Digital Economics and AI Tutorial Application

Contact Information

Name: Muhammad Bashir
Institution: Department of Economics, University of California, Berkeley
Program: PhD in Economics
Year in Program: 2nd year (enrolled since Fall 2023)
Web: https://bashirmohammad.github.io/
Email: muhammad.bashir@berkeley.edu

Graduate Study and Coursework

I am a second-year PhD student in Economics at UC Berkeley. I completed the first-year core sequence, and I am now taking field courses that align with my interest in the role of government in the economy and the digital transition. During my second year, I am enrolled in field courses in Labor Economics, Public Economics, Macroeconomics, Development Economics, and Political Economy.

These fields shape how I think about the interaction between technological change, government policy, and distributional outcomes. Labor and development economics inform how new technologies affect workers, firms, and market access, especially in low- and middle-income countries. Public economics and political economy provide tools to study how governments design and enforce tax and regulatory policy, while macroeconomics offers a framework for understanding how AI and digital technologies affect aggregate productivity, investment, and fiscal capacity.

Research Interests

My primary research interests lie in public finance and the role of the state in the economy, with a focus on how policy design interacts with firm behavior and growth in both developed and developing countries. Increasingly, my work moves toward questions at the intersection of public finance, digital economics, and AI: how advances in AI can reshape state capacity and service delivery, and how tax and regulatory policies should adapt to AI-driven changes in production and value creation.

I am especially interested in three broad themes:

- Size-based and rule-based policies and their effects on firm dynamics;
- AI and state effectiveness in bureaucracies and oversight institutions;
- AI-driven changes to tax bases, avoidance, and investment incentives.

Ongoing and Planned Research Projects

Size-based policies and firm growth

In one paper, I study how size-based policies—intended to reduce administrative burdens on smaller firms—can unintentionally distort firm growth and generate deadweight loss. Many governments apply thresholds at which tax, reporting, or regulatory requirements increase discretely. Using administrative data, I examine how firms respond to these thresholds, the extent of bunching below them, and the implied misallocation of resources and productivity losses. This connects to digital economics through the use of digitized tax and regulatory records to study policy design at scale.

Anti–tax avoidance rules and investment in developing countries

In another project, I study how anti–tax avoidance rules affect investment and firm behavior in developing countries. Using corporate tax return data from Uganda, I examine how stricter anti-avoidance regulations shape firms' reported profits, investment decisions, and real activity. A central question is whether such rules primarily curb tax avoidance or also discourage productive investment, especially for firms with limited access to tax planning expertise. The same tools that enable sophisticated avoidance can also help tax authorities detect complex schemes, creating an interesting interaction between AI, enforcement capacity, and real activity.

AI to improve Ombudsman effectiveness and bureaucratic accountability

One of my thesis projects, currently in a pilot phase, studies how AI can enhance state effectiveness. I am collaborating with an Ombudsman office to examine whether AI systems can help process citizen complaints more quickly and systematically. Much of the work involves reading and interpreting textual documents such as letters, judicial orders, and administrative correspondence.

We explore deploying AI tools in parallel with civil servants to classify complaints, identify patterns in allegations, and flag potential bottlenecks or non-compliance. We are interested in whether AI support can improve case triage and response times, increase consistency in decisions, and strengthen accountability of civil servants by making enforcement gaps more visible.

AI to relax informational and growth constraints for small firms

In another project, I study how AI tools might help small firms in developing countries overcome informational and strategic constraints as they consider entering new markets or expanding product lines. Many small business owners have limited access to formal consulting or market research. We are exploring whether structured "brainstorming with AI" can help entrepreneurs generate and refine ideas about products, pricing, marketing, and export strategies.

This project raises questions such as how access to AI-based advice affects market entry and experimentation, which types of firms benefit most, and how these tools interact with existing frictions such as lack of managerial capital or credit constraints.

AI and the global freelance economy

I am also in the early stages of a qualitative-empirical project studying a large community of Pakistani freelancers. The central question is how they are adapting to AI and whether AI is complementary to their skills or instead substitutes for some of their tasks. Pakistan and similar countries have built meaningful export sectors around online freelancing in design, programming, and content creation, and AI is a major shock to this model.

Through interviews and platform-linked data, I aim to understand how workers reposition themselves in the value chain, which tasks are most at risk of automation, and whether AI tools enable freelancers to move into higher-value-added services. This work links digital labor markets, cross-country inequality, and the macroeconomic consequences of AI-induced changes in services exports.

AI, Tax Policy, and Investment in the United States

On the U.S. side, I am interested in how AI-driven growth interacts with tax policy and public finance. As AI lowers the cost of producing some goods and services and changes business models, it can alter the composition and elasticity of tax bases. I am particularly interested in how AI may affect corporate tax revenues and progressivity, whether AI tools expand opportunities for aggressive tax planning and profit shifting, and how governments can respond through enforcement, information sharing, and international coordination. At the same time, AI can strengthen tax capacity by detecting patterns in returns, uncovering networks of avoidance, and improving the targeting of audits.

A timely application concerns the current wave of investment in data centers and AI-related infrastructure, often supported by generous tax provisions such as immediate or accelerated depreciation of capital expenditures. I am interested in measuring the revenue cost of these incentives, the types of firms and projects they support, and the extent to which they generate socially valuable innovation versus investments that may not pay off in the long run. This connects my earlier work on size-based and investment incentives to the specific case of AI and digital infrastructure.

Fit with the Digital Economics and AI Tutorial

Across these projects, a common thread is the use of administrative and digital data to study how AI and digital technologies interact with public policy, state capacity, and firm behavior, especially in low- and middle-income countries but also in advanced economies. I see the NBER Digital Economics and AI Tutorial as an opportunity to deepen my understanding of frontier work in digital economics and AI, sharpen the empirical and text-as-data components of my projects, and better situate my public finance and development perspective within the broader digital economics and AI literature. The tutorial and the associated meetings would be highly valuable in shaping my dissertation agenda and building connections with researchers working on related questions.