

# Research Statement

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I am a Departmental Lecturer in Development Economics at The University of Oxford. My research interests lie at the intersection of Development, Labor, and International Economics. The theme of my research is to combine both theoretical models and cutting-edge empirical methods to address policy-related questions in developing countries. My research interests spans into three sub-streams: (i) labor economics; (ii) welfare economics; (iii) international trade. This research statement describes my ongoing work, future projects, and how they situate within my broader research agendas.

## 1. Labor Economics

My research has focused largely on examining the impact of labour market regulations, such as the minimum wage laws in China and Indonesia and the Hukou reform in China. I have been particularly interested in how and by what channels labour market policies impact the existing labour market structure.

In our paper, “**Minimum Wage, Informality, and Non-Compliance: a Case Study for Indonesia**” (with Roberto Samaniego), we develop an equilibrium wage-posting model that provides a coherent theoretical prediction of the effect of minimum wage on the labor market. Though the literature on minimum wage is vast, there is a lack of consensus on the extent to which minimum-wage influences the overall labor market structure in developing countries. To gain a comprehensive understanding of the minimum wage policy on the structure of labor markets, we provide a coherent framework that embodies all mechanisms through which minimum wage can affect labor market outcomes, and test the implication of the model using survey data, Indonesian Family Life Survey (IFLS) and Industry Survey (IS). Our model demonstrates that an increase in minimum wage can (i) increase (or decrease) in the formal sector economic activity, (ii) shift the entire wage distribution towards right, both for sub-minimum wages and legal wages (iii) reduce economic rents for employers, and (iv) increase the number of formal sector firms that do not comply with the minimum

wage regulation. Using regional minimum wages in Indonesia that changed annually during 2000-2014 and a sample of working individuals and manufacturing plants, we implement a method that exploits a variation in the minimum wage between geographically proximate districts. By focusing on geographically proximate districts that have similar local market conditions but are subject to different minimum wage levels, we circumvent the potential endogeneity concern that minimum wage changes are correlated with changes in local economic conditions. Our empirical results validate the prediction of the model.

A similar research examines how the Hukou reform has influenced the decision-making of employers and workers. In our paper, **"The Working Dread? Analyzing the Impact of the Hukou Reform on Firms' Monopsony Power in China"** (with **Ida Brzezinska and Francesco Zanetti**), we use historical Hukou reform in China during 1998-2007, and both firm-level and individual-level data, Chinese Annual Survey of Industrial Firms (CASIF) and Chinese Household Income Project (CHIP), to examine the effect of Hukou reform. Our empirical results find that Hukou reform (i) induces an increase in wage payment for rural hukou owners, (ii) reduces economic rent for monopsonistic firms, (iii) forces least productive firms to leave the market, thereby increasing average labor productivity, and (iv) increases employment for remaining firms. Extending the existing Burdett-Mortensen model, we illustrate how a segmented labour market against a particular demographic group enhances firms' monopsony behaviour and allows less productive businesses to persist by exploiting disadvantaged workers. Our model predicts that Hukou reform (i) forces out the least productive firms who survives by exploiting certain population group and thus increases average productivity, (ii) shifts the entire wage distribution, and (iii) reduces monopsonistic rent.

In the related paper, **"Meat or Poison? Minimum Wages for Chinese Firms and Workers"** (with **Ida Brzezinska, Zhaohe Yang**), we study the effect of minimum wage on employer market power in Chinese manufacturing with firm-level data from the Chinese Annual Survey of Industrial Firms (CASIF). We exploit the 2004 minimum-wage reform in China and adopt the contiguous-city-pair approach to identify the effect of minimum wage on market distortion and labor share of income. Our analysis shows that the minimum wage increase is associated with higher average wages, lower employment, reduced markups and markdowns, and increased relative factor share of labor. In addition, such short-term effects of minimum wage policies continue into the medium term, with some moderate decline in magnitude.

**"Productivity dispersion and the rise of unemployment"** (with **Hyung Joon Chung, work-in-progress**) studies the effect of expected wage gap over the types of firms and contracts on individuals' time and resources allocation. Using Korean Labor and Income

Panel Study (1997- 2017) data, we first generate counterfactual wages over different job types estimated for each individual, which then use those counterfactual wages to calculate individual-specific wage inequality over potential job options. We term this measure as the degree of labor market segment (DLMS), which quantifies the degree of market segment each individual faces. In the next stage, we undertake an empirical analysis to examine the relationship between the DLMS and the resource allocation of individuals. We find that the DLMS is positively related to money spent on private education, time spent non-employed, and negatively associated with marital status and the number of children among married couples. Our empirical results show that increased labor market segmentation leads workers to invest substantial amount of resources into landing on the good-quality job. We are currently developing an equilibrium occupational choice model that capture the effect of labor market segmentation on individuals' choice.

## 2. Welfare Economics

As a development economist, my long-term research objective has been to suggest policies that enhance the quality of life and standard of living. My research interests on this theme span from the construction of welfare measurement to the empirical analysis of policy effects. Under this theme, I investigated the topics of women's empowerment, informality, and poverty. Most of my works in this category are empirical.

In the paper, "**Minimum Wage and Women's Decision Making Power within Households: a case study in Indonesia**" (with Benjamin Williams; published in **Economic Development and Cultural Change, 2021**), we study the heterogeneous effect of minimum wage on labor market outcomes across gender and its subsequent effect on household decision making. We exploit province-specific minimum wage increases in Indonesia between 2000-2014 and test for difference in labor-market outcomes between geographically proximate districts (located near the border) that are subject to province-specific minimum wage regulations. We find that minimum wage laws in Indonesia improve labor market conditions for husbands compared to wives as the majority of formal sector workers are males where minimum wage binds. Consistent with the household bargaining model, we find that the minimum wage reduces the bargaining power of women in the household.

In the companion research "**Gender-Specific Informal Sector Heterogeneity: Evidence from Indonesia**" (with Benjamin Williams and Hyung Joon Chung), we analyse the nature and driving mechanism of informality experienced by different genders, with a particular emphasis on informality's effect on women's wellbeing. Using the three rounds of the Indonesian Family Life Survey (IFLS) data and the marginal treatment effects (MTE) framework (Heckman, Urzua, and Vytlačil, 1999, 2005, 2007), we generate an

inference on the behavioral response of individuals' choice on the treatment status based on their expected outcome, allowing us to infer the driving mechanism for in/formal sector employment. We find substantial heterogeneity in returns to formal sector employment across gender: whereas we observe clear positive sorting on the gain in the male sample, suggesting a rational choice of in/formal sector employment, we do not observe this pattern in the female sample; at best, our analysis suggests that females earn more in the formal sector regardless of individuals' innate preference for in/formal sector employment. This finding suggests a fragmented labor market for women and that working in the formal sector improves the lives of female workers.

I have also worked on the topic of poverty. In one of my projects, "**Evaluating a Long-run Forecast: The World Bank Poverty Forecasts, evaluated a poverty forecast made by the World Bank**" (with Herman Stekler; published in **Economic Bulletin, 2017**), we suggest a simple but reasonable approach to evaluate a poverty forecast when the actual data for the terminal date is not available. The methodology requires one to infer a forecast for an intermediate date for which the data are available. In this case, we analyze the World Bank's forecasts of the poverty headcount made in 2002, but the actual data for the terminal date will not be available for some time. In another project, "**Chronic Poverty Measurement**," I survey the existing two different approaches to measure chronic poverty. I suggest a new interpretation for each chronic poverty measure's main assumption and argue that the choice of appropriate measure is contingent on the availability of survey data, either consumption data or income data.

### **3. International Trade Policy**

My third area of research interest, which I have established via my lecture on trade and development, is the intersection between international trade and development. Trade has been considered a growth engine and a solution for the coordination failure issue that developing countries experience. Despite the vast amount of research on this topic, I became particularly interested in (i) how developing countries choose specific trade protection measures and (ii) how trade policy interacts with existing domestic labor market policy to affect firms' competitiveness and market distortion.

"**Tariff Overhang and Temporary Trade Barriers: Substitutes or Complements?**" (With Youngwoo Rho) studies trade policy flexibilities under the WTO agreements focusing on comparing the most favored nation (MFN) tariffs and temporary trade barriers (TTBs). Using nine developing countries' panel data (1999-2011), we examine the motivation behind trade policies and provide empirical evidence. We find that the MFN tariffs and TTBs are applied to different economic environments. The MFN tariff is more sensitive to the overall increase of imports, while the TTBs are used to protect the im-

port market from monopolization by a specific country. This is found from nine developing countries' panel data (1999-2011). The empirical evidence shows both policy tools having complementary characteristics.

My ongoing study **"Trade Liberalisation and Labour Markets: The Role of Labour Market Distortions"** (with Ferdinand Rauch, Early Stage) examines the interaction between minimum wage policies, and the reduction in tariff uncertainty on labour market outcome. Even though it is well-known that the extent to which a country gains from trade depends on the labour market environment, the vast literature on the labour market impacts of globalisation has largely ignored the influence of exploitative labour markets. We investigate China's WTO membership and the consequent reduction in tariff uncertainty. Currently, we have reduced form results that the reduction in tariff uncertainty corrects labor market distortion, as evidenced by the decline in monopsony indices. We are presently examining whether the decrease in monopsony rent is a result of other labor market policies such as minimum wage or hukou reform or if those policies were endogenously determined in response to more significant export potential resulting from the country's WTO membership.

In the future, my research will involve a combination of theoretical models and cutting-edge techniques in order to comprehend the interplay of firms, workers, markets, and governments at the intersection of trade policy and labour in developing countries, while also taking advantage of the growing accessibility of microlevel big data. This will be done to acquire a better understanding of how the interaction between trade policy and the labour market affects emerging nations. I am excited about the thought of improving my knowledge in these areas, making a contribution to the field.