and borrowers. The model reproduces features of trading decisions observed empirically in the Italian e-MID market for overnight interbank deposits.

Work in Progress

Estimating the Reversal Rate of Monetary Policy
joint with Yiming Ma (Stanford GSB)

The Determinants of Banking Consolidation in the EU: A Critical Review
Joint with Martin Bijsterbosch (ECB) and Marco Lo Duca (ECB)

Awards

- Research Grant, FET Project Financial Systems Simulation and Policy Modelling (SIMPOL) (2015)
- Pegaso PhD Scholarship (Top 5 PhD Candidates) (2013-2016)
- Italian Ministry of Foreign Affairs Scholarship (2012)
- DSU scholarship (2007-2010)

Visiting Positions

- Stanford GSB (Spring 2017)
- University of Zurich (Spring 2015)
- University of New South Wales Business School (Fall 2014)
- Isaac Newton Institute for Mathematical Sciences Cambridge University (Winter 2014)

Programming

Matlab, Python, Stata, Mathematica, R, Bloomberg

Personal Information

D.O.B.	Oct 3, 1988
Citizenship	Italian
Languages	Italian (Native), English (Fluent), German (Intermediate), French (Elementary)

Last updated: October 9, 2019