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RESEARCH FIELDS
Primary: Information Economics, Macroeconomics, Financial Economics
Secondary: Economics of Technological Change, Asset Pricing, Household Finance, Industrial Organization

EDUCATION

2014-2020	Ph.D. in Economics	**New York University, Stern School of Business**
2012-2014	M.Phil. in Economics	**University of Oxford, Nuffield College**
2007-2010	B.A. in Economics (with Honors)	**University of Chicago**

DISSERTATION
Title: "Information Frictions in Macroeconomics and Finance"
Dissertation Chairs: Professors Laura Veldkamp and Thomas Philippon
Expected Completion: May 2020

REFERENCES

Professor Laura Veldkamp	lv2405@columbia.edu (+1) 212-854-5553	Columbia Graduate School of Business, 3022 Broadway, Uris 421, New York, NY 10027
Professor Thomas Philippon	tphilipp@stern.nyu.edu (+1) 212-998-0490	NYU Stern School of Business, 44 West 4th Street, KMC 9th Fl, New York, NY 10012
Professor Venky Venkateswaran	vvenkate@stern.nyu.edu (+1) 213-255-0784	NYU Stern School of Business, 44 West 4th Street, KMC 7th Fl, New York, NY 10012
Professor Thomas Sargent	thomas.sargent@nyu.edu (+1) 212-998-8900	New York University, 19 West 4thStreet, Economics, 6th Fl, New York, NY 10012

JOB MARKET PAPER: "Who Benefits from Innovations in Financial Technology?"

Abstract: Financial technology affect both efficiency and equity in the stock-market. The impact is non-trivial because several key innovations have altered multiple dimensions of investors' opportunity sets at the same time. For example, better and faster computing has made it (1) cheaper for retail investors to participate, and (2) to find funds that meet their needs, but also (3) cheaper for sophisticated investors to learn about asset returns. Some experts believe this may increase financial inclusion, others worry about possible anti-competitive effects that can lead to a more unequal wealth distribution. To settle this debate, I build a theoretical model of intermediated

trading under asymmetric information that allows me to study each innovation in isolation. In the model, these changes have opposing implications for financial inclusion, competition, and inequality. The final outcome depends on which one dominates. Interpreting the data through the lens of my model suggests that the gains from financial technology were accruing to low-wealth investors before the 2000s, but they are now accruing to high-wealth investors. The reason this is happening is that even if investors have access to the equity premium through cheap funds, improvements in financial technology disproportionately benefit informed, big data players. This reduces the participation rate of low-wealth investors, improves price informativeness, enlarges (but consolidates) the active investment management industry and amplifies capital income inequality.

Presented at: 2019 14th Macro-Finance Society Conference (USC Marshall), The Future of Financial Information (Stockholm U); AFA Poster Session (ASSA Atlanta); BIS Research Seminar; YES Young Economists Student Conference (Columbia University), NYU; NYU Stern;
2018 Chicago Booth Asset Pricing Conference (poster); IMF; NYU; Macro-Finance Modeling Summer Session for Young Scholars (June 2018), Wharton Women in Business (April 2018);

PUBLICATIONS

"Big Data and Firm Dynamics," with Maryam Farboodi, MIT Sloan, Thomas Philippon, NYU Stern, and Laura Veldkamp, Columbia Business School, published in ***American Economic Review, Papers and Proceedings***, 2019

"The Economics of Big Data and Artificial Intelligence," with T. Philippon, NYU Stern, published in ***International Finance Review***, 2019

"Is the Macroeconomy Locally Unstable and Why Should We Care? Comment," with Laura Veldkamp, Columbia Business School, published in ***NBER Macroeconomics Annual***, 2017

"Macro-prudential Policies to Mitigate Financial System Vulnerabilities," with Stijn Claessens, Bank of International Settlements and Swati Ghosh, World Bank, published in ***Journal of International Money and Finance***, 2014

"Does National Culture Affect Firm Risk-Taking?" published in ***Journal of Cultural Economics***, 2013

POLICY PAPERS

"Inflation Expectations and Commodity Prices in the United States," with Oya Celasun, International Monetary Fund and Lev Ratnovski, European Central Bank, published in ***US Article IV, IMF Working Paper***, 2012

"Dealing with the Challenges of Macro Financial Linkages in Emerging Markets, " with Stijn Claessens, Bank of International Settlements and Swati Ghosh, World Bank, published in ***World Bank Book,*** 2014

WORK IN PROGRESS

"Choosing Not to Pay: How Housing Amplified the Great Recession," R&R at ***Journal of Money and Central Banking***

"Big Data, Entry Costs and Markups," with Paul Dolfen, Stanford University

"Public Information Disclosure in Financial Networks"

AWARDS, FELLOWSHIPS, GRANTS

2018-2019	*Macro-Financial Modeling Dissertation Grant*, Becker Friedman Institute, Chicago, IL
2018	*Research Grant*, Facebook & Internet Association, New York, NY
2014-2019	*Doctoral Fellowship*, NYU Stern, New York, NY
2012-2014	*Academic Studentship*, Nuffield College, University of Oxford, Oxford, United Kingdom
2012	*President's Prize for the Best Student Paper*, Association of Cultural Economics, Kyoto, Japan
2007-2010	*Dean's List for Academic Performance*, University of Chicago, Chicago, IL
2007-2010	*Academic Studentship*, University of Chicago, Chicago, IL
2007-2011	*National Merit Academic Scholarship*, Romanian Government and UNDP, Bucharest, Romania

RESEARCH EXPERIENCE

Spring 2019	*PhD Fellow*, in Monetary and Economics Department, *Bank of International Settlements*
Summer 2018	*FIP Graduate Program*, European Department, *International Monetary Fund*
2016-2017	*Research Assistant* for Professor Thomas Philippon, *NYU Stern Finance*
2015-2018	*Research Assistant* for Professor Laura Veldkamp, *NYU Stern Economics*
Fall 2016	*PhD Research Intern*, Research Department, *Norwegian Central Bank*
Summer 2013	*Research Intern*, OCE, *European Bank for Reconstruction and Development*
2010-2012	*Research Assistant*, Macro-Finance Unit, Research Department, *International Monetary Fund*
2009-2010	*Research Assistant* for Professor Boaz Keysar, Psychology Department, *University of Chicago*

TEACHING EXPERIENCE

2017-2019	*Teaching Adjunct*, Department of Economics, NYU Stern School of Business. Led recitations for *Microeconomics (UG)* for Profs. Michael Dickstein and Walker Hanlon
2017-2018	*Teaching Adjunct*, Department of Economics, NYU Stern School of Business. Led recitations for *Microeconomics (UG)* for Profs. Luis Cabral and Simon Bowmaker
Spring 2016	*Teaching Assistant,* Department of Economics, NYU Stern School of Business. Led office Hours for *Information Theory (G, UG)* for Profs. Laura Veldkamp and Venky Venkateswaran
Fall 2015	*Teaching Fellow,* Department of Economics, NYU Stern School of Business. Led recitations for *Advanced Macroeconomics (MBA)* for Profs. Thomas Sargent and Lars Ljungqvist

INVITED WORKSHOPS

2019, 2018	NBER Doctoral Workshop on the Economics of Artificial Intelligence in Toronto, Canada
2018, 2016	Macro-Financial Modeling Summer Session Fellowship in Cape Cod, United States
2016	Norges Bank Doctoral Workshop on Housing and Financial Stability in Oslo, Norway
2015	MIT-FARFE Capital Markets Workshop in Cambridge, United States
2014	Royal Economic Society Macroeconomics Meeting in Birmingham, United Kingdom

PRESENTATIONS (Other than job market paper)

2019:	European Commission.
2018:	Chicago Booth Asset Pricing (poster), NYU Student Macro Lunch, IMF, , MFM Summer Session (poster), Sargent Reading Group
2017:	Stern Friday Seminar, Sargent Reading Group, Gertler-Midrigan Reading Group
2016:	Norges Bank, Sargent Reading Group, Gertler-Midrigan Reading Group
2015:	Sargent Reading Group; Gertler-Midrigan Reading Group
2013:	Oxford Gorman Research Workshop, EBRD

REFEREEING

Journal of Economic Theory, Journal of Monetary Economics, Journal of Financial Economics, Journal of International Money and Finance, Journal of Money and Central Banking, Journal of Cultural Economics, Economic Dynamics

PROGRAMMING

Proficient: Matlab, Dynare, Stata, EViews, OxMetrics, LaTeX; Familiar: Mathematica, Python, Julia

LANGUAGES

Romanian (native), English (proficient), French (proficient, DALF C1), Spanish (advanced)

OTHER ABSTRACTS

"Big Data and Firm Dynamics", with Maryam Farboodi, MIT Sloan, Thomas Philippon, NYU Stern, and Laura Veldkamp, Columbia Business School, published in the **American Economic Review P&P**, May 2019

Abstract: We study a model where firms accumulate data as a valuable intangible asset. Data accumulation affects firms' dynamics. It increases the skewness of the firm size distribution as large firms generate more data and invest more in active experimentation. On the other hand, small data-savvy firms can overtake more traditional incumbents, provided they can finance their initial money-losing growth. Our model can be used to estimate the market and social value of data.

[Presented at: AFA 2019 (Atlanta); Workshop on the Economics of AI and Big Data (European Comission, Toulouse School of Economics); Research Meeting 2019 (Bank of International Settlements), and others by co-authors]

"Is the Macroeconomy Locally Unstable and Why Should We Care? A Comment", with Laura Veldkamp, Columbia Business School, published in **NBER Macroeconomics Annual**, 2017

In this short comment, we discuss the paper "Is the Macroeconomy Locally Unstable and Why Should We Care?" by Beaudry, Galizia and Portier. We discuss the origins of economic fluctuations and what gives rise to limit cycles. We comment on ways of empirically identifying the presence of limit cycles and limitations. Lastly, we explain the difference between limit cycles and chaos theory.

[Presented at: NBER Economic Fluctuations and Growth Meeting (Cambridge, MA).]

"The Economics of Big Data," with Thomas Philippon, NYU Stern, published in **International Finance Review**, 2019

Abstract: We analyze the expansion of Big Data and Artificial Intelligence technologies from the perspective of economic theory. We argue that these technologies can be viewed from three perspectives: (i) as an intangible asset; (ii) as a search and matching technology; (iii) as a forecasting technology. These points of view shed light on how Big Data is likely to affect matching between firms and consumers, productivity growth, price discrimination, competition, inequality among firms and inequality among workers.

"Macro-prudential Policies to Mitigate Financial System Vulnerabilities**,"** with Stijn Claessens, BIS and Swati Ghosh, World Bank), published in **Journal of International Money and Finance**, Vol. 39, Dec 2013, pp. 153–185.

Abstract: Macro-prudential policies aimed at mitigating systemic financial risks have become part of the policy toolkit in many emerging markets and some advanced countries. Their effectiveness and efficacy are not well-known, however. Using panel data regressions, we analyze how changes in balance sheets of some 2800 banks in 48 countries over 2000–2010 respond to specific policies. Controlling for endogeneity, we find that measures aimed at borrowers – caps on debt-to-income and loan-to-value ratios, and limits on credit growth and foreign currency lending – are effective in reducing leverage, asset and noncore to core liabilities growth during boom times. While countercyclical buffers (such as reserve requirements, limits on profit distribution, and dynamic provisioning) also

help mitigate increases in bank leverage and assets, few policies help stop declines in adverse times, consistent with the ex-ante nature of macro-prudential tools.

[Presented at: Research Seminar 2013 (European Bank for Reconstruction and Development); Gorman Doctoral Student Workshop 2013 (University of Oxford); Research Seminar 2012 (International Monetary Fund), ECB 2014, and many others by co-authors.]

"Effects of Culture on Firm Risk-Taking: A Cross Country and Cross Industry Analysis," published in **Journal of Cultural Economics,** April 2013, Volume 37, Issue 1, pp 109-151.

This paper investigates the effects of national culture on firm risk-taking, using a comprehensive dataset covering 50,000 firms in 400 industries in 51 countries. Risk-taking is found to be higher for domestic firms in countries with low uncertainty aversion, low tolerance for hierarchical relationships, and high individualism. Domestic firms in such countries tend to take substantially more risk in industries which are more informationally opaque (e.g., finance, mining, oil refinery, IT). Risk-taking by foreign firms is best explained by the cultural norms of their country of origin. These results hold even after controlling for legal constraints, insurance safety nets, and economic development.

[Presentations at: ACEI Economics of Culture Conference 2012 (Kyoto U); Research Seminar 2012 (IMF).]

"Big Data, Entry Costs and Markups," with Paul Dolfen, Stanford University

Using a survey of German firms, we first document that firms that use big data technologies grow larger, faster, and charge higher markups. We then introduce data acquisition technologies in an otherwise standard Dixit-Stiglitz monopolistic competition model to analyze the impact of data on industry dynamics, competition and aggregate volatility. In our framework, data is information, which is distinct from technology, and accumulated data is a valuable asset. Data helps firms predict the quality of the good produced. Firms obtain data in two ways: 1) they automatically generate data as a by-product of their economic activity (i.e. continuous learning-by-doing), and 2) they can also endogenously acquire private information at a cost (i.e. active learning) from data brokers. We then analyze the impact of data on firms' profits and markups.

"Choosing Not to Pay: How Housing Amplified the Great Recession," revise and resubmit at **Journal of Money and Central Banking**

This paper studies the role of the financial sector in the transmission of financial shocks from indebted households to the real economy. I develop a tractable general equilibrium model with housing, collateralized mortgages, endogenous default and credit constraints, that does not require a super-computer for solving. The model is generally successful at matching key macroeconomic dynamics, while being computationally simple. Default is necessary for replicating the subprime crisis and the Great Recession. When default risk increases, the economy exhibits a credit crunch with helps explain housing market fluctuations. Without endogenous mortgage default, one cannot match the fall in consumption, housing investment, house prices and GDP. Yet, endogenous default alone cannot match the first two moments in house prices and residential investment without generating excessive volatility in consumption. One way to eliminate this issue is to have long-term mortgages instead of one-period loans.

[Presented at: Norges Bank 2016 Workshop on Housing and Financial Stability; NYU Stern Friday Seminar 2017.]

“Public Information Disclosure in Financial Networks”

I introduce public information in a learning model over a general banking network to assess the equilibrium impact of public disclosure practices such as stress tests and ratings. Banks decide their investment strategy, to invest or not invest, in a setting where the state of the world is unknown. The decision is based on two different signals: 1) a public signal from the regulator about the state of the world, and 2) a social belief formed from observing the past actions of a bank's counter-parties. I characterize pure strategy Bayesian equilibria for arbitrary deterministic and stochastic networks and characterize the conditions under which there will be asymptotic learning (convergence in probability to the right strategy).

“Inflation Expectations and Commodity Prices in the United States, “with Oya Celasun, IMF and Lev Ratnovski, IMF), published as **U.S. Article IV 2011, IMF Working Papers**, 89/2012

U.S. monetary policy can remain extraordinarily accommodative only if longer-term inflation expectations stay well-anchored, including in response to commodity price shocks. We find that oil price shocks have a statistically significant, but economically small impact on longer-term inflation compensation embedded in U.S. Treasury bonds. The estimated effect is larger for the post-crisis period, and robust to controlling for measures of liquidity risk premia. Oil price shocks are also correlated with the variance of longer-term inflation expectations in the University of Michigan Survey of Consumers in the post-crisis period. These results are not attributable to looser monetary policy - oil price increases were associated with expectations of a faster monetary tightening after the crisis. Overall, the findings are consistent with some impact of commodity prices on long-term inflation expectations and/or on inflation rate risk.

[Presented at: IMF Macro-Finance Unit Research Seminar 2012, and others by co-authors.]