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(Updated October 2023)

Placement Director: Professor Jenna Stearns - jestearns@ucdavis.edu - +1(503)-702-3031

Education

Ph.D. in Economics, University of California, Davis, 2024 (expected).

M.A. in Economics, with honors, Pontificia Universidad Javeriana, 2016.

B.A. in Economics, Pontificia Universidad Javeriana, 2012.

References

Professor Òscar Jordà (Thesis Chair)

Department of Economics

University of California, Davis

Federal Reserve Bank of San Francisco

E-mail: ojorda@ucdavis.edu

Professor Alan M. Taylor

Department of Economics

University of California, Davis

E-mail: amtaylor@ucdavis.edu

Asst. prof. Sanjay Singh

Department of Economics

University of California, Davis

Federal Reserve Bank of San Francisco

E-mail: sjrsingh@ucdavis.edu

Asst. prof. Nicolas Caramp

Department of Economics

University of California, Davis

E-mail: ncaramp@ucdavis.edu

Work experience

Ph.D. Intern (Summer 2022).

Bank of Finland, Helsinki, Finland.

Research Assistant (Summer 2022).

Professors Katherine Eriksson and Gary Richardson, University of California.

Economist (July 2012 - July 2018).

Macroeconomic Programming and Inflation Department, Colombian Central Bank, Bogotá, Colombia.

Research Assistant (July 2011 - June 2012).

Macroeconomic Programming and Inflation Department. Colombian Central Bank, Bogotá, Colombia.

Research

Primary field: Macroeconomics and Monetary Policy

Secondary fields: Economic Growth and Aggregate Productivity, Time-Series and Panel Models, Technological Change., Economic History., International Economics.

Job Market Paper

Vulnerable technological adoption

I explore the lasting consequences of large productivity shocks, examining how they impact technological adoption. First, I develop a model in which firms face heterogeneous fixed costs of implementing and operating a technology, which they can adopt or abandon. Only large shocks can affect the share of adopters, and these impacts are bounded in the long-run. To validate the model's predictions, I employ semi-nonparametric local projections on a panel comprising 14 technologies across 18 countries, spanning 112 years. This allows to detect non-linearities without any a priori functional form assumptions. Estimates are closely aligned with the model predictions. Using a version of the model calibrated to the empirical estimates, I show that subsidizing technology operational costs can lead to significant welfare improvements, averting harm to the economy's productive potential.

Working papers

Hysteresis, Endogenous Growth, and Monetary policy

Nominated best paper award, Winter School 2021, CDE and Econometric Society.

I provide evidence of substantial hysteresis (i.e., a situation in which temporary shocks have long-run effects) from monetary shocks on two sources of endogenous growth; human capital and technological adoption. This contribution is the first to test for the presence of this phenomenon in direct measures of the supply-side potential of economies, instead of indirect measures, e.g., TFP. To estimate the effects of exogenous monetary policy shocks, I improve on the trilemma identification by incorporating a mean-unbiased instrumental variable estimator. Results show substantial hysteresis in both human capital and technological adoption. Importantly, these are found to be asymmetric, as only contractionary shocks result in long-lasting responses. I evaluate the aggregate importance of monetary hysteresis with a growth accounting exercise. Across the 17 countries in the sample, the accumulated average cost of monetary hysteresis ranges between 1.2 and 9.6% of TFP, for human capital and the adoption of electricity, respectively.

Work in progress

Monetary policy, sectoral reallocation and long-run growth

With Michaela Elfsbacka-Schmöller, Ph.D. Internship at the Bank of Finland, 2022.

In this paper, we study monetary policy under asymmetric shocks which shift resources between sectors, taking into account differential sectoral contributions to aggregate total factor productivity (TFP) growth. Previous work on sectoral reallocation has not yet accounted for a key property: sectors have heterogeneous growth rates of TFP with direct effects on macroeconomic dynamics and monetary policy. In particular, reallocation between sectors with heterogeneous growth affects endogenous growth of aggregate TFP and thus potential output and, moreover, inflationary pressures through marginal costs. To address this gap in the literature, we develop a multi-sector New Keynesian model with endogenous growth and heterogeneous sectoral contributions to long-run growth. Specifically, we contribute to the literature by (i) examining the role of nominal rigidities under frictional reallocation, (ii) investigating the role of monetary policy under various asymmetric shocks, and (iii) studying the long-run impact of reallocation episodes. Our findings suggest that the reallocation-induced TFP response plays a critical role in the conduct of monetary policy, while monetary policy, in turn, shapes the reallocation process and underlying macroeconomic adjustments.

Publications

Determinants of housing bubbles' duration in OECD countries

With Gómez-Gonzalez, J., and Sanin-Restrepo, S., *International Finance*, Vol. 21(2), 140-157, 2018.

Finance Neutral Potential Output

Economic Systems, Vol. 41(3), 389-407, 2017.

Mind the Gap: Computing Finance-Neutral Output Gaps in Latin-American Economies

With Tenjo, F., Gómez-Gonzalez, J., Ojeda, J., and Jaulin, O., *Economic Systems*, Vol. 40(3), 335-518, 2016.

Credit and Business Cycles: An Empirical Analysis in the Frequency Domain

With Gómez-Gonzalez, J., Gaitán, C., Villamizar, M. and Zárate, H., *ESPE*, Vol. 33(78), 176-189, 2015.

Loan Growth and Bank Risk: New Evidence

With Gómez-González, J.E. and Murcia, A., *Financial Markets and Portfolio Management*, Vol. 27(4), 365-379, 2013.

El Mercado Mundial del Café y su Impacto en Colombia

With Caicedo, E., Cano, C., Tique, E. and Vallejo, C., Book Chapter, Banco de la República, 2013.

Selected policy documents

New Keynesian NAIRU and the Okun Law: An application for Colombia

Borradores de Economía; No. 1034, Banco de la República, 2018.

Natural Rate of Interest Estimates for Colombia

With Paula Beltrán, Inflation Report, December 2015, Banco de la República.

A New Estimate of the Non-Inflationary Rate of Unemployment

Inflation Report, March 2017, Banco de la República.

Awards and achievements

Miguel Vélez Fellowship UC Davis Graduate Studies and Economics Department, 2023.

Research and Travel Award UC Davis Economics Department, 2022 and 2023.

Departmental Fellowship UC Davis, 2018-2019.

Lauchlin Currie Scholarship for Ph.D. Studies Banco de la República, 2017.

Performance Excellence Award Banco de la República, 2017.

Javeriana Order of Academic Excellence, Pontificia Universidad Javeriana, 2016.
7th Place National Economics ECAES Exam Economics exam for all undergraduates, ICFES, 2010-II.
Honor Mention for Best ECAES Exam Pontificia Universidad Javeriana, 2010-II.
1st Place, Economics Essay Contest Pontificia Universidad Javeriana, 2010 & 2008.
Outstanding Academic Performance Pontificia Universidad Javeriana, 2011 & 2008.

Presentations (including forthcoming)

American Economic Association Annual Meeting, San Antonio, TX, January 2024.
IEA World Congress, Universidad EAFIT, Medellín, Colombia, December 2023.
18th Annual Economics Graduate Student Conference, WashU, St. Louis, MO, October 2023
Macroeconomics Lunchtime Presentation, UC Davis, Oct. 2023, Feb. 2023, Mar. 2023, Apr. 2021.
Economic History Mini-Workshop, UC Davis, April 2023.
American Economic Association Poster Session, New Orleans, LA, January 2023.
Midwest Macro Meeting, Southern Methodist University, Dallas, TX, November 2022.
LACEA Meeting, Universidad del Pacífico, Lima, Perú, November 2022.
Latin American Meeting of the Econometric Society, Universidad del Pacífico, Lima, Perú, Nov. 2022.
Researchers' LaUNCH, Bank of Finland, Helsinki, September 2022.
Bank of Finland's Villa Research Workshop, Helsinki, August 2022.
Winter School, Centre for Development Economics and Econometric Society, New Delhi, India, Dec. 2021.
Economic History Lunchtime Presentation, UC Davis, April 2021.
Economics Department Seminar, Universidad Javeriana, Bogotá, Colombia, Nov. 2017, Jun. 2016.
Economics Seminar, Banco de la República, Bogotá, Colombia, July 2016.
Economics Seminar, Banco de la República, Medellín, Colombia, June 2016.
XX Meeting of CEMLA, Banco Central de la República Dominicana, Santo Domingo, October 2015.

Teaching experience

Teaching fields: Macroeconomics, Time series econometrics, Economic history, Development, Finance.

Graduate level

Time Series Topics

TA for Professor Òscar Jordà, UC Davis, Spring quarter 2023, 2022, and 2021.

Undergraduate level

Economic development in weak states

TA for Professor Arman Rezaee, UC Davis, Fall quarter 2023, 2022, 2020.

Economic history of the United States

TA for Professor Mark Siegler, UC Davis, Summer Session 2023, 2021, 2020, Fall quarter 2021.

Intermediate macroeconomics

TA for Professor Shahar Shamsani, UC Davis, Winter quarter 2023.

Economy of East Asia

TA for Professor Kathryn Russ, UC Davis, Winter quarter 2022.

World economic history

TA for Professor Christopher Meissner, UC Davis, Spring quarter 2020, 2021.

Money and banking

TA for Professor Kristin Van Gaasbeek, UC Davis, Summer Session II, 2020.

Principles of macroeconomics

TA for Professor Nicolas Caramp, UC Davis, Winter quarter 2020.

Economics of international immigration

TA for Professor Santiago Pérez, UC Davis, Fall quarter 2019.

Other Professional Information

Citizenship: Colombian. **Languages:** Spanish (native), English (fluent).

Referee for: Revista de Economía Institucional and Ensayos sobre Política Económica.

Memberships: American Economic Association, Econometric Society, Latin American and Caribbean Economic Association, Western Economic Association. Commission on Wage and Labor Policy Negotiation, Ministry of Labor, Colombia (2012-2018).