

# DEREK TRAN

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## EDUCATION

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University of California Irvine | GPA: 3.9 (Expected Graduation: 2024) 08/2019 – Current

- Ph.D. Candidate in Economics (Monetary Policy, Empirical Macroeconomics, Financial Econometrics)
- Specialization: Causal Inference (IV, DID, RDD), General Equilibrium Models (search, monetary, labor)

University of California Merced 08/2014 – 05/2018

- B.S. Applied Math – Physics Emphasis, Minor in Economics

## PROFESSIONAL

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Economist (Internship) – Amazon 06/2023 – 09/2023

- Estimated the causal impact of Fulfilled by Amazon for sellers using **synthetic control** and conducted robustness and sensitivity analysis using **machine learning** (random forest, neural net).
- Collect big data (10 mil+) from AWS S3 using SQL and performed analysis using R and Python (Sagemaker) to implement proof-of-concept for Amazon's SellerCentral.
- Wrote and presented business and technical documents in OP1 for executives and directors. Analyzed and summarized key figures using **Python** (matplotlib, pandas).
- Assisted team with estimating the causal impact of account managers for cost benefit analysis. Showed that there is heterogenous effect of some AMs, allowing for optimization.

Graduate Researcher – University of California Irvine 09/2019 – Current

- Simulated general-equilibrium models on **MATLAB** to estimate the effect of central bank discount window policies on inflation.
- Collected datasets from public sources (Census, FFIEC, Fed, BLS), cleaned and analyzed using R.
- Employed cutting-edge **causality regressions**: instrumental variables, doubly-robust estimators, differences-in-differences, and event studies to analyze effect of fiscal policy on bank lending.
- Constructed behavioral models to show optimal actions for banks under aggregate liquidity risk.

Data Analyst - Trinity Financial Services 06/2018 – 05/2019

- Implemented automated fax and mailing system and maintained SQL/Excel databases.
- Automated data gathering of borrower profiles using VBA to interact with the PACER API.
- Automated amortization, payoffs, and reinstatement calculation from 100% manual entry to 5%.
- Developed risk models using a logistic approach to increase loan repayment probability by 40%.

## SKILLS

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**Technical:** Time Series Analysis, Causal Inference, Discrete Choice, Machine Learning, Synthetic Control, A/B Test

**Tools:** AWS Redshift, AWS Sagemaker, S3, EC2, Tableau, PowerBI

**Software:** R, SQL, MATLAB, VBA, Python, STATA, TeX, VSCode, Git, Excel, Word

## PROJECTS

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[Discount Window and Bank Liquidity](#) (Revise and Resubmit – Journal of Banking and Finance)

- Used **difference-in-differences** and **instrumental variables** to analyze impact of the Paycheck Protection Program. Found heterogenous effect of monetary policy for small and large banks.
- Causally showed banks that used the DW expanded PPP lending to firms by 91%.

*Presented at:* 54th Annual Conference of the Money, Macro and Finance