Research Statement

Duc Nguyen
Email: ducm.nguyen@mail.utoronto.ca

University of Toronto
Website: sites.google.com/view/ducmnguyen

My research focuses on macroeconomics, with an emphasis on growth and development. The core objective is to understand the aggregate economic consequences of policies or institutions that distort resource allocation across firms or sectors. I employ a general equilibrium framework, combined with empirical evidence using causal identification from microdata, to address these research questions. I use two complementary approaches: (1) focusing on the institutional and policy context of individual countries, and (2) examining broader and more systematic forms of institutional distortions across countries.

1 Individual country analysis

The advantage of country-specific analysis is that it provides a clearer link to the specific sources of policies and institutions within a given context, allowing for a deeper understanding of their policy implications. My research examines policy and institutional distortions in both developing and developed countries.

1.1 Developing countries

The literature provides well-established evidence of pervasive institutional and policy-generated distortions in developing countries. Previous studies have identified various sources of these distortions, such as land institutions, labor market regulations, financial frictions, and corruption. While many papers suggest large potential gains in aggregate productivity from removing these institutional distortions in developing countries, the key question remains: how can policy reforms effectively reduce distortions, and is there empirical evidence linking such reforms to productivity growth?

My job market paper, "**Openness to Foreign Firms, Industrialization and Aggregate Growth**", investigates this question by examining Vietnam's major policy reforms between 2000 and 2015, which aimed to lower barriers for foreign firms in the manufacturing sector. Using firm-level data, I develop a multi-sector model incorporating structural transformation and firm heterogeneity, where both domestic and foreign firms make entry and technology investment decisions under varying institutional distortions. My analysis shows that distortions affecting foreign firms were initially higher but decreased over time, approaching those faced by domestic firms. The model shows that this reduction in distortions for foreign firms substantially increases the manufacturing productivity by 64 percent, explaining 60% of the observed productivity growth in manufacturing. This effect arises through two key channels: (1) improve resource allocation between foreign and domestic firms, and (2) incentivize technology upgrades and entry of higher-productivity foreign firms. I further find that the impact of manufacturing reforms extends beyond direct effects on the sector. Using a staggered difference-in-difference estimation strategy, I provide empirical evidence of significant positive indirect effects on agriculture and services productivity. These indirect effects substantially amplify the aggregate impact on economy-wide productivity through structural transformation.

1.2 Developed countries

While previous studies have well-documented institutional distortions causing resource misallocation in developing countries, less is known about the extent of such misallocation in developed countries. Understanding these distortions in developed countries is crucial for two reasons. First, they provide a benchmark for assessing how institutional differences contribute to income gaps between rich and poor countries, offering valuable insights for developing country policies. Second, examining the sources of institutional distortions in developed countries is essential for understanding their impact on economic growth and informing policy decisions.

Agriculture represents a large but low-productivity sector in developing countries. Studies have linked this low productivity to institutional distortions. However, evidence on such distortions in developed countries is limited, making it difficult to assess how institutional differences explain agricultural productivity gaps between developing and developed nations. In our ongoing project **"Resource Allocation and Productivity in Canadian Agriculture,"** my coauthor and I examine resource misallocation in Canada's agricultural sector, addressing this evidence gap. Using comprehensive panel data from the Census of Agriculture, we analyze resource allocation and productivity growth among Canadian farms from 1986 to 2006. Our findings indicate that the allocation of production inputs—such as land and capital—is highly efficient in Canadian agriculture compared to the inefficiencies reported in developing countries. This suggests that resource misallocation is an important factor in explaining agricultural productivity gaps between rich and poor countries. We also observe rapid productivity growth, labor reallocation from agriculture, and notable land consolidation during this period, primarily driven by the adoption of zero-tillage technology. Our counterfactual analysis, applying institutional distortions typical of low-income countries to Canadian agriculture, reveals a significant reduction in technology adoption rates, resulting in much smaller productivity gains. This underscores the broader implications of institutional distortions on the adoption of new technologies.

Although institutional distortions in developed countries tend to be less pervasive, numerous sources of policy and institutional distortions still exist. One notable example in the United States is the institution of corporate lobbying. In our paper, **"Lobbying, Innovation, and Aggregate Productivity"**, my coauthor and I examine how firm lobbying affects innovation and aggregate productivity in the United States. We develop a quantitative model in which firms decide on lobbying and R&D investments to drive growth. In this model, lobbying can either complement R&D by enhancing its returns or act as a substitute by providing an alternative route to increase profits, leading to an ambiguous net effect theoretically. To determine which effect dominates, we use firm-level lobbying data and a shift-share instrumental variable strategy to estimate the causal impact of lobbying on R&D spending. Our findings reveal that lobbying expenditures significantly reduce R&D investment at the firm level. By structurally calibrating the model, we demonstrate that eliminating lobbying would raise U.S. aggregate productivity by 3.5%, primarily due to improvements in the firm-level productivity distribution through increased innovation.

2 Cross-country analysis

A limitation of the single-country context is that findings may rely heavily on country-specific institutions and might not apply broadly to other nations. To address this, I also employ cross-country analysis, which allows me to document and provide more systematic patterns and evidence across multiple countries. In my research, I identify two key findings from the cross-country analysis.

First, I document systematic cross-country patterns of distortions that lead to resource misallocation among producers and analyze their effects on aggregate productivity. In **"The Micro and**

Macro Productivity of Nations", my coauthors and I analyze aggregate productivity differences using cross-country firm-level data and a quantitative model of production heterogeneity with distortions. Our model includes firm selection and productivity-enhancing investments in technology. Empirically, we find that less developed countries experience higher distortions and greater dispersion in firm productivity, largely due to the higher prevalence of unproductive firms. Quantitatively, cross-country differences in the elasticity of distortions with respect to firm productivity account for most observed productivity patterns, explaining over two-thirds of cross-country labor productivity differences. Both firm selection and technology channels are significant, with static misallocation also contributing, though to a lesser extent.

Second, I investigate the drivers and aggregate consequence of cross-country differences in resource allocation across broad economic sectors, often known as structural transformation. In **"Heterogeneous Paths of Structural Transformation"**, I document new facts on the diverse paths of structural transformation across countries. Many countries display flat manufacturing profiles, lacking the typical signs of deindustrialization and contrasting with the steep, hump-shaped manufacturing patterns seen in advanced economies. Additionally, countries with flat-manufacturing profiles tend to allocate more labor to low-skilled services compared to those with steep-manufacturing paths. These heterogeneous structural transformation paths are evident among both early and late developers, independent of development timing. Using a standard structural transformation model, I find that observed differences in sectoral productivity growth are insufficient to account for these paths. Instead, differences in relative productivity levels between manufacturing and low-skilled services explain the majority—around 70 percent—of the observed heterogeneity, highlighting the importance of country-specific factors. These diverse paths of structural transformation contribute significantly to differences in economic growth outcomes across countries.

3 Future work

I plan to actively extend my current research in the future. A key focus will be on gaining a deeper understanding of the sources and nature of institutional distortions. Previous studies have highlighted the importance of the institutions in generating a positive relationship between productivity and distortions across firms. This raises the question: what types of policies and institutions can generate this relationship? One promising avenue is exploring how institutions enable firms to invest in political connections.

In developed countries, political connections often manifest as lobbying, particularly in the United States. Firms frequently allocate resources to lobbying rather than to technological investment. While detailed data on firm-level lobbying activities are available, further research is necessary, especially in employing textual analysis using large language models to understand the specific issues firms lobby for and how these efforts influence their innovation, ultimately impacting broader economic growth.

In developing countries, corruption presents a similarly promising area of study. However, data limitations pose significant challenges. Extensive work is required to develop methodologies that identify corruption at the firm level, such as utilizing political shocks to identify connections between firms and politicians. This research will explore how these connections influence the trade-off between investing in political connections versus technology. While challenging, this represents a promising agenda for future research.