Technische Universität München
TUM School of Social Sciences and Technology

Economic and Political Consequences of Foreign Direct Investment for Developing Countries

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Vollständiger Abdruck der von der TUM School of Social Sciences and Technology der Technischen Universität München zur Erlangung eines

Doktors der Philosophie (Dr. phil.)

genehmigten Dissertation.

Vorsitz: Prof. Dr. Miranda Schreurs

Prüfer*innen der Dissertation:

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Die Dissertation wurde am 08.05.2023 bei der Technischen Universität München eingereicht und durch die TUM School of Social Sciences and Technology am 09.11.2023 angenommen.

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Abstract

Does foreign direct investment (FDI) affect economic development, inequality, social tensions, government decision-making, and citizen frustration with the government in developing countries? In this dissertation, I examine the political and socioeconomic consequences of FDI at the national, local, and individual levels. I argue that FDI, which accounts for up to 5% of national GDP and has increased in recent decades, creates jobs directly at the location where it is invested. Due to limited mobility, the primary beneficiaries of FDI projects are located in the geographical proximity of the investment. This creates local growth but also leads to intra-regional inequality. Since not every worker has an equal chance to benefit from job creation, I expect the distributional consequences of FDI to affect individuals' subjective insecurity and lead to greater dissatisfaction with the government. Given the distributional consequences of FDI, governments need to mediate between the interests of workers and investors and are expected to change labor rights. It is further argued that people who belong to an underrepresented or discriminated group will report lower satisfaction once exposed to FDI. I examine spatial and geo-referenced FDI data to model marginal growth and inequality effects in local industries and aim to understand whether FDI leads to frustration and (dis)satisfaction with the government. This dissertation presents evidence that FDI is associated with positive and negative changes in different kinds of labor rights, higher local economic development, and regional inequality effects that develop over time. Furthermore, I find that FDI negatively affects people's economic insecurity and political satisfaction with their government. Dissatisfaction with the government results from FDI, especially for citizens whom the current government does not favor. Assuming that individual (dis)satisfaction with the government is the starting point for many IPE research interests - there is no protest without individual frustration and no re-election of incumbents without satisfaction - I hope to bring a better understanding of how FDI projects, among other factors, drive economic insecurity and frustration with the government. By applying difference-in-differences models based on local geo-referenced FDI, nighttime light, population, and survey data, this dissertation also aims to make a methodological contribution to the IPE literature.

Keywords: Foreign direct investment, developing countries, international political economy, political consequences, economic development, growth, inequality, labor rights, satisfaction, favoritism.

Zusammenfassung

Beeinflussen ausländische Direktinvestitionen die wirtschaftliche Entwicklung, Ungleichheit, soziale Spannungen, die Entscheidungsfindung der Regierung und die Frustration der Bürger*innen in Entwicklungsländern? In dieser Dissertation untersuche ich die politischen und sozioökonomischen Folgen von Investitionen auf nationaler, lokaler und individueller Ebene. Ich vermute, dass ausländische Direktinvestitionen, die bis zu 5 % des nationalen BIP ausmachen und in den letzten Jahrzehnten zugenommen haben, direkt am Ort der Investition Arbeitsplätze schaffen. Aufgrund der begrenzten Mobilität befinden sich die Hauptnutznießer von Investitions-Projekten in der geografischen Nähe der Investition. Dies schafft lokales Wachstum, führt aber auch zu intra-regionaler Ungleichheit. Da nicht jede*r Arbeitnehmende die gleichen Chancen hat, von der Schaffung von Arbeitsplätzen zu profitieren, erwarte ich, dass sich die Verteilungsfolgen von Investitionen auf die subjektive Unsicherheit der Einzelnen auswirken und zu einer größeren Unzufriedenheit mit der Regierung führen. Angesichts der Verteilungsfolgen ausländischer Direktinvestitionen müssen die Regierungen zwischen den Interessen der Arbeitnehmer*innen und der Investor*innen vermitteln, was sich in Änderungen der Arbeitsrechte niederschlagen sollte. Des Weiteren wird argumentiert, dass Menschen, die einer unterrepräsentierten oder diskriminierten Gruppe angehören, eine geringere Zufriedenheit aufweisen, wenn sie mit ausländischen Direktinvestitionen in Berührung kommen. Ich untersuche räumliche und georeferenzierte FDI-Daten, um marginale Wachstums- und Ungleichheitseffekte in lokalen Industrien zu modellieren, und versuche zu verstehen, ob mehr Investitionen zu Frustration und (Un-)Zufriedenheit mit der Regierung führen. In dieser Dissertation wird nachgewiesen, dass ausländische Direktinvestitionen mit positiven und negativen Veränderungen unterschiedlicher Arbeitsrechte, einer höheren lokalen Wirtschaftsentwicklung und regionalen Ungleichheitseffekten verbunden sind, die sich im Laufe der Zeit entwickeln. Darüber hinaus stelle ich fest, dass sich ausländische Direktinvestitionen negativ auf die wirtschaftliche Unsicherheit und die politische Zufriedenheit der Menschen mit ihrer Regierung auswirken. Unzufriedenheit mit der Regierung resultiert aus ausländischen Direktinvestitionen, insbesondere bei Bürger*innen, die von der derzeitigen Regierung nicht unterstützt werden. Ausgehend von der Annahme, dass die individuelle (Un-)Zufriedenheit mit der Regierung der Ausgangspunkt für viele IPÖ-Forschungsinteressen ist - es gibt keinen Protest ohne individuelle Frustration und keine Wiederwahl von Amtsinhabern ohne Zufriedenheit - hoffe ich, ein besseres Verständnis dafür zu schaffen, wie Investitionen neben anderen Faktoren wirtschaftliche Unsicherheit und Frustration mit der Regierung fördern. Durch die Anwendung von Differenz-in-Differenzen-Modellen, die auf

lokalen georeferenzierten Investitions-, Lichtemissions-, Bevölkerungs- und Umfragedaten basieren, soll diese Dissertation auch einen methodologischen Beitrag zur IPÖ-Literatur leisten.

Stichwörter: Ausländische Direktinvestitionen, Entwicklungsländer, Internationale Politische Ökonomie, politische Konsequenzen, wirtschaftliche Entwicklung, Wachstum, Ungleichheit, Arbeitsrechte, Zufriedenheit, Vetternwirtschaft.

Acknowledgements

Completing a PhD has sometimes felt like an academic and personal roller-coaster. It has been a journey that I would not have been able to achieve alone, but only with the support of various colleagues, friends, and family. I want to express my deepest gratitude to those who have supported and encouraged me throughout my doctoral studies. Their guidance, feedback, and unwavering support have been invaluable in helping me reach this goal. Moreover, I thank the Studienstiftung des Deutschen Volkes and the Bavarian American Academy for accepting me to join their fellowship programs.

First, I would like to express my sincere gratitude to my principal supervisor, Tim Büthe, for his invaluable guidance and support throughout my doctoral studies. His expertise in IPE, his precise and honest feedback, and his institutional support have been a guiding light in shaping the direction of my research and helping me navigate the complex landscape of academia. I am also grateful to the members of my thesis committee, Amy Pond and Erica Owen, who provided insightful feedback and constructive criticism that constantly helped me improve my work and supported me emotionally throughout the endeavor.

In addition to the support and guidance I received from my supervisor and committee members, I was privileged to spend time abroad during my PhD. My stay at the Department of Government at Harvard and the Blavatnik School of Government at the University of Oxford was a truly transformative experience that allowed me to engage with leading and fascinating scholars in my field and gain a new perspective on my research. I want to thank Dustin Tingley and Anna Petherick for making these opportunities possible.

The opportunity to work with those who share a passion for IPE research has been both inspiring and rewarding. I thank my co-authors Nicole Janz, Tabea Palmtag, and Tobias Rommel for contributing to our joint work. Their expertise, creativity, and dedication have been invaluable in moving our research projects forward. I am also thankful for the support and guidance of Yvonne Buckley and other colleagues at the Hochschule für Politik, especially the members of the International Relations Research Group, led by Tim Büthe, who provided valuable feedback to my work. I have been fortunate to receive extensive feedback from Timm Betz, Sarah Bauerle Danzman, Jeffrey Frieden, In Song Kim, and Rachel Wellhausen. Their contributions to my development as a researcher cannot be overstated.

I would also like to highlight the importance of the support and encouragement of my colleagues, who have become my close friends over the last decade and have been a source of inspiration and motivation throughout my PhD. As friends, they always provided direct and honest feedback, which helped me improve the quality of my work and provide emotional support when it was most needed. Since I started my academic journey as an undergraduate student, my mentor Karsten Fischer has become a close friend. I am sure that without him, I would have had a challenging time completing my PhD. There is also the only Marcel Schliebs, to whom I will forever be indebted. He has always been a role model and moral compass, advising me through thick and thin. Sometimes, it feels like the only thing that separates us is the football clubs we support (I never gave up on him changing his mind about that).

In addition, Cindy Cheng and Hannah Löffler have also been an essential part of my PhD life. I am grateful for the many conversations we have had over

the years that have shaped my research and personal growth. In particular, my experience at the CoronaNet Research Project has been invaluable and enriching. Collaborating with hundreds of researchers worldwide on such an impactful topic has been mind-changing, and I thank Cindy Cheng, the other PIs, and our inspiring research assistants for making this journey so unique.

I would also like to thank those outside my academic bubble who have supported me as close friends. Be it since the Hansenberg with Michael, Toni, and 4EG, on a river in Bosnia and Herzegovina with the Behnkes Boys Johannes, Bene, and Marcel, on a hiking trip with Konstantin and Johanna, in Schmöckwitz with Dominik and Käthe, in Munich with Christoph and Susi, at Shays with Jack, Maxi, and Nico, in the piano bar with Franzi, on Madeline Island with Aurelie, David, and Lane, in Darmstadt with Janig, Marie, and Moritz, and at the Stadion am Böllenfalltor with the UDL crew. I am also thankful for Bi, who always built the golden house. I am lucky to have such a wonderful group of friends who distract and motivate me when I need it most. I thank them from the bottom of my heart for their contributions to my journey.

Last but not least, I would like to thank my family, who are the reason for who I am. To Britta, Viktor, Vinzent, Anni, and Lars for always giving me a second home. To my grandparents Marion, Egon, and Petra, as well as my aunt Simin, who took care of me when I was young. And finally, to my parents: Jasmin and Detlef, you have always been my biggest cheerleaders, inspiring me for what and who I want to be in the future. Your sacrifices, love, and guidance have made all the difference in my life. You gave me wings to fly and provided a home to be protected, and I would like to dedicate this thesis to you.

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List of Abbreviations

ADL Autoregressive distributed lag model

ATT Average treatment effect on treated units

CIRI Cingranelli and Richards' Human Rights Database

DiD Difference-in-Differences

DMSP-OLS Defense Meteorological Satellite Program's Operational Linescan System

DN Digital number

EAP East-Asian Pacific

ECA Europe & Central Asia

ECM Error correction model

FDI Foreign Direct Investment

GDP Gross-Domestic Product

GeoEPR Geo-referencing Ethnic Power Relations

ILO International Labor Organization

IMF International Monetary Fund

IPE International Political Economy

IV Instrumental variable

LD Light Difference

LOG Logarithm

LRI Labor Regulation Index

MNA Middle East & North Africa

MNC Multinational Corporation

NGO Non-governmental organization

NOAA National Oceanic and Atmospheric Administration

OECD Organisation of Economic Co-operation and Development

OLS Ordinary least squares

PLAD Political Leaders' Affiliation Database

PRIO Peace Research Institute Oslo

RAM Random-Access memory

SAS South Asia

SSA Sub-Saharan Africa

TB Terabyte

UCDP Uppsala Conflict Data Program

UNCTAD United Nations Conference on Trade and Development

UNDP United Nations Development Programme

USD United States Dollar

VIIRS Visible Infrared Imaging Radiometer Suite

Chapter 1

Synopsis

1.1 Introduction

In September 2018, the "Confederation of all Indian Traders" protested against increasing foreign direct investment (FDI) to the Indian retail sector (Mohanty, 2018; The Bridge Chronicle, 2018). Fearing the loss of jobs, higher market competition, and external wage pressures by foreign corporations such as Walmart, workers, and small business owners were frustrated. They demanded better support from the government in the form of protective policies. Having had personal experience with negative consequences from previous investment projects, the general attitude towards FDI projects and the frustration with the government that attracted these capital flows increased (ibid.).

This anecdotal event has been the starting point of my research on the political consequences of FDI for developing countries: I wanted to explain why people like the Indian traders oppose FDI, although it has been promised as a key to economic integration and development. Concretely, I aimed to understand to what degree FDI drives local growth and prosperity, stimulates negative economic consequences, and can ultimately lead to individual political frustration with the government. Subsequently, I was interested in the government's role in balancing the interests of workers and multinational corporations (MNCs).

For decades, developing countries have experienced increased FDI inflows and positive national growth rates, as presented in Figure 1.1. Those trends, combined with improvements in living conditions of many in the Global South as shown by the Human Development Index provided by the UNDP (2023), led to the conclusion that FDI accelerates growth and wealth, especially in those countries where mobile capital is a scarce resource (see Basu and Guariglia, 2007;

Pandya, 2016). Consequently, governments have begun to liberalize domestic economic regulations and implement investor-friendly policies (see Jensen, 2003; Büthe and Milner, 2008; Jensen, Malesky and Walsh, 2015; Pandya, 2016).

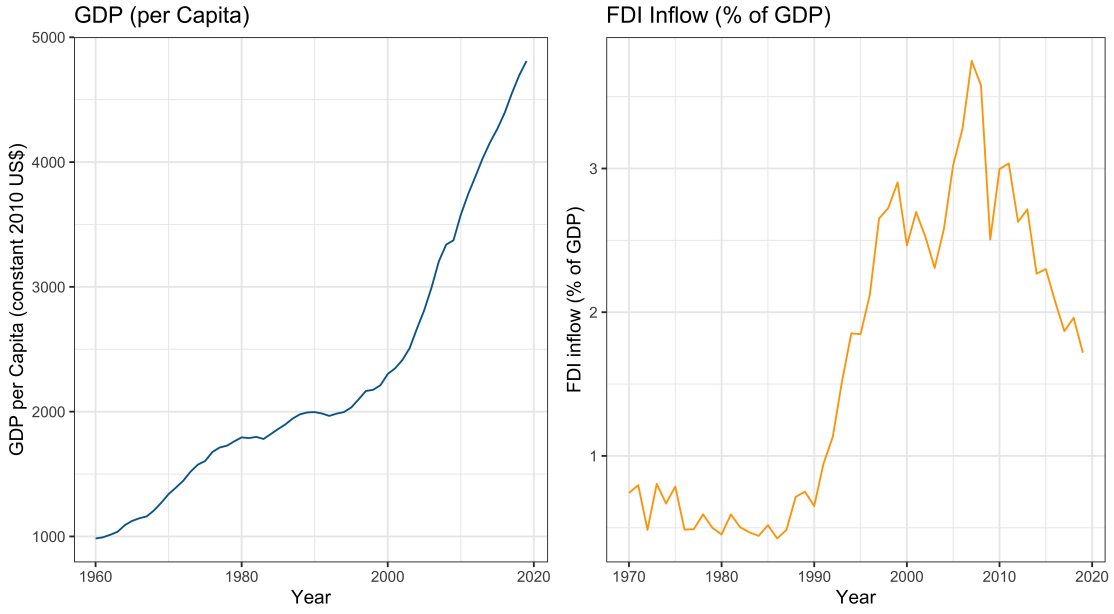

Figure 1.1: Growth and FDI inflows to Low- and Middle-Income Economies according to the 2021 World Development Indicators. Left: GDP per Capita (as constant 2010 USD). Right: FDI inflows as a percentage of GDP. Source: The World Bank (2019).

At the same time, one can also find evidence that the actual satisfaction of individuals with their material well-being and the government stagnated: As one source for this claim, the Afrobarometer (2019), which has surveyed more than 200,000 individuals in 36 African countries, shows the general well-being and trust of political institutions have not improved in the past 20 years (see Figure 1.2). While FDI is undoubtedly not the only element that can drive individual frustrations, these contradicting trends, rising growth rates, and stagnating well-being made scholars examine the distributional consequences that investments

bring to individuals. Empirical studies have shown that with growth, adverse effects are also connected. To name some, rising wage volatility, inequality, job insecurity, protest and other aspects have been widely discussed in the IPE literature (see Scheve and Slaughter, 2004; Robertson and Teitelbaum, 2011; Lessmann, 2013; Owen, 2013, 2015; Walter, 2010, 2017; Rommel, 2018; Chilton, Milner and Tingley, 2020; Palmtag, Rommel and Walter, 2020; Palmtag, 2020).

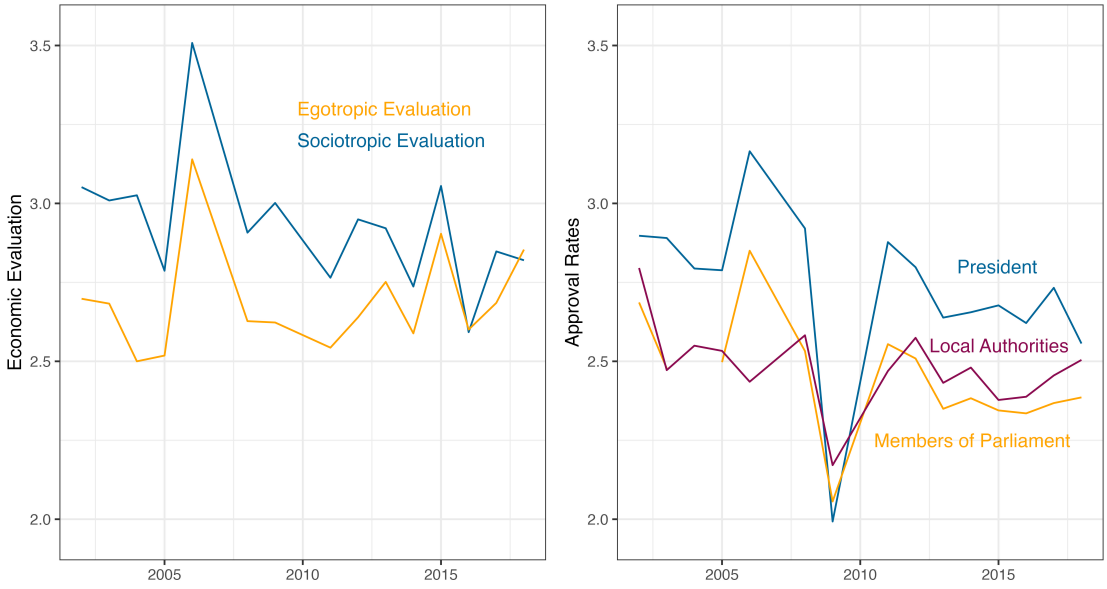

Figure 1.2: Afrobarometer survey results for 36 African countries. Left: Economic evaluation (sociotropic evaluation: Blue, egotropic evaluation: Orange, scale: Very bad (1) to very good (5). Right: Approval rates (president: Blue, MP: Orange, Local authorities: Purple. Scale: Strongly disapprove (1) to strongly approve (4). Source: Afrobarometer (2019).

Aiming to understand the frustrations of individuals who are skeptical about more investments (Owen, 2015), this dissertation examines how FDI shapes insecurities and frustrations with the government in developing countries through local growth and inequality effects. While scholars have made progress in identifying national mechanisms of FDI, there are still many inconclusive findings on

how investments shape economic developments, inequality, individuals' frustrations, and governments' actions. Therefore, the main goal of the dissertation is to advance the knowledge of whether and how FDI affects developing countries and their citizens by thinking beyond the scope of current IPE literature and differentiating the effects of FDI among three levels: national, local, and individual. In what follows, I argue that FDI will have different outcomes depending on the level one looks at. While national and local growth effects might be connected to foreign investments, regional inequality and individual frustrations with the government can still exist and affect individuals.

Therefore, the goal of this thesis is not only a theoretical but also a methodological contribution: Looking at the individual and local effects of FDI contrasts with the empirical design of most previous studies that have relied on national comparisons (see Jensen, Quinn and Weymouth, 2017). Examining the core assumptions of the FDI literature on growth, inequality, and citizens' satisfaction will allow us to understand better the effects of FDI on developing countries and fill existing gaps in the literature. It might explain why citizens like the "Confederation of all Indian Traders" protest against incoming investments and demand greater protection from the government.

In the following, the synopsis discusses the current state of the literature, outlines the theoretical and methodological contribution of the dissertation, and explains the argument by summarizing the four empirical chapters. After fully presenting these four chapters, the sixth chapter comprehensively discusses the findings and major limitations. In addition, the sixth chapter addresses potential avenues for future research and discusses implications for policymakers.

1.2 Defining FDI

Examining the effects of FDI requires us to understand what we mean by foreign, direct, and investment: Instead of one unanimous definition, there is an ongoing dispute about what to count as foreign direct investment (see Desai, 2009; Alfaro, 2014). In its broadest terms, FDI can be defined as an investment of a multinational corporation located in the "home country" to another entity situated abroad, the "host country". The investment follows the goal to control and oversee the host company's operational business and is often connected to receiving access to workforce and resources at a lower cost or unavailable in home commodity markets (see Alfaro, 2014).

Investments can come in different forms: shares, assets, loans, and technology transfers. FDI can be used to acquire, merge, or expand existing facilities (brownfield investment) or create new production infrastructure (greenfield investment). While there is no unitary definition of FDI by major international organizations (World Bank, IMF, and the United Nations Conference on Trade and Development), the literature has widely agreed on two necessary conditions to be categorized as FDI: First, MNCs need to have a "long-lasting" interest in the investment (see ibid.; Alfaro, 2014).[1] In this, it is distinct from portfolio investments, which are, in contrast, often interested in maximizing short or medium returns of investments (see Duce, 2003). The second necessity is that the home company holds a minimum of ten percent[2] of voting shares after the investment, which should guarantee that operational and strategic decisions are influenced

[1] This aspect includes that MNCs need to stay involved and invested in the company for a longer time.

[2] While ten percent follows the definition by the IMF and the World Bank, the concrete percentage threshold is also part of the dispute (see Alfaro, 2014).

by those MNCs (see Duce, 2003).

1.3 Gaps in the Literature

Governments in the Global South are incentivized to attract FDI as a mobile source of capital. Farole and Winkler highlight that "for many developing countries, domestic capital accumulation remains too low to stimulate sufficient growth" (2014, p. 9). FDI forms an unrestricted source of capital that is expected to enhance economic and infrastructure development that could potentially lead to spillover effects and benefit the whole country, such as the creation of new jobs and increased wages (see OECD, 2008; Tomohara and Takii, 2011; Pandya, 2010; Markusen and Venables, 1999). Hoping for incumbency effects (Owen, 2019; Jensen et al., 2014), governments might attempt to create an investor-friendly environment that shall attract more investors. Providing this environment can happen through multiple channels. For example, countries can promise tax cuts for investors or changes in labor and even human rights standards (e.g., see Baccini, Li and Mirkina, 2014; Jensen, Malesky and Walsh, 2015; Jensen et al., 2014; Li, 2006; Rodríguez-Pose and Arbix, 2001).

Governments need to balance the interests of both investors and citizens in order to create long-lasting investment opportunities. Therefore, any attempt to create a better investor environment affects individuals and workers. The literature has not yet come to a conclusion in which direction governments change labor rights as a result of incoming FDI (e.g., see Olney, 2013; Mosley and Uno, 2007; Mosley, 2010; Greenhill, Mosley and Prakash, 2009; Kim and Trumbore, 2010; Neumayer and de Soysa, 2006; Peksen and Blanton, 2017). I argue that

contradicting findings about the direction can be explained by the fact that FDI shapes labor rights standards depending on the type. In an attempt to close this gap in the literature, this dissertation looks at how FDI affects labor rights, providing evidence from a new dataset that allows labor rights standards to be differentiated.

Objective 1: How does FDI stimulate changes in national labor rights standards?

Governments often follow the promises of growth and wealth as an outcome of economic integration and change taxation and labor rights laws to accommodate foreign investors. But is FDI leading to greater growth and wealth expansion? There is wide-ranging literature that has pointed at positive effects on growth and productivity spillovers (e.g., see De Mello, 1999; Lumbila, 2005; Nwaogu and Ryan, 2015; Iamsiraroj and Ulubaşoğlu, 2015; Liang, 2017; Iwasaki and Tokunaga, 2016). However, recent literature doubts whether FDI always only positively affects people in a country. Aside from direct positive effects on job creation, spillovers, and wages, several studies point to concerning consequences when it comes to investments in developing countries (e.g., see Alfaro and Johnson, 2013; Robertson and Teitelbaum, 2011). Until today, there are mixed findings on the direct and indirect effects of FDI. As argued below, this dissertation aims to close the gap of inconclusive findings by moving away from the national and instead looking at the growth and inequality effects at the local level.

Objective 2: How does FDI affect growth and inequality on the local level over space and time?

As a third objective, this dissertation aims to understand how the economic consequences of FDI drive individuals to be satisfied with the government. Classical trade models in the IPE literature have tried to explain the effects of trade and FDI on the individual. The factor endowment model by Heckscher and Ohlin (1991) and further developed by Stolper and Samuelson (1941) expects that all factors of production (labor and capital) are entirely mobile across sectors in a fully competitive market. According to the model, open trade would benefit the abundant factor in a country while disadvantaging the owner of the scarce factor. Thus, it predicts that low-skilled workers, developing countries' most significant production factor, should benefit most from trade. However, in reality, empirical evidence contradicts this prediction as - for several reasons - factors are not perfectly mobile and result in different market dynamics. In contrast to the model, low-skilled workers tend to suffer from globalization and increasing economic integration (see Mansfield and Mutz, 2009; Menéndez González, Owen and Walter, 2023).

An alternative model talks about the specific factors in sectors (Ricardo-Viner). According to this model, factors are specialized and bound to producing industries and cannot easily be shifted in the short run. Thus, this factor immobility would lead industries and sectors within an economy to have different trade preferences: Export-oriented industries will support global trade, while import-oriented companies will not (see Frieden and Rogowski, 1996). As with the factor endowment model, several studies find that the sectoral exposure is not able to explain individual behavior and trade preferences as skill levels of workers and firm characteristics matter (see Mansfield and Mutz, 2009; Scheve and Slaughter, 2004).

Unfortunately, the relative factor endowment (Heckscher-Ohlin and Stolper-Samuelson model) and sector models (Ricardo-Viner) have not been evident in predicting distributional effects of FDI on individuals (see Walter, 2017). Firm-level research shows that the effects of trade and globalization on companies are more complex. Therefore, this dissertation builds on arguments developed by Melitz, Helpman, and other scholars (Melitz, 2003; Helpman, Melitz and Yeaple, 2004; Helpman, Itskhoki and Redding, 2010). According to their argument, differences in the productivity of companies lead to firm sorting in domestic and foreign markets: While companies with lower productivity will need to shut down over time, and middle-productive companies are only able to serve the domestic market, highly productive companies will start to export their goods and dominate domestic and foreign markets. Those foreign companies invest in developing countries and tend to own means of higher productivity and technological know-how. While these companies benefit from access to international markets, the domestic competition between the more and less productive companies increases. As an outcome of the asymmetrical distribution of productivity, international companies begin to dominate the domestic market, which results in increasing competition for production factors in the host country and can affect commodity prices, and crowding-out effects (e.g., see Osgood, 2016; Pandya, 2016; Scheve and Slaughter, 2004; Menéndez González, Owen and Walter, 2023; Broz, Frieden and Weymouth, 2021).

According to Helpman, Itskhoki, and Redding, firm sorting will have immediate effects on the individual (2010): Foreign companies with higher productivity in manufacturing focus their job search on better-educated and highly skilled individuals (see Helpman, Itskhoki and Redding, 2010; Helpman et al.,

2017) and their bargaining power increases together with wages (see Te Velde, 2003; Te Velde and Morrissey, 2004; Pandya, 2010). On the other side, lower-skilled people will not benefit from job creation and instead suffer from the pressure productive companies put on their local employers, which in the end increases job volatility and unemployment (see Chen, Ge and Lai, 2011; Helpman, 2014; Autor, Dorn and Hanson, 2013). This difference between low and high-skilled workers manifests in inequalities and has been proven by several empirical studies (e.g., see Feenstra and Hanson, 1997; Te Velde and Morrissey, 2004; Lipsey and Sjöholm, 2004; Goldberg and Pavcnik, 2007; Baccini et al., 2021; Pandya, 2010).

How do these developments affect individuals? While the existing literature has shown how FDI affects the economic insecurities of lower-skilled workers, research on how FDI shapes the political satisfaction of people is still scarce. Thus, this dissertation further aims to analyze the interplay of exposed individuals with government decisions and to understand how the systematic discrimination of some parts of the community could explain higher frustrations with the government as an outcome of FDI.

Objective 3: How does FDI change the political satisfaction of people with the government, and which elements moderate this relation?

1.4 Theoretical Contribution

While studies often ask the right questions about the effects of FDI, there seem to be theoretical and methodological reasons for inconclusive and contradictory results. As Gallagher highlights, "(...) the broad political consequences of FDI

liberalization either have been reduced to the good-bad dichotomy or have been overlooked" by most research (see Gallagher, 2002, p. 341). Since their assessment, scholars have created an immense amount of empirical work on the outcomes of FDI. But still today, there are contradicting findings on the positive and negative consequences of foreign investments. Therefore, this dissertation project aims to fill these gaps and contribute theoretically and methodologically to advance the knowledge of FDI's economic and political consequences.

The first theoretical contribution of this dissertation builds on the argument that while only a small number of individuals are directly affected by job gains or losses, FDI has the potential to generate indirect effects on a large number of workers. Foreign direct investment's "direct" effects refer to the immediate change in an individual's employment situation. These effects can be positive, as individuals may gain employment following an MNC's investment in their firm, or negative, as individuals may lose their jobs. Conversely, the 'indirect' effects of FDI can include changes in consumer power, higher wages, the creation of public infrastructure, and increased productivity through spillovers. However, they can also lead to adverse outcomes such as job volatility, increased market competition, or crowding out other market participants.

Indirect effects of FDI affect the subjective assessments by individuals, which refer to feelings that arise as a result of FDI. Objective effects of FDI, in contrast, refer to measurable growth and inequality effects at the location of FDI. For example, while investment may drive economic development and prosperity at a location, individuals may feel the opposite, harboring concerns and a sense of vulnerability to FDI exposure. Ultimately, this indirect effect may reduce workers' security as they become increasingly concerned about economic change

and rising inequality. In this dissertation, I argue that while there might be local and regional growth effects, regional inequalities and subjective insecurities eventually make individuals still frustrated and concerned after exposure to FDI. Given the complexity of how economic development and individual frustrations are formed, it is necessary to understand how FDI affects local communities and how individuals perceive FDI in doing so. By not differentiating objective and subjective elements, it becomes hard to find robust answers to the consequences of FDI. As elaborated below, this dissertation tests whether FDI leads to local growth in developing countries and if exposed individuals report lower well-being and higher frustration as an outcome of their subjective assessment.

Second, when focusing on the individual, it is essential to consider the community and social group to which an individual feels connected. While the economic voting literature often relies on how individual characteristics (egotropic) or the development of the country as a whole (sociotropic) shape individuals' assessments of economic well-being, I argue that how people react to FDI also depends on how the group which they feel connected perceives the investment. This concept is called geotropism and will be vital to understanding how FDI affects individuals. The dissertation examines whether individuals who feel underrepresented and disconnected from the national government report higher frustration levels after exposure to FDI. This difference may be explained by how governments favor certain groups of individuals when providing redistributive policies to some, but not all, regions. Individuals belonging to discriminated groups will feel even more vulnerable to inward investment.

Third, another theoretical reason for inconclusive findings is based on the fact that the majority of studies focus on developed countries instead of develop-

ing countries (e.g., see Autor, Dorn and Hanson, 2013; Ballard-Rosa et al., 2021; Jensen, Quinn and Weymouth, 2017; Walter, 2017). This has crucial implications as FDI to developed countries arrives at places with better infrastructure and people who have received more years of education. Thus, the number of people who could be frustrated indirectly because they will never be able to benefit from FDI projects but rather experience negative consequences and insecurities might be higher in developing countries.

There are several reasons why this dissertation focuses on developing countries: Given the importance of FDI for developing countries, further research is needed to identify the consequences of FDI and inform policymakers about how to address those. Increasing protests and grievances in developing countries (IMF, 2022) might also be explained by FDI, and therefore, new research on political satisfaction and insecurities should shed light on the reasons for this trend. Moreover, the variation of GDP and growth rates in developing countries is an appropriate setup to better identify variations within and between countries.

The last chapter of this dissertation focuses on African communities when assessing the effect of FDI on political satisfaction and the role of ethnic and regional favoritism. Given the colonial past, borders in African countries have been drawn "quasi-randomly" (Dickens, 2018, p. 372) by colonizers, which partially explains why ethnic divisions within African countries still prevail until today, and favoritism by national leaders form an "Axiom of Politics" (De Luca et al., 2018). This creates an adequate setup to examine how exposed individuals translate economic insecurities into political frustration, taking into account the role of the government: This dissertation examines what role representation

and compensation play for exposed individuals and tests if regional and ethnic favoritism are essential factors that influence the outcomes of FDI.

1.5 Methodological Contribution

I argue that contradicting findings can be explained by theoretical gaps and methodological decisions made in the previous literature. Therefore, the dissertation aims to advance methodological knowledge in five ways.

First, using alternative data sources for outcome variables: Existing IPE literature applies several well-established measures for labor rights, economic development, and FDI flows. I argue that some inconclusiveness can result from these data sources as they often only cover country-level information or aggregate information to one single indicator. This dissertation aims to apply alternative outcome variables that could make it possible to find robust and less biased evidence. Looking at how governments balance workers' and investors' interests, the human rights literature often uses labor rights indices that measure the de-jure quality of the overall labor law. As argued in Chapter 2, labor rights are too diverse to be captured in one index. Only applying an aggregated index per country per year, scholars have not been able to identify if FDI leads to a "race to the bottom" or "climb to the top" of labor and human rights protection. Thus, this chapter uses new labor rights data provided by Adams et al. (2017) to create indices that divide labor laws into broader distinct categories. We can only identify the connection of FDI to labor rights by disaggregating the labor rights index.

Second, the dissertation highlights the need to look at local instead of

national levels when analyzing the effect of FDI on growth and inequality (see Owen, 2019). The majority of studies use national data on economic development and FDI (e.g., see Choi, 2006; Basu and Guariglia, 2007; Bussmann, de Soysa and Oneal, 2002; Jude and Silaghi, 2016; Neumayer and de Soysa, 2005). In contrast, studies on local and regional levels indicate that it is necessary to focus on local developments as they are more heterogeneous than expected by cross-country studies (see Fortunato, Swift and Williams, 2018; Jensen, 2017; Owen, 2019). In chapters 3 and 4, it is argued that FDI creates heterogeneous growth and inequality effects confined to the place of investments. By using accumulated national growth data, one can not account for happenings at the local level. It seems absurd to believe that individual FDI projects to Mombasa, East Kenya, will affect the employment situation of individuals living 850 kilometers away at Kisumu, Lake Victory region. Instead, growth and inequality effects should be locally confined and thus lead to inconclusive findings when only taking national data. Therefore, chapters 3 to 5 move away from cross-country analyses: As often with comparative studies of developing countries, it is hard to collect reliable data on local economic development. For example, there is no reliable source of local GDP data, and the FDI flows are often aggregated on the national level. Building on the recently emerged literature on local growth effects from FDI, this dissertation applies geo-referenced data on individual FDI projects and nighttime light as a proxy for economic development and inequality to assure greater reliability of the models. This has many advantages that are further discussed in the chapter summary section.

Third, this dissertation argues that growth and inequality are not constant over time and space. While most studies argue for homogeneous national and

constant effects of FDI over time, there is good reason to believe that FDI projects have heterogeneous effects at the local level and follow non-constant patterns. Consequently, it is relevant to understand how FDI affects locations over space and time: Chapter 3 provides evidence to the claim that economic development and disparity from FDI are spatially confined to the direct FDI location while diminishing over distance to the FDI site. Chapter 4 shows that those effects change over time. Differentiating the effects of FDI by the announcement, short and long-term phases, the chapter identifies the need to account for time and duration since an FDI project is announced to measure the effects on the location and individual rightfully.

Fourth, the dissertation further follows the disaggregation path by arguing that looking at individual survey data is relevant when analyzing the effect on the individual. Thus, it is not sufficient to use aggregated indices that capture a country's or region's development as provided by the World Bank. Also, David and Harrigan highlight the fact that "the presence of aggregate gains does not preclude the existence of distributional conflicts between the employed and the unemployed and between workers with good and bad jobs" (2011, p. 27). This is addressed using disaggregated survey data (see Chapter 5). Applying such granular data should advance our knowledge about local and individual effects.

Fifth, the dissertation aims to advance the methodological debate by creating and modeling fine-grained and geo-referenced data. Through the support of newly emerging software and local data coming from satellites (nighttime light), curated investment news scrapers (FDI data), and surveys by international research networks (Afrobarometer), this dissertation combines data sources to create a powerful panel dataset covering hundreds of thousands of units and

millions of observations that allows us to measure effects within kilometers of the FDI projects. Oriented at other pioneering work in this field (Owen, 2019; Brazys and Kotsadam, 2020; Palmtag, 2020; Imai, Kim and Wang, 2021; Rommel, 2018), the dissertation applies new matching methods that require the use of the 6TB Linux Cluster provided by the Leibniz Supercomputing Center at the Bavarian Academy of Sciences and Humanities. Data of this size and models tackling many endogeneity concerns shall contribute to robust findings and future research.

1.6 Argument

As the previous literature review demonstrates, it is relevant to differentiate the economic and political consequences of FDI on national, local, and individual levels. Explaining the complex relationship between FDI and economic and political consequences will be at the center of the following four chapters. Figure 1.3 visualizes the mechanism this dissertation aims to examine.

At the national level, this dissertation aims to understand the political consequences of FDI in shaping governments to adjust their labor rights, symbolizing a compromise between investors' and individuals' interests. Chapter 2 examines how labor rights change when FDI enters and is present in a country. Thus, it looks at the national level of overall FDI and de-jure labor rights. Given the attractiveness of incoming investors for governments in developing countries, this dissertation argues that FDI leads to lower labor rights standards for those labor rights that are expensive to investors, while the labor rights that are not expensive to investors will improve.

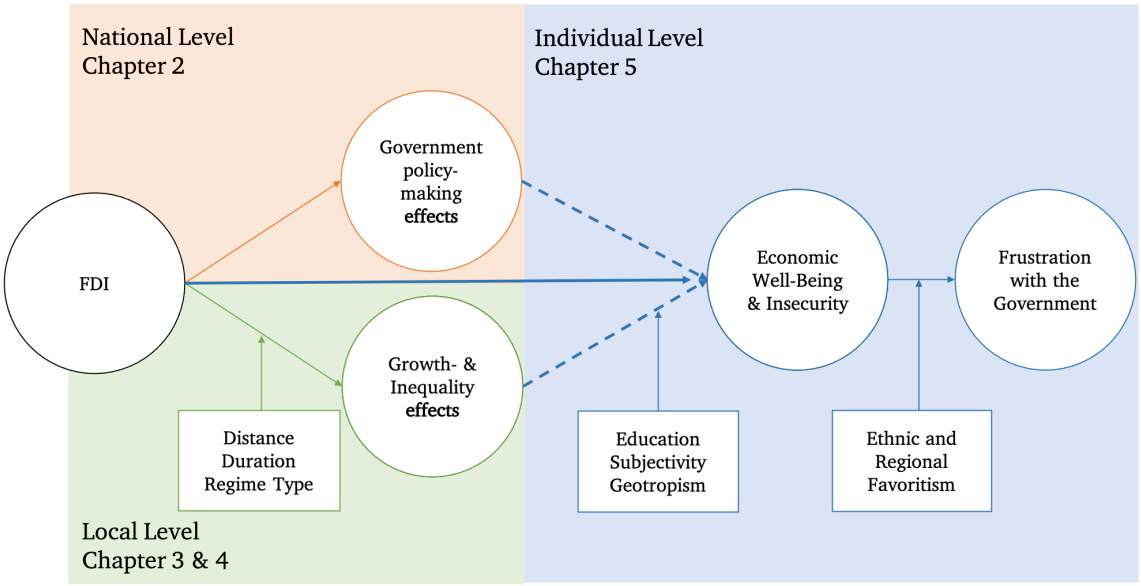

Figure 1.3: Theoretical mechanisms examined by this dissertation.

At the local level, I aim to examine the distributional economic consequences FDI stimulates. Chapters 3 and 4 examine how FDI affects economic development and disparity at the investment location over space and time. Looking at local FDI projects and nighttime light as a proxy for economic development and inequality, the chapters aim to identify local and objective effects of FDI. It is argued that due to limited spillovers, FDI will create local economic development and regional inequality effects that diminish over space. Further, Chapter 4 tests how these consequences develop over time and when they will reach a plateau.

At the individual level, Chapter 5 focuses on how distributional and economic consequences induced by FDI affect individuals' insecurities and change the political satisfaction with the government. It is argued that the effect of FDI on citizens' government satisfaction depends not only on how it creates growth and distribution effects at a given location. Instead, it also matters what exposed

individuals feel as they are influenced by people who live close to them and interact with them daily. Although trade and FDI have been shown to lead to the greater overall development of countries, some might still lose, either because they are exposed to FDI or do not benefit from trade flows and liberalization. I argue that while FDI accelerates the development of local economies over a given period, it also leads to negative distributional consequences for most less-skilled people and creates insecurities and vulnerability among citizens.

When governments fail to address the distributional impacts of FDI, individuals may translate insecurities and economic concerns into political dissatisfaction. Thus, contrary to previous expectations that FDI would politically benefit incumbents (Owen, 2019, e.g., see), this study suggests that FDI may instead lead to distrust and shape citizens' thinking about the government (see Jensen, Quinn and Weymouth, 2017; Autor et al., 2020; Che et al., 2016; Malhotra and Margalit, 2010; Algan et al., 2017; Dancygier and Donnelly, 2014; Ahlquist, Copelovitch and Walter, 2020; Frieden, 2019; Foster and Frieden, 2017). Arguing for the relevance of favoritism, Chapter 5 expects the better-connected class and individuals of preferred ethnic groups to feel more protected from incoming FDI. In what follows, I expect FDI to lead to higher political frustration, especially for those discriminated against or not represented by the national government.

1.7 Chapter Summaries

Chapter 2: Unravelling the 'Race to the Bottom' argument: Foreign Direct Investment and Different Types of Labor Rights

With Nicole Janz

Chapter 2 tries to understand the effect of foreign direct investment on labor rights in developing countries. There is a long-dated controversy in the human rights and IPE literature about whether governments change their labor rights to accommodate and advertise their country as the best location of investments (Neumayer and de Soysa, 2006; Adolph, Quince and Prakash, 2016; Wang, 2018). As labor rights represent a compromise between the interests of workers and investors, governments are asked to balance those two wisely. Therefore, any change in de jure labor rights will directly impact how individuals and investors feel about new and existing project sites.

Given that FDI is an essential source of capital, governments have liberalized national laws to attract more investments from abroad. The critical question is if governments will swing the pendulum of protection to the workers or investors. While some scholars argue for improvements in labor rights as a result of international pressure on MNCs – the so-called "climb to the top" literature (Mosley and Uno, 2007; Mosley, 2010; Greenhill, Mosley and Prakash, 2009; Lim, Mosley and Prakash, 2015) – others argue that governments will worsen their labor rights to remain attractive to investors – a phenomenon that is known as "race to the bottom" (e.g., see Blanton and Blanton, 2012; Davies and Vadlamannati, 2013; Olney, 2013).

Given contradicting empirical findings about the changes in labor rights as an outcome of foreign investments, this dissertation argues for the necessity to differentiate labor rights that are at play into different categories: While some labor rights like fair working contracts, adequate working time, dismissal protections are more expensive to investors other rights such as collective worker representation, industrial action rights are not connected to direct costs. The core argument of the second chapter is that governments will improve labor rights that are cheaper to grant (collective rights) and decrease those standards that are expensive to investors (outcome rights) to attract and retain FDI.

Therefore, the chapter expects that incoming (flow) and existing (stock) FDI will directly affect governments and create political consequences in the form of changes in de jure labor rights. To test this hypothesis, we run a panel data analysis of 75 developing countries between 1982 and 2010, comparing the different sub-types of labor rights. We use a new labor rights dataset and create sub-indices that divide labor rights between these outcomes and collective rights. To generate these sub-indices, we build on data from the Labour Regulation Index database published by the Centre for Business Research at Cambridge University (Adams et al., 2017). We find that both FDI stock and flow relate to improving collective rights. We further find that FDI flow correlates with a decline in outcome rights.

Thus, the chapter shows that governments serve workers' interests in the presence and expectation of FDI but do not if those rights would mean additional costs for investors. The chapter offers an explanation of the ongoing "climb to the top" versus "race to the bottom" debate and highlights the need to differentiate labor rights to understand how governments balance the interests of workers

and investors.

Chapter 3: Local Economic Consequences of Foreign Direct Investment in Democracies and Autocracies

With Tabea Palmtag and Tobias Rommel

Moving away from cross-country comparisons, Chapter 3 focuses on the economic consequences of FDI at the local and regional levels. While the relation between FDI and growth or inequality is an oft-explored research question, there are many inconclusive findings on when, how and if FDI creates growth (see Ram and Zhang, 2002; Blonigan and Wang, 2005; Tang, Selvanathan and Selvanathan, 2008; Nunnenkamp and Spatz, 2004; Adams, 2009; Azman-Saini, Baharumshah and Law, 2010; Carkovic and Levine, 2005). Reasons for this are, among others, that scholars often use national FDI as the independent variable and thus expect homogeneous national effects.

In contrast, we argue in this chapter that growth effects and spillovers from investments barely travel across space and are locally confined to the investment site. Especially in developing contexts that further restrict commuting and limit spillovers, FDI should mainly create growth at the FDI location, and growth rates should diminish when moving away from the investment site.

Second, the chapter argues that FDI will likewise affect regional inequality: While the FDI location should expect higher growth rates, the surrounding villages should not benefit from the FDI transfer. Instead, as proposed by firm-level theory, will highly competitive MNCs lead to crowding out effects of domestic companies (Helpman, Melitz and Yeaple, 2004; Melitz, 2003). These

companies can still be located in those surrounding places.

Finally, this chapter examines the effect of the regime type on these growth and inequality dynamics. We argue that autocratic countries can offer better investment deals, overcome administrative restrictions, and are driven to create growth as a source of legitimacy. At the same time, the public holds autocratic leaders less accountable, and investments with limited restrictions should lead to greater distributional consequences and inequality. This makes us hypothesize that growth and inequality effects should be higher in autocratic countries than in democratic places.

We test this claim by comparing locations that have received FDI with places that have not (yet) between 2003 and 2018. The chapter uses the fDi markets database provided by the Financial Times (2018) that covers over 200,000 individual cross-border greenfield investments since 2003. As shown by the few recent IPE articles that use the data, project-level FDI data allows scholars to understand local, regional, and country effects based on individual projects instead of national aggregated measures (see Owen, 2019; Brazys and Kotsadam, 2020; Palmtag, 2020). While this data comes with several limitations, further discussed in the chapter, it is the best available data containing local investment projects.

As an outcome variable, the chapter uses nighttime light gathered by weather satellites and harmonized by Li et al. (2020) as a proxy for economic development and disparity (see Cederman, Weidmann and Bormann, 2015; Chen and Nordhaus, 2011; Doll, Muller and Morley, 2006; Ebener et al., 2005; Henderson, Storeygard and Weil, 2011; Kuhn and Weidmann, 2015; Mellander et al., 2015; Proville, Zavala-Araiza and Wagner, 2017; Sutton, Elvidge and Ghosh,

2007; Weidmann and Schutte, 2017). The application of nighttime light data offers three advantages: First, nighttime light data do not rely on national statistics that can be incomplete, biased, and inconsistent. Second, nighttime light data are an objective measure that guarantees reliability (besides the general limitations of the method discussed below). Third, the measure is at a high-resolution level (one square kilometer at the equator) and is scalable to any chosen radius of FDI influx. Nonetheless, the nighttime light data come with imperfections such as clouds that are difficult to detect at night or saturation, over-glow, and blooming, which are further elaborated in Chapters 3 and 4. There are several sources for biases that affect the measurement reliability (see Mellander et al., 2015; Henderson, Storeygard and Weil, 2011; Chen and Nordhaus, 2011). Still, they can be seen as the most appropriate reflection of growth and inequality at the local level.

The chapter employs two empirical strategies: First, we draw a centroid buffer around every FDI location and see how nighttime light develops once locations are exposed to FDI. We further draw another circle around this inner circle to compare the light difference between the inner and outer circles to measure regional inequality. Increasing the buffer zones between 5 to 100 kilometers around an FDI location allows us to understand whether growth effects diminish over space. As the second empirical strategy, we have divided the world into equal-size raster cells of 10-, 25- and 50-kilometer side lengths clipped to borders. We identify those grid cells that have received FDI and compare them with the non-exposed, first-order, and second-order neighbor cells. The grid cells are also clipped to borders and, therefore, have a significant advantage over existing grid raster datasets, such as the oft-used PRIO-GRID (PRIO, 2019).

The results of both empirical setups provide clear evidence for the hypotheses: FDI creates local growth and increases intra-regional inequality and disparity. At the same time, growth effects diminish over space, which supports the claim that FDI effects are locally confined and not national. Finally, the results show that FDI to autocratic countries has higher growth and disparity effects than investments to democratic countries.

The chapter contributes to a better understanding of local growth and inequality effects from FDI and advances the knowledge of how regime types affect this influx. Moreover, the chapter further develops the recently emerged use of geo-referenced and local data and introduces a new grid raster that will potentially help future studies.

Chapter 4: Local Effects of Foreign Direct Investment: Time Matters

Chapter 4 builds on the arguments and findings made in the third chapter. While Chapter 3 has shown that the growth and disparity effects of FDI are spatially confined, this chapter examines how economic consequences develop over time. In contrast to most empirical studies that add simple lags to their models, the chapter highlights the importance of time and duration since an investment, as both economic development and inequality effects are not constant over time.

Most of the literature looks at what happens shortly after investors enter a country (often applying a varying time lag of FDI flows) instead of analyzing the long-run effects. By applying simple one-year lags to aggregated FDI inflows – customary in many parts of the IPE literature - scholars argue that only new

inflows from the last (or the kth) year will matter for individuals. Arguing that FDI projects stimulate constant effects does not allow scholars to understand the difference between short-term effects that occur during job creation and long-run spillover effects that occur years after investment.

I argue that the effects of FDI projects are not constant over time. Instead, the chapter builds on three different phases of investment effects: The announcement, short- and long-term phases. Accordingly, investments are administrated in the announcement phase and should not stimulate much economic development. In the short run, jobs are created, and immediate distributional effects occur. In the long run, economic development and inequality reach a plateau. Following this argument, I argue that economic development and disparity should only become visible a year after the investment is announced and last for about five to six years until the plateau is reached.

The chapter tests the hypothesis using local FDI and nighttime data of equal-sized cells in 156 non-OECD countries. While the empirical design is similar to the grid cell design of the previous chapter, it differs in that it is relevant to estimate the average treatment effect by year over time and not space. Given that investors can invest multiple times at the same place and that it is important not to compare city grid cells with those in deserts or rain forests, the chapter applies the "PanelMatch" estimator. This novel estimator created by Imai, Kim and Wang (2021) allows us to overcome many methodological constraints by matching units by their treatment history and refining them based on the observable development of confounders. While the estimation method does not solve all endogeneity concerns, it overcomes many limitations of existing studies that work with panel data.

Overcoming technical restrictions through the application of a 6 Terabyte RAM supercomputer system that can handle millions of observations, the chapter finds that economic effects of FDI change over time: Economic development and disparities increase in investment receiving locations from the second year and stabilize five to six years after the original investment. The finding for the relevance of time has many implications for future research as scholars need to account for the temporal dimension when assessing the effects of FDI.

Chapter 5: Local Effects of FDI on Material and Political Grievances: Evidence from Africa

The previous chapters have examined the effects of FDI on governments' labor rights decisions and regions' economic developments over space and time. The fifth chapter aims to understand how FDI affects individuals and their political frustrations with the government.

The main argument of this chapter is that FDI while having a direct impact on only a few individuals through the creation or loss of jobs, can have consequential, indirect effects on numerous workers. These indirect effects of FDI are thought to generate subjective assessments by individuals of the feelings, attitudes, emotions, and social norms that result from FDI, as opposed to the objective effects that relate to quantifiable growth and inequality impacts at the FDI location. Even if a region experiences economic development as a result of the investment, an individual may still harbor contrary feelings, develop anxieties, and perceive vulnerability to FDI exposure (Walter, 2017, e.g., see Scheve and Slaughter, 2004; Walter, 2010). In line with existing studies, this

paper posits that FDI may increase the elasticity of labor demand, leading to greater wage and employment volatility. Ultimately, this may indirectly threaten the security of workers as they are affected by economic fluctuations and rising inequality.

The dissertation follows the argumentation of heterogeneous firm theories (Helpman, Melitz and Yeaple, 2004; Melitz, 2003) that expect FDI to hurt especially low-skilled workers connected to local companies that might face crowding-out effects and higher competition with high-productive MNCs. It is argued that due to the higher wages of FDI-exposed companies, high-skilled workers have better job positions and compete for jobs more suited for low-skilled workers, which could lead to higher unemployment rates and insecurity (see Owen, 2015). In this chapter, I argue that given the limited education and training of a significant proportion of the population in developing countries, the positive impact of FDI will be limited to a small group of direct, high-skilled beneficiaries. Contrarily, the negative distributional outcomes will create a sense of insecurity among many people living close to the investment site that does not benefit directly.

Furthermore, I argue that the sense of insecurity created by FDI initiatives depends not only on individual characteristics (egotropic) or national developments (sociotropic) but also on the peer group and immediate neighborhood that shape individuals' evaluations. This phenomenon is called geotropism. In it, individuals assess their well-being based on how the community and the people they feel closely connected to are affected. Arguing that this geotropic evaluation is relevant, we would expect that people in a group in which members feel less protected and more vulnerable to economic consequences would be more

frustrated once exposed to FDI.

The extent to which economic grievances can translate into political frustration depends on how the government responds to increasing insecurity: The chapter follows the existing literature, which expects that individuals who suffer from the economic consequences of FDI will demand greater redistributive policies and compensation (see Walter, 2010; Ahlquist, Copelovitch and Walter, 2020). It is argued that when governments are unable or unwilling to meet these demands, either by providing welfare policies or by increasing legitimacy through greater representation of marginalized groups, public frustration rises (see Broz, Frieden and Weymouth, 2021; Frieden, 2019). While financially constrained, governments of developing countries must actively choose to whom they will provide public goods. I argue that even those individuals who should feel less vulnerable to FDI due to their higher skill levels may also manifest political discontent due to their geotropic relationship with their immediate community, which lacks "political connections" (Betz and Pond, 2022) with the government. As a result, individuals living in areas that have not received adequate financial and political support from the government may feel more vulnerable or inadequately protected, leading to lower satisfaction with the government.

To test this claim, the chapter examines how regional and ethnic favoritism affects an individual's political satisfaction once exposed to FDI. The term "favoritism" typically denotes a situation in which the government gives preferential treatment to a particular group based on their socioeconomic, individual, or collective characteristics. As stated in the chapter, governments may provide disproportionate financial and political support to a particular segment of citizens to increase their likelihood of re-election or retention of power.

Specifically, I argue that individuals who live in regions that are not politically connected to their national leader (regional favoritism) or are part of an ethnic group that is excluded or even discriminated against by the government (ethnic favoritism) receive less protection by the government and report higher dissatisfaction with the government once exposed to FDI.

In the chapter, I geo-match local FDI with individual survey data from the Afrobarometer and analyze how the political satisfaction of exposed individuals differs from those that are not or not yet exposed to FDI. Controlling for the economic development and individual characteristics, I find evidence for the negative effects of FDI on political satisfaction, measured through trust, performance evaluation, and how governments handle the economy. Moreover, the results speak for the relevance of ethnic favoritism: If people feel underrepresented by the government, they report lower political satisfaction with the government once exposed to FDI. I do not find the same significant result for regional favoritism.

The results demonstrate that FDI affects individuals' political satisfaction with the government. It is shown that geotropic evaluation matters: People that belong to under-represented groups will feel more dissatisfied with the government and are, therefore, more vulnerable to globalization and increasing investments. The chapter contributes to the existing literature by examining the effect of FDI on the individual. It is the first – to my knowledge – to examine the effects of FDI on individuals favored or discriminated against by their national leader. It builds the starting point for future firm-level analysis that should indicate if MNCs also employ based on ethnic or other group criteria.

Chapter 2

Unravelling the 'Race to the Bottom' Argument: Foreign Direct Investment and Different Types of Labor Rights

With Nicole Janz

A version of this Chapter has been published in World Development (Messerschmidt and Janz, 2023).

Abstract

Does foreign direct investment (FDI) lead to better or worse labor standards in developing countries? We argue that it depends on the type of labor right and how costly it is to protect it. We propose that governments are likely to follow international pressure and 'climb to the top' of improved labor standards, but only for those rights that do not incur direct costs to foreign investors, such as collective bargaining rights. In contrast, we expect that governments engage in a 'race to the bottom' when it comes to rights that bear immediate costs for firms, such as overtime pay. To test our argument, we use novel data to distinguish between the legal protection of (1) fair working contracts, (2) adequate working time, (3) dismissal protections, which are more costly, versus (4) collective worker representation, and (5) industrial action rights, which are relatively cheaper to grant. Our panel data analysis for 75 developing countries (1982-2010) shows that higher FDI stock and flow is indeed connected to better protection of collective rights, while FDI flow is connected to a decline in relatively expensive outcome rights. These results remain robust across a range of model specifications.

Keywords: Foreign direct investment, worker rights, labor standards, developing countries, working conditions, collective rights.

Acknowledgements

We thank Simon Deakin from the Centre for Business Research at Cambridge University for providing and explaining the raw data. We also would like to thank Rod Abouharb, Tim Büthe, Cindy Cheng, Josepha Hoppe, Erica Owen, Amy Pond, Tobias Rommel, Marcel Schliebs, Krishna Vadlamannati, as well as workshop participants at the Hochschule für Politik München IR Research Group, the Conflict & Change Group at UCL, the APSA Annual Meeting 2020, the Swiss Political Science Association Conference 2020, and the anonymous reviewers of this paper for valuable comments.

2.1 Introduction

Multinational corporations (MNCs) and their foreign direct investment (FDI) have gained unprecedented power across the world, with an often enormous impact on workers' rights. Globalization critics have long argued that increasing global FDI has led to a 'race to the bottom' in labor standards because host governments aim to keep costs of labor low to maintain a steady flow of investment into the country (Olney, 2013; Drezner, 2001). Indeed, reports about low labor standards and worker exploitation in global supply chains persist, especially in developing nations.[1] However, many cross-country studies testing this argument find, in fact, the opposite: FDI is connected to a 'climb to the top' in labor standards (Mosley and Uno, 2007; Mosley, 2010; Greenhill, Mosley and Prakash, 2009; Lim, Mosley and Prakash, 2015; Kim and Trumbore, 2010). Some have argued that the reason for a positive connection between FDI and labor rights is the negative spotlight by NGOs and international organizations, which raise reputational costs for investors and governments when exploitative labor conditions are exposed (Barry, Chad Clay and Flynn, 2013; Garriga, 2016). At the same time, at least one study finds a negative effect of FDI on labor rights (Peksen and Blanton, 2017), and some find no significant effect (Neumayer and de Soysa, 2006; Adolph, Quince and Prakash, 2016; Wang, 2018; Blanton and Peksen, 2016). The puzzle of FDI's effect on labor rights is, therefore, still unresolved.

In order to further understand the complexity of the FDI-rights nexus,

[1] See recent cases of labor rights violations on the Business & Human Rights Resource Centre's website, available at https:www.business-humanrights.org/en/issues/labour (accessed February 11th, 2021).

some studies turned towards disaggregating the independent variable, FDI, and examined how different forms of FDI impact labor rights. From these studies, we learn that manufacturing investment has a positive effect on labor rights, while service investment has a negative effect (Blanton and Blanton, 2012). Foreign investment in the form of joint ventures and greenfield investment improves labor rights, while investment in mergers and acquisitions has no significant effect (Biglaiser and Lee, 2019).

We revisit the 'race to the bottom' argument by turning our attention to the outcome variable, labor rights. We propose that the effects of FDI might depend on the particular labor right in question. We argue that governments are more likely to protect worker rights that are not immediately costly to foreign investors, such as collective labor rights (*core* standards), as it is a relatively cheap way to boost the reputation of leaders and foreign investors alike. In fact, most studies that show a positive relationship between FDI and labor rights use collective rights as their outcome measure. In contrast, we expect governments to refrain from protecting those labor rights that bear immediate costs to firms, such as working conditions (*cash* standards), to avoid potential exit threats of foreign investors.

Our study overcomes a key challenge in the existing literature. Most cross-country studies focus on only collective labor rights (Mosley and Uno, 2007; Mosley, 2010; Greenhill, Mosley and Prakash, 2009; Blanton and Blanton, 2012; Lim, Mosley and Prakash, 2015; Adolph, Quince and Prakash, 2016; Vadlamannati, 2015; Biglaiser and Lee, 2019; Payton and Woo, 2014), while much of the theory and anecdotal evidence, in fact, speak of exploitative working conditions. These studies use a well-established collective worker rights index by Mosley and

Uno (2007), which captures unionization and strike rights in law and practice (1985-2002), but it does not include other workers' rights.

Most of these studies find a positive impact of FDI on rights and how they are enforced (Mosley and Uno, 2007; Mosley, 2010; Greenhill, Mosley and Prakash, 2009; Ronconi, 2012; Lim, Mosley and Prakash, 2015; Vadlamannati, 2015), while some find no significant effect (Adolph, Quince and Prakash, 2016; Wang, 2018). An alternative measurement of labor rights, the worker rights index from the Cingranelli and Richards' (CIRI) human rights database (Cingranelli and Richards, 2010), aggregates all rights into a single index. Studies using the CIRI worker rights index find no significant or positive effects of FDI (Kim and Trumbore, 2010; Peksen and Blanton, 2017; Blanton and Peksen, 2016), and it is likely that collective rights within this index drive these results. Since the CIRI worker rights measure is not available in disaggregated form, and the index by Mosley and Uno (2007) focuses only on collective rights, the literature has stagnated because it is impossible to distinguish between different types of labor rights.

The lack of systematic cross-national data on a wider range of labor rights has hindered the theoretical refinement of the 'race to the bottom' argument. (Berliner et al., 2015, p. 97) point out that using collective labor rights as a "catch-all for working conditions" is "largely inappropriate" and might lead to generalizations that all labor rights are affected by FDI in the same way. Neumayer and de Soysa highlight that "it is possible that globalization is good for [collective] rights, but not necessarily for outcome-related labor standards" (2006, 32) such as working conditions. Davies and Vadlamannati (2013, 12) state that " 'true' labor rights policy consists of both the Mosely index of bar-

gaining rights and another, unobserved measure (such as working conditions)." The lack of cross-country studies on other important issues such as overtime pay, annual leave, or dismissal rights constitutes the "greatest barrier to empirical analysis" (Elliott and Freeman, 2003, p. 20).

To overcome these theoretical and empirical challenges, we use a novel labor rights index that distinguishes between the legal protection of fair working contracts, adequate working time, and fair dismissal; in addition to procedural rights such as collective worker representation and industrial action rights, using data which we built from the Labor Regulation Index database published by the Centre for Business Research at Cambridge University (Adams et al., 2017). Our panel data analysis for 75 developing countries (1982-2010) shows that FDI flow and stock are connected positively with the protection of collective labor rights. FDI flow is negatively connected to outcome rights, although these effects are smaller, and FDI stock remains insignificant. These results remain robust to a range of model specifications, including region and time effects, two-way fixed effects, and different lags. To the best of our knowledge, we present the first theoretical framework and cross-country analysis that demonstrate how the effects of FDI on labor rights vary according to the labor right in question, providing a new perspective on the 'race to the bottom' versus 'climb to the top' theory.

The remainder of the paper is organized as follows: Section two develops a new theory on the linkage between FDI and different forms of labor rights, section three introduces the data and models, followed by the results and robustness checks in section four. We conclude by discussing the implications for further research.

2.2 Theory: FDI and Different Forms of Labor Rights

The argument about a competitive, regulatory 'race to the bottom' rests on the idea that *all* labor rights are costly. Governments that protect labor rights face the risk that foreign investors might withdraw and invest in other countries with lower labor costs (Olney, 2013; Drezner, 2001). We refine this point and argue that this applies to *some* rights, such as collective labor rights, as empirical research has shown (Mosley and Uno, 2007; Mosley, 2010; Greenhill, Mosley and Prakash, 2009; Lim, Mosley and Prakash, 2015; Vadlamannati, 2015); but there are other labor rights that might directly raise costs for foreign investors so that governments might hesitate to provide strong protections. Our theoretical framework lays out why we believe that the 'climb to the top' theory is more plausible for collective labor standards while the 'race to the bottom' theory applies to outcome-related rights such as working conditions. Our fundamental approach corresponds roughly to distinctions made in the literature between 'process-related' collective labor standards versus 'outcome' standards such as working conditions (Mosley, 2010; Berliner et al., 2015; Barrientos and Smith, 2007; Anner, 2012). In the economic literature, an analog distinction is made between 'core' labor rights (e.g., collective rights) versus 'cash' rights (working conditions which might cost companies more 'cash') (Elliott and Freeman, 2003; Freeman, 1996).

The fact that collective worker rights, such as the freedom of association and collective bargaining or the right to strike, are generally better protected in countries where FDI is present is relatively undisputed in the literature. These *core* labor rights are fundamental in determining the relationship between work-

ers and employees as they regulate the tools that workers have to improve their situation via negotiations and strikes (Mosley and Uno, 2007). It is true that regulations such as protecting the right to strike are likely to constitute a risk for MNCs' investments. However, when a government grants the general right to strike or to collectively bargain with employers, it does not automatically mean that this happens. In fact, labor activists often criticize that the protection of collective worker rights means that the burden to improve wider working conditions remains with the employees who may - or may not - choose to bargain collectively. In many cases, employees depend on multinational corporations' investment for employment and may have little incentive or power to drive a hard bargain when it comes to their right (Heintz, 2004). The labor rights literature routinely points to the mere procedural character of collective worker rights by labeling them 'process-based' or 'enabling' rights (Mosley, 2010; Berliner et al., 2015; Barrientos and Smith, 2007; Anner, 2012). Economists have even gone further and seen these as relatively cheaper worker rights, stressing that collective rights can be granted by governments without immediately risking a massive exit of FDI (Elliott and Freeman, 2003; Freeman, 1996).

In fact, governments might not only have little to lose but a reputation to gain by protecting collective worker rights. National regulation that protects unionization and strike rights demonstrates good practice to the international community, consumers, and NGOs. We know from research about the effects of human rights shaming by NGOs and international organizations that many governments and foreign investors try to avoid the negative spotlight (Spar, 1998; Barry, Chad Clay and Flynn, 2013; DeMeritt, 2012; Garriga, 2016; Vadlamannati, Janz and Berntsen, 2018). One might even go further and argue that

protecting collective worker rights with minimal cost offers a "defense against demands from activists in advanced countries for excessive living wages or expensive working conditions" (Elliott and Freeman, 2003, p. 12). We might not go that far, but previous studies in the FDI and labor rights literature that focus on collective worker rights have, not surprisingly, found a positive effect of FDI (Mosley and Uno, 2007; Mosley, 2010; Greenhill, Mosley and Prakash, 2009; Lim, Mosley and Prakash, 2015). We, therefore, propose, in line with existing findings, that the 'climb to the top' theory is likely to be correct for collective worker rights.

Hypothesis 1: FDI is connected to better protection of collective worker rights such as worker representation and industrial action rights.

In contrast, governments might be less inclined to protect other labor rights. Due to a lack of data, we know little about FDI and working conditions such as working time, overtime pay, annual leave, fair contracts, or dismissal protections. Economists have described such standards as 'cash' standards to highlight that they "directly affect labor costs" (Elliott and Freeman, 2003, p. 13) and, thus, also potentially affect a country's competitiveness for trade and FDI. When governments legally protect these rights, they might impose immediate and direct costs for foreign investors, who now face a less flexible business environment. It is not up to employees themselves to bargain or strike for these rights, although they can if the implementation is lax, but the government sets clear regulation that affects all businesses. The labor rights literature has, therefore, labeled working conditions as 'outcome' rights because they dictate how

much employers must invest in their workers to create certain outcomes (even if employees themselves are unable or unwilling to fight for these rights).

Let us consider one type of outcome labor rights: adequate working time. Governments can set limits for workers' daily and weekly working hours, require that businesses allow adequate breaks, or pay annual holidays. Governments can also forbid excessive overtime hours to protect workers' safety and health and mandate adequate overtime premia (Davies and Voy, 2009, p. 97). Such working time regulations directly limit businesses' flexibility and raise labor costs. Another example is the protection against unfair dismissal. Governments can regulate the length of the notice period and redundancy compensation and impose other constraints on dismissal, which incurs costs for foreign investors as they cannot adjust their workforce quickly and flexibly. A third outcome right is the regulation of contracts. This sounds like a technicality, but regulating workers' contracts and the rights of full and part-time employees, as well as occasional temporary workers, has direct effects on labor costs for firms. 'Typical' working contracts are defined as full-time contracts where workers are employed with a single employer and enjoy full employee rights such as maternity leave or sick pay in a country (which costs money). A well-known loophole to evade labor law has been the use of 'atypical' workers. It is an increasingly widespread practice of governments to allow flexible, zero-hour, or temporary contracts that limit the benefits and rights of workers, such as sick pay or maternity leave. Governments that want to keep labor costs low can allow firms to maintain a large and flexible portion of their workforce on never-ending, cheap, atypical contracts, which has been criticized by labor activists in the past (Davies and Voy, 2009, p. 83). It is not surprising that developing and, especially, least developed countries that

heavily depend on foreign capital hesitate to improve regulation for outcome labor rights (Elliott and Freeman, 2003, p. 9).

There is little cross-country evidence about FDI's effects on these labor rights due to a lack of comparable data. However, there is ample anecdotal evidence that governments, if they were to decrease regulation on labor rights, they are likely to hit more expensive outcome rights first. For example, Murillo (2005) points out that the deregulatory reforms in Latin American countries in the 1980s and 1990s mostly affected the laws that protected working conditions, while deregulation of collective labor rights was far less common. Murillo found this to be "consistent with economic pressures because the former has a more direct impact on labor costs than the latter" Murillo (2005, p. 12). Out of this general trend, three countries showed remarkable changes in their labor standards: Colombia and Guatemala (in the early 1990s), and Panama (in the late 1990s) introduced better collective labor rights protection while, during the exact same period, deregulating the protection of workers' conditions. Murillo (2005) concluded that, when faced with economic pressures, working conditions in Latin America seemed to be the first to suffer from the 'race to the bottom' because they were more costly for businesses.

We, therefore, propose that the 'race to the bottom' theory applies in particular to outcome labor rights, such as the regulation of working conditions, rather than to collective rights.

Hypothesis 2: FDI is connected to worse protection of outcome labor standards such as working hours, dismissal rights, and fair contracts.

It should be noted that in our theory, we emphasize *de jure* labor standards, i.e., laws and regulations, rather than rights protection in practice, as we investigate the *regulatory* race to the bottom argument. Labor regulations are a crucial component in businesses' decisions about investment locations as they indicate the legal context and business environment in which firms operate (Berliner et al., 2015).

2.3 Data and Methods

Dependent Variable

We measure the legal protection of a range of labor rights categories, distinguishing between collective labor standards (worker representation and industrial action rights) versus outcome standards (working hours, dismissal rights, and fair contracts). Our analysis includes annual observations from up to 75 developing countries between 1982 and 2010.

To construct our dependent variable, we use the Labor Regulation Index (LRI) database from the Centre for Business Research at Cambridge University (Adams et al., 2017).[2] The database provides detailed information on the legal protection of labor standards around the world. It originally consists of 40 separate indicators, each reflecting an aspect of labor law per country and year.[3]

[2]The codings are based on laws, relevant court decisions (including statutory law and case law), and also include administrative regulation and collective agreements whenever they are widely binding and serve as 'functional equivalents' to statutes or court decisions. We thank Simon Deakin from the Centre for Business Research at Cambridge University for providing and explaining the raw data. The data can be found at: https://www.repository.cam.ac.uk/handle/1810/263766 (accessed 02 March 2020).

[3]The database was designed so that researchers can use the data at various levels of aggregation and create (weighted) composite indices from the individual indicators.

The database is increasingly used in legal studies and economics, e.g., to assess the impact of employment protection legislation on economic outcomes (Adams et al., 2019; Ferreiro and Gomez, 2019; Blanton and Peksen, 2019).

We use the 40 indicators to create a labor standards measure on three levels of aggregation (see Table 2.1).

First, we grouped the 40 raw items into five separate categories to create the following variables: (1) fair working contracts, (2) adequate working time, (3) dismissal protections, (4) collective worker representation, or (5) industrial action rights (see Level 3 in Table 2.1). Each of these categories was built from between seven and nine original items that relate to particular aspects of labor rights. Following the Centre for Business Research recommendation, we took the average rather than creating an additive measure because some variables contain more items than others. A full list of the 40 items and how we grouped them into our variables can be found in the Appendix (Table 2.6).

Second, since we are particularly interested in collective versus outcome rights, we use these five variables to build two overarching variables –collective rights versus outcome rights – which allow us to examine if there is an overall difference between these different types of rights as proposed in Hypothesis 1 and 2. The collective rights variable is the average of collective worker representation and industrial action rights. The outcome rights variable is the average of fair working contracts, adequate working time, and dismissal protections (see Level 2 in Table 2.1).

Third, we combine all categories into one overall labor standards index by taking the average, which allows us to assess overall effects and compare these with other studies on labor rights (see Level 1 in Table 2.1).

Table 2.1: Three levels of aggregation of our labor standards measure

Level 1	**Level 2**	**Level 3**
Overall labor standards	Collective rights	(1) Collective worker representation (2) Industrial action rights
	Outcome rights	(3) Fair working contracts (4) Adequate working time (5) Dismissal protections

We will enter our labor rights measure as dependent variables into our models at the three levels of aggregation separately.

Since the five categories have not been examined separately in the FDI and labor rights literature, we describe here what each captures and which weights we applied (see also Table 2.6 in the Appendix). Each of our labor standards variables is, as are the original indicators, scored between 0 and 1, whereby 1 denotes full protection, 0 no protection, and intermediate values between 0 and 1 reflect differences in the strength of the respective laws per country-year.

The variable *working contracts* captures if part-time, flexible, and agency workers have the right to equal treatment similar to 'typical' workers with a permanent contract. The variable also includes the extent to which governments limit the use of fixed-term contracts in the first place, e.g., maternity replacement, and if there is a maximum period of working for a company before the employment turns permanent (Adams et al., 2017).

The category *working time* measures different dimensions that regulate the working time, such as the strength of the legal protection of annual leave and public holiday entitlements; the duration of the normal working week and day;

limits to overtime and weekend working hours; and the payment of overtime premia.[4]

Fair dismissal includes the length and regulation of notice periods given to workers, redundancy compensation, and if there are any constraints on dismissal that hold employers to account if the dismissal was unjust. It also captures if there are rules for redundancy selection (e.g. if the employer must follow the rules based on the number of an employee's dependents).

Collective worker representation includes the legal right to unionization, the right to collective bargaining, and if employers have the legal duty to bargain with workers. It also covers whether the extension of agreements to third parties, e.g., non-union members, whether the law allows closed shops, whether workers and unions can nominate board members in enterprises, and whether committees in companies have legal powers to decide (Adams et al., 2017). Following a similar procedure conducted by Mosley and Uno (2007), we have weighted two of the seven raw indicators within this variable - the right to unionization and the right to collective bargaining - with a factor of 2.5 to account for the relative importance governments granting these particular rights in the first place.[5]

Industrial action rights contain the right to industrial action in general, and more specifically, what types of strikes are allowed. For example, if the government grants the right to unofficial industrial action (e.g., 'wildcat' strikes) or if it allows strikes over political issues. The variable also captures legal restric-

[4]For example, annual paid leave of 30 days and working weeks of 35 hours, as well as work days of up to 8 hours, are seen as best practices and achieve higher scores.

[5]Mosley and Uno (2007) have weighted these two indicators with a factor of 10, among overall 21 indicators in the *de jure* version of their collective labor rights measure. We feel that a factor of 2.5 (less than half) among seven indicators represents a relatively conservative weighting procedure.

tions on running strikes, such as a notification period or compulsory arbitration before strikes can start, if lockouts are forbidden, or if employers are permitted to hire replacement workers during strikes. The variable consists of nine averaged indicators, out of which we weighted the general right to industrial action with a factor of 2.5 to account for its importance.

As mentioned above, each of our labor standards variables is, as are the original indicators, scored between 0 and 1, whereby 1 denotes full protection, 0 no protection, and intermediate values between 0 and 1 reflect differences in the strength of the respective laws per country-year. For comparability, we normalized the weighted variables between the 0 to 1 range. More details of our index construction are in the Appendix, Table 2.6.

Our labor standards variables are an important improvement over existing measures because they allow us to distinguish between different types of rights. Our measure is distinct from the existing index of collective worker rights by Mosley and Uno (2007) and the worker rights variable by Cingranelli and Richards (2010), which contains a range of labor rights only in one aggregated index.[6] Instead, we measure each labor standard separately, which allows a comparison of FDI's effects on different rights, in particular, the commonly neglected outcome rights.

As mentioned in the theory section, we focus on de jure rights. As well as being a good fit for our theory, measuring regulations also has the advantage that

[6]Bivariate correlations reflect the similarities between our and existing measurements. The correlation between the CIRI worker rights index and our overall index (0.18), collective (0.27), and outcome rights (0.01) are all positive. The same is true for the correlation with Mosley's de jure measurement of collective rights: correlation coefficients between Mosley's measures and ours are 0.25 for our overall index, 0.2 for our collective index, and 0.21 for our outcome rights index. Those positive bivariate relations across indices indicate that all measures capture similar but not identical aspects of labor rights.

such data tend to be more reliable than hand-coding of de facto rights violations from NGO or government reports, which might carry bias (Berliner et al., 2015) or suffer from under-reporting (Mosley, 2010, p. 100).

Figure 2.1 provides an overview of our measure by region, labor rights, and across time for 75 developing countries. On the whole, labor rights are best protected in Europe, Central Asia, and Latin America. The Sub-Saharan African and East Asian Pacific regions improved the legal protection of labor rights in the mid-1990s but still lagged behind. We also see that the protection of outcome standards (middle left), as well as collective standards (middle right), has improved over time in many regions, although there are still differences, and our analysis will examine which role FDI plays in this. Finally, the protection of our five categories of labor standards, averaged over all developing nations, has improved over time, but at different levels. For example, we see that collective worker representation in the form of unions is relatively well protected, but industrial action rights, which aim to utilize collective bargaining powers, lag behind. Work time and dismissal rights are better protected by the law if we take the average over all developing nations; it will be interesting to assess how FDI and GDP growth, which vary considerably across countries, influence these trends. Further, our correlation matrix (Table 2.7 in the Appendix) shows that the respective types of labor standards are mostly positively correlated with each other. Moreover, a scatterplot of collective and outcome rights against each other, averaged by year, shows a positive relationship between both sub-measurements (see Figure 2.3 in the Appendix).

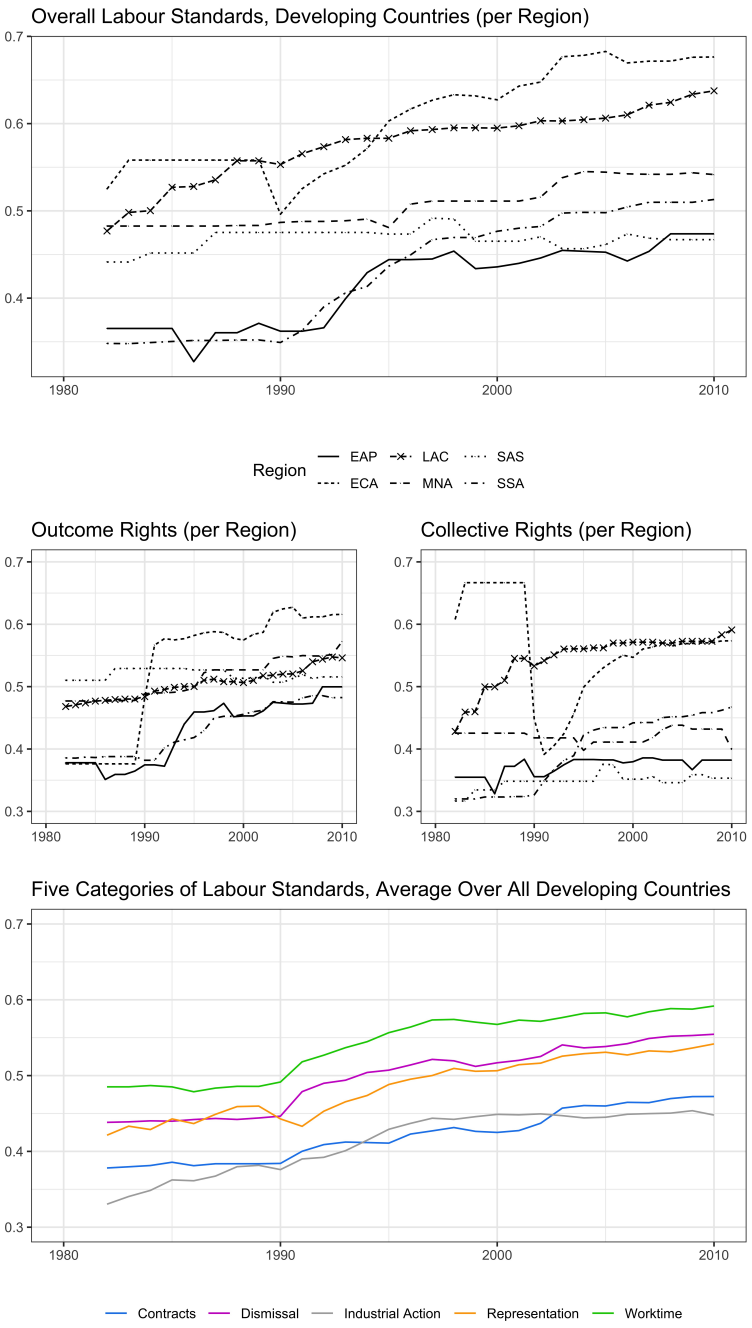

Figure 2.1: Labor standards protection in developing countries over time (1980-2010). **Top**: Average overall labor standards by region. **Middle**: Average protection of outcome standards such as fair contracts, dismissal, and work time (left) versus collective worker rights (right) per region. **Bottom**: Five categories of labor standards separately, average overall developing nations. Regions as defined by the World Bank: East-Asian Pacific (EAP), Europe & Central Asia (ECA), Latin America (LAC), Middle East & North Africa (MNA), South Asia (SAS), Sub-Saharan Africa (SSA). Higher values indicate better protection.

Independent Variables

The key independent variables of interest are logged FDI stock and FDI flow, which we take from the United Nations Conference on Trade and Development (UNCTAD, 2019). FDI stock reflects the lasting impact of investment accumulated in a country over time, indicating the leverage of foreign investors over governments in shaping public policy (Neumayer and de Soysa, 2006). FDI flow captures new investment and tells us more about annual, immediate influences on labor rights policy so that we expect the impact of FDI flow to be more pronounced (Mosley and Uno, 2007). The previous literature has used both measures in the past (Neumayer and de Soysa, 2006; Lim, Mosley and Prakash, 2015; Mosley and Uno, 2007; Greenhill, Mosley and Prakash, 2009; Blanton and Blanton, 2012; Wang, 2018; Blanton and Peksen, 2016; Peksen and Blanton, 2017), and we therefore employ both versions here. We also run robustness tests with logged FDI per capita as well as logged FDI per GDP in order to make sure results do not differ based on the transformation of our dependent variable.[7]

Following previous studies (see, e.g. Neumayer and de Soysa, 2005, 2006; Mosley and Uno, 2007; Blanton and Blanton, 2012), we employ control variables for trade, democracy, GDP growth, conflict, population size and region dummies. The *trade* variable, which is often taken as the degree of globalization, equals the sum of a country's trade (import and export) relative to GDP. The trade variable is included in the World Bank Indicators database and logged (The World Bank, 2019). Trade has been shown to produce mixed results in previous studies on collective labor rights protection (Peksen and Blanton, 2017; Kim and Trumbore,

[7]For all types of FDI, we follow Blanton and Blanton and set negative values or zeros to 1 before taking the log (Blanton and Blanton, 2009).

2010; Mosley and Uno, 2007).

The *democracy* variable indicates the existence of democratic institutions, the rule of law, and a good governance structure in a country (Janz, 2018, p.171). Empirical findings show that democratic countries protect rights better (Mosley and Uno, 2007; Neumayer and de Soysa, 2006; Lim, Mosley and Prakash, 2015; Vadlamannati, 2015). The democracy variable taken from the Polity IV database indicates the degree of democracy and ranges from -10 (autocratic) to 10 (democratic regime) (Center for Systemic Peace, 2019).

Economic growth is measured by the annual growth of GDP per capita (logged). It is often argued that the level of labor standards and human rights protection improve with higher economic growth of a country because rich countries can afford to grant such rights (Elliott and Freeman, 2003; Lim, Mosley and Prakash, 2015); also, in wealthier countries, workers might have greater opportunities for political participation (Mosley and Uno, 2007). We measure the annual change of GDP per capita taken from the World Bank Indicators database (The World Bank, 2019).

The *conflict* variable measures whether a country experienced a domestic or international conflict during a given year (1 = occurrence of domestic or international conflict, 0 = no conflict). The variable is taken from the UCDP/PRIO Armed Conflict Dataset (PRIO, 2019). Although the protection of worker rights has been shown to decline during conflict periods (Mosley and Uno, 2007), we would expect a smaller effect or no effect when it comes to our *de jure* measurement, as it is unlikely that government policies towards legal protection of workers suddenly change during conflict time.

Population contains the number of inhabitants in a country. Countries

with a larger population have been shown to exhibit a decline in rights protection (Poe, Tate and Keith, 1999; Mosley and Uno, 2007; Kim and Trumbore, 2010; Greenhill, Mosley and Prakash, 2009; Blanton and Peksen, 2016). The population variable is taken from the World Bank Indicators database and logged (The World Bank, 2019).

Following Neumayer and de Soysa (2006), Biglaiser and Lee (2019), and Mosley and Uno (2007), we include *region dummies* to control for regional characteristics in labor rights standards. In the last decades, labor rights have differed between regions with lower levels in Sub-Saharan Africa, Latin America Caribbean, the Middle East, and North Africa (Biglaiser and Lee, 2019), and there might be peer effects where labor standards diffuse within neighboring countries (Davies and Vadlamannati, 2013). We include dummies for East Asia, Europe and Central Asia, Latin America and the Caribbean, Middle East and North Africa, South Asia, and Sub-Saharan Africa.

Table 2.8 in the Appendix provides a descriptive summary of the dependent and independent variables. An overview of all variables and their sources is in Table 2.5 in the Appendix.

Models

To examine the hypotheses, we apply panel data including 75 countries (see a list of all countries in the Appendix) from 1982 to 2010. We estimate:

$$LRI_{it} = \alpha + \beta_1(lnFDI)_{i,t-1} + \beta_2(Z)_{i,t-1} + \theta_t + \sigma_i + \epsilon_{it} \tag{2.1}$$

Wherein LRI_{it} are our outcome variable of different labor rights indices, $lnFDI_{i,t-1}$ is our key explanatory variable FDI (stock or flow), $Z_{i,t-1}$ are control variables as listed above, θ_t is time dummies, σ_i regional dummy and ϵ_{it} the panel-corrected error term.

The main models are estimated using a time-fixed effects panel regression with regional dummies and panel-corrected standard errors clustered by the country (Beck and Katz, 1995).[8] Following convention, we include a one-year lag between the dependent and independent variables, and we extend the lag in our robustness section (Janz, 2018). Three main models are estimated: the first set includes our overall labor rights measure as a dependent variable; second, we distinguish between outcome versus collective worker rights; third, we disaggregate our labor rights measure into five categories. For all these models, we employ FDI stock versus FDI flow, respectively, to capture potential differences between long-term accumulated investment (stock) versus recent annual investment in a country (flow).

2.4 Results

For FDI stock, we find a positive and significant relationship between FDI and overall labor standards, while FDI flow remains insignificant (see Table 2.2, columns 1 and 4). This corresponds to much of the existing literature, the major-

[8]To decide between fixed or random effects in our panel data analysis, we employed a Hausman test, which indicated that fixed rather random effects models are more suitable (Greene, 2008, Ch. 8). The Lagrange Multiplier Test for the necessity of time effects (Breusch-Pagan) indicated time-fixed effects are appropriate (Breusch and Pagan, 1980), which is why the inclusion of time fixed effects became the main model. A test for heteroskedasticity recommends including panel-corrected standard errors to make the coefficients more robust (Breusch and Pagan, 1979).

ity of which supports the 'climb to the top' theory (e.g. Mosley and Uno, 2007; Lim, Mosley and Prakash, 2015). Since our overall measure includes a range of outcome and collective labor rights, it might well be that the positive coefficient is driven by the collective labor rights component in the overall index. Therefore, we next distinguish between outcome versus collective rights as our outcome variables.

As Table 2.2 shows, FDI stock and FDI flow are positively and significantly related to collective labor rights, i.e., the legal protection of unionization and industrial action rights (columns 2 and 5). These results are in line with much of the existing findings from studies that concentrate on collective labor rights (e.g. Lim, Mosley and Prakash, 2015; Mosley and Uno, 2007).[9] Governments might engage in a 'climb to the top' of these rights because they are not directly and immediately costly to investors, as we proposed in Hypothesis 1.

Turning to our measure of outcome labor standards, both FDI stock and FDI flow have negative coefficients, but only the coefficient of FDI flow is significant (columns 3 and 6), indicating that governments might be more reactive to new and recent investment flows into the country (Mosley and Uno, 2007), rather than FDI stock which has been present for a longer period. The coefficients are further visualized with 90 and 95 percent confidence intervals in Figure 2.2. The results partially (for the case of FDI flow) support our expectation in Hypothesis 2, for which we had argued that outcome standards are more expensive to protect; governments might try to avoid new investors threatening

[9]In concrete terms, a one percent increase in FDI is related to a 0.00004 unit change in the collective labor rights index. Mosley and Uno (2007) find effects of about the same size. Given the small scale of our labor rights measurement (0 to 1), even small changes in labor rights are relevant for workers in a country and demonstrate that policymakers adapt laws in response to the stimulus of FDI.

withdrawal. The first core result of our study is, therefore, that different labor standards are differently connected to FDI.

Table 2.2: Effect of FDI on labor rights

	Dependent variable:					
	Overall	Collective	Outcome	Overall	Collective	Outcome
	(1)	(2)	(3)	(4)	(5)	(6)
Log FDI stock	0.002*	0.004***	−0.001			
	(0.001)	(0.001)	(0.001)			
Log FDI flow				−0.001	0.003***	−0.003***
				(0.001)	(0.001)	(0.001)
Log Trade	−0.008*	−0.007	−0.004	−0.009*	−0.010	−0.002
	(0.005)	(0.006)	(0.004)	(0.005)	(0.007)	(0.004)
Log GDP Growth	0.017	0.023	0.005	0.028	0.024	0.017
	(0.027)	(0.025)	(0.023)	(0.026)	(0.025)	(0.021)
Log Population	−0.007***	−0.015***	0.003*	−0.005***	−0.015***	0.005***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)
Democracy	0.004***	0.006***	−0.0001	0.004***	0.007***	0.00005
	(0.0004)	(0.001)	(0.0004)	(0.0004)	(0.001)	(0.0003)
Conflict	0.037***	0.058***	0.001	0.038***	0.061***	−0.0001
	(0.010)	(0.011)	(0.006)	(0.010)	(0.010)	(0.006)
ECA	0.168***	0.132***	0.119***	0.164***	0.128***	0.118***
	(0.005)	(0.008)	(0.004)	(0.005)	(0.009)	(0.003)
LAC	0.150***	0.158***	0.071***	0.146***	0.153***	0.070***
	(0.004)	(0.009)	(0.007)	(0.004)	(0.009)	(0.007)
MENA	0.097***	0.086***	0.060***	0.096***	0.090***	0.055***
	(0.007)	(0.007)	(0.006)	(0.007)	(0.008)	(0.006)
SA	0.032***	−0.026***	0.065***	0.027***	−0.032***	0.064***
	(0.009)	(0.009)	(0.012)	(0.009)	(0.009)	(0.011)
SSA	0.003	0.036***	−0.025***	0.001	0.038***	−0.028***
	(0.006)	(0.009)	(0.005)	(0.006)	(0.008)	(0.005)
Observations	1 770	1 770	1 771	1 785	1 785	1 786
R^2	0.312	0.304	0.196	0.305	0.301	0.204
Adjusted R^2	0.297	0.289	0.179	0.290	0.286	0.187
F Statistic	1 524.373*** (df = 11; 1732)	525.428*** (df = 11; 1732)	420.971*** (df = 11; 1733)	1 133.566*** (df = 11; 1747)	299.479*** (df = 11; 1747)	386.000*** (df = 11; 1748)

Note: *p<0.1; **p<0.05; ***p<0.01

FDI stock and flow, overall labor standards and ‘outcome’ versus ‘collective’ rights (1982-2010) for developing nations, time fixed effects panel regression with regional dummies and panel-corrected standard errors.

We now disaggregate our labor rights measures further into five categories: representation, industrial action, contracts, work time, and dismissal protection. The results are generally consistent with our hypotheses (see Tables 2.3 and 2.4). The coefficients for FDI stock and FDI flow and two types of collective standards, i.e., representation and industrial action, are generally positive and significant (Table 2.3 column 1, Table 2.4, columns 1-2), with the exception that FDI stock is not significantly related to industrial action rights (column 2 in Table 2.3). This is in line with our hypothesis 1 and the literature on collective labor rights. Turning to the three outcome rights, higher FDI stock is significantly connected to lower protections of working time (Table 2.3 column 4), while the coefficient remains insignificant for contract rights and dismissal protections (Table 2.3 columns 3 and 5). The results for FDI flow are more pronounced than for stock, as it is negatively and significantly connected to all three outcome rights: contract regulation, working time, and dismissal (Table 2.4 columns 3-5), clearly indicating that annual investment flows are related to lower de jure rights protection as we expected in hypothesis 2. The coefficients are further visualized with 90 and 95 percent confidence intervals in Figure 2.2.

The majority of the control variables show the expected results. Growth, as well as democracy, are connected to better labor standards. Trade is negatively connected to labor standards in our models as expected Mosley and Uno (2007). Population size shows volatile coefficients across our models. Surprisingly, conflict has a positive coefficient, even though much of the human rights literature finds that conflict is related to a decline in human rights. It could well be that conflict-ridden countries still maintain their levels of labor rights protec-

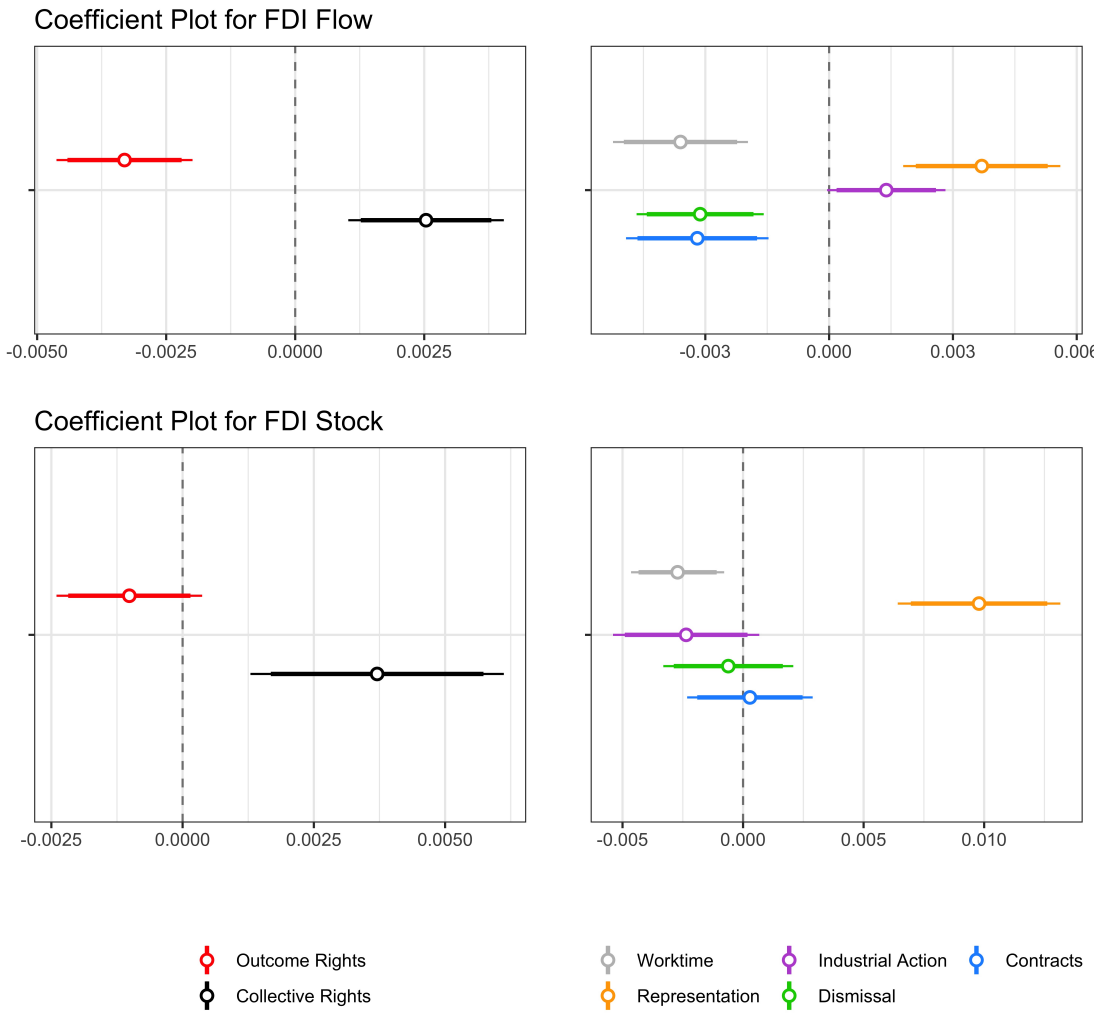

Figure 2.2: Coefficient plot of FDI flow (top) and stock (bottom) effects on collective and outcome labor standards as well as on the five categories with 90 and 95 percent confidence intervals.

Table 2.3: Effect of FDI stock on five categories of labor standards

	Dependent variable:				
	Representation	Industrial Action	Contracts	Worktime	Dismissal
	(1)	(2)	(3)	(4)	(5)
Log FDI stock	0.010***	−0.002	0.0003	−0.003***	−0.001
	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)
Log Trade	−0.023**	0.009	−0.078***	0.065***	−0.0003
	(0.009)	(0.007)	(0.011)	(0.007)	(0.006)
Log GDP Growth	0.010	0.036	−0.030	0.006	0.039*
	(0.028)	(0.031)	(0.037)	(0.031)	(0.022)
Log Population	−0.010***	−0.020***	−0.006*	0.030***	−0.016***
	(0.004)	(0.002)	(0.003)	(0.003)	(0.002)
Democracy	0.008***	0.005***	0.001	−0.003***	0.001*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Conflict	0.070***	0.046***	0.003	0.007	−0.006
	(0.013)	(0.009)	(0.013)	(0.009)	(0.008)
ECA	0.056***	0.208***	0.119***	0.128***	0.109***
	(0.010)	(0.007)	(0.008)	(0.006)	(0.007)
LAC	0.146***	0.170***	0.111***	0.033***	0.069***
	(0.014)	(0.007)	(0.012)	(0.010)	(0.010)
MENA	0.069***	0.102***	0.019**	0.087***	0.073***
	(0.011)	(0.008)	(0.008)	(0.009)	(0.013)
SA	−0.064***	0.011	−0.091***	0.178***	0.109***
	(0.010)	(0.010)	(0.022)	(0.008)	(0.011)
SSA	0.032**	0.040***	−0.005	−0.005	−0.065***
	(0.014)	(0.006)	(0.011)	(0.010)	(0.009)
Observations	1 770	1 771	1 771	1 771	1 771
R^2	0.221	0.268	0.155	0.194	0.232
Adjusted R^2	0.204	0.252	0.137	0.176	0.215
F Statistic	345.955*** (df = 11; 1732)	994.973*** (df = 11; 1733)	739.966*** (df = 11; 1733)	1 661.350*** (df = 11; 1733)	184.255*** (df = 11; 1733)
Note:					*p<0.1; **p<0.05; ***p<0.01

FDI stock and five categories of labor standards (1982-2010) for developing nations, time fixed effects panel regression with regional dummies and panel-corrected standard errors.

tion de jure, while the situation looks different for de facto protection (which we do not measure).

Table 2.4: Effect of FDI flow on five categories of labor standards

	Dependent variable:				
	Representation	Industrial Action	Contracts	Worktime	Dismissal
	(1)	(2)	(3)	(4)	(5)
Log FDI flow	0.004***	0.001*	−0.003***	−0.004***	−0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Log Trade	−0.021***	0.001	−0.076***	0.065***	0.004
	(0.008)	(0.007)	(0.010)	(0.007)	(0.006)
Log GDP Growth	0.019	0.029	−0.016	0.023	0.045**
	(0.027)	(0.031)	(0.034)	(0.029)	(0.021)
Log Population	−0.005	−0.025***	−0.004	0.030***	−0.012***
	(0.003)	(0.002)	(0.002)	(0.003)	(0.002)
Democracy	0.008***	0.005***	0.001*	−0.003***	0.002**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Conflict	0.074***	0.047***	0.001	0.008	−0.010
	(0.013)	(0.010)	(0.013)	(0.009)	(0.007)
ECA	0.049***	0.207***	0.117***	0.127***	0.109***
	(0.013)	(0.007)	(0.008)	(0.006)	(0.006)
LAC	0.144***	0.161***	0.110***	0.030***	0.071***
	(0.014)	(0.007)	(0.011)	(0.009)	(0.010)
MENA	0.079***	0.101***	0.013**	0.080***	0.071***
	(0.011)	(0.008)	(0.006)	(0.010)	(0.013)
SA	−0.077***	0.012	−0.094***	0.176***	0.108***
	(0.010)	(0.009)	(0.022)	(0.006)	(0.011)
SSA	0.036***	0.040***	−0.009	−0.008	−0.069***
	(0.013)	(0.006)	(0.011)	(0.010)	(0.008)
Observations	1 785	1 786	1 786	1 786	1 786
R^2	0.211	0.267	0.157	0.197	0.239
Adjusted R^2	0.194	0.251	0.139	0.180	0.223
F Statistic	234.248*** (df = 11; 1747)	948.762*** (df = 11; 1748)	1 002.162*** (df = 11; 1748)	1 792.498*** (df = 11; 1748)	221.136*** (df = 11; 1748)

Note: *p<0.1; **p<0.05; ***p<0.01

FDI flow and five categories of labor standards (1982-2010) for developing nations, time fixed effects panel regression with regional dummies and panel-corrected standard errors.

Robustness

We conducted a range of robustness checks to (1) include two-sided fixed effects, (2) alter the operationalization of FDI, (3) include different time lags, (4) address variation in our labor rights variable, (5) use an unweighted version of our labor standards measure, (6) address the potential interrelationship between collective rights and outcome standards, (7) employ a fractional logit regression, (8) replace FDI flow with a dummy indicating if FDI entered a country or not, (9) use non-OECD countries instead of developing nations. The results remain largely the same.

First, we included both time and country dummies (two-way fixed effects), which does not substantially change our results (see Table 2.9 and 2.10). The inclusion of fixed effects has been seen as critical because many independent variables remain relatively similar over time so that "the inclusion of fixed effects would greatly dilute the implied importance of these variables" (Mosley and Uno, 2007, p. 936). We, therefore, decided to follow the convention in the literature and present region dummies instead of country-fixed effects in our main models (see Neumayer and de Soysa, 2006; Mosley and Uno, 2007; Biglaiser and Lee, 2019). Nonetheless, applying two-way fixed effects models is especially promising and speaks for our findings (see Appendix Table 2.9).

Second, we changed the operationalization of FDI stock and flow. Instead of taking the logarithm of FDI stock and flow, we ran the main models with the logarithm of FDI per capita as well as FDI per GDP, which does generally not affect the results in the year fixed effects as well as the two-sided fixed effects models (see Appendix Tables 2.11,2.12,2.13, and 2.14). Third, we extended the

one-year lag of the main model and applied two and three-year lags. Although a one-year lag between independent and dependent variables seems reasonable for governments to react to changes in FDI (see Kim and Trumbore, 2010), the effects might differ when more time has passed. We find that most results and the model fit remain stable across one-, two-, and three-year lags (see Appendix Tables 2.15 and 2.16).

Fourth, following Neumayer and de Soysa (2006), we transformed our dependent and independent variables into three-year averages because de jure labor rights display limited annual variation. The results show no substantial changes to the main findings (see Appendix Tables 2.17 and 2.18). Fifth, we removed the weights included in the construction of our labor rights index, finding generally similar effects (see Appendix Table 2.19).

Sixth, it has been argued that the protection of collective standards might influence future regulation of outcome standards, and vice versa (Berliner et al., 2015). This interrelationship argument has not been tested in the literature due to a lack of systematic data. While this is not our focus, we have addressed this in a preliminary analysis. For the models using outcome standards as a dependent variable, we now included collective rights as control, and for models with collective standards, we included outcome rights. The results for FDI flow and FDI stock remain generally similar. We also find that both types of rights seem to positively reinforce each other, displaying positive and significant associations (see Appendix 2.20).

Seventh, we employed a fractional logit regression because our labor rights indices range between 0 and 1 (with intermittent scores in between); some of the scores are, for some cases, relatively time-invariant. The results stay

largely unchanged (see Appendix Tables 2.21 and 2.22). Eighth, we account for the volatility of FDI flow over time and country by introducing a dummy variable that indicates whether FDI entered a country (yes=1) or not (0) by recoding our FDI flow variable (see Kim and Trumbore, 2010). As Table 2.23 in the Appendix shows, the coefficients' sizes are slightly larger, while the direction and significance remain the same. Finally, we changed the case selection from developing countries to non-OECD countries to compare our results with samples used in some other studies (see Janz, 2018; Kim and Trumbore, 2010). We find that for non-OECD countries, the main effects for FDI are stable (see Appendix Table 2.6), while a few of the control variables' coefficients change, possibly due to the inclusion of wealthier non-OECD countries.

As always in studies on FDI and rights, a potential limitation is a risk of omitted variable bias and endogeneity. To the best of our knowledge, the literature on FDI and human rights has not yet identified an instrumental variable (IV) that works well to address these issues. Instead of using a weak or unsuitable IV, which might bias our results, we have taken the above rigorous robustness checks to mitigate these risks. With our extensive use of a range of fixed effects and time lags, as well as different specifications of FDI, we go far beyond previous work. However, this limitation can never be fully ruled out.

2.5 Conclusion

The purpose of this study was to unravel the regulatory 'race to the bottom' theory and to assess the effects of FDI on different types of labor standards. We made three main contributions to the literature. First, we presented a new

theory about FDI and labor standards, which focuses on the implications of potential benefits and losses when governments regulate particular rights. Second, we presented a new cross-national index that goes beyond common measures of collective labor standards. Third, we used this data to systematically distinguish between FDI effects on collective rights versus outcome rights such as working conditions. Our results show that FDI flow and stock are connected to better protection of collective worker rights, confirming much of the existing literature (e.g. Mosley and Uno, 2007; Greenhill, Mosley and Prakash, 2009; Lim, Mosley and Prakash, 2015). We argue that such rights are relatively cheap to protect because they are not immediately costly to foreign investors, which makes withdrawal threats unlikely. Governments might even gain reputational benefits by protecting unionization and strike rights. The 'climb to the top' effect is, in a way, a relatively 'cheap climb' when it comes to collective rights. The second major finding shows that FDI flow is connected to worse protection of outcome standards such as working hours or fair contracts (and FDI stock to some degree as well). Such outcome-related rights can directly raise costs for foreign investors and might thereby increase the likelihood of a loss of FDI. This indicates that the well-known 'race to the bottom' argument by globalization skeptics applies first and foremost to outcome-related labor standards, sometimes called 'cash' rights in the economic literature, so that we might speak of a 'cash race-to-the-bottom'.

As always, future research should build on our theory and new data to explore more fine-grained mechanisms and channels through which FDI affects labor rights - be it via qualitative or quantitative analyses.

In particular, our study focused on *de jure* rights, but in future research, it would also be interesting to measure the *de facto* protection of a wider range

of worker rights. For example, Payton and Woo (2014) provided evidence that better labor regulation improves protection in practice, but their study focuses only on collective rights. We do not know if there is a gap between other types of de jure worker rights and their enforcement in the presence of FDI (the so-called 'decoupling effect'). Especially when it comes to working conditions, such a gap might be considerably larger. Further, improved data on the de facto protection of different types of labor rights would allow us to understand better where the decoupling effect is strongest - which is especially crucial in developing nations where regulation tends to be weak, e.g., due to the presence of serious corruption.

Further, it would be interesting to analyze if the relative costliness of particular labor rights varies by type of investment, following other studies that disaggregate FDI into sectors (Blanton and Blanton, 2009; Janz, 2018; Vadlamannati, Janz and de Soysa, 2020). A few studies have examined different forms of FDI and collective labor rights (Biglaiser and Lee, 2019; Blanton and Blanton, 2012), but we are not aware of cross-national studies focusing on FDI across industry sectors and the protection of working conditions.

Another fruitful avenue for future work relates to a mutual dependence on labor rights. Our robustness check has indicated that different labor rights might positively reinforce each other. Future research could examine the argument about the interdependence of labor rights (Mosley and Uno, 2007; Berliner et al., 2015) in more detail. Do process-related labor rights such as collective bargaining and unionization create sufficient leverage for workers to demand improvements in laws about working conditions? Under which domestic and international conditions are such improvements likely, and how long does it take?

We know from the literature that trade agreements often include human and labor rights articles (see, e.g., Hafner-Burton, 2010). Through the ratification of labor rights conventions (e.g., by the ILO) and (inter)regional trade agreements, the constitution of *de jure* labor rights could depend on those treaties, which could result in spill-over effects between countries. Accordingly, future research could also look at how outcome and collective rights measures relate to the spatial dependence and the political interaction of countries.

Finally, our research speaks to the literature on the repressive repertoire and policy substitution effects. Recent evidence suggests that governments strategically protect some human rights but still violate other rights instead (DeMeritt and Conrad, 2019; Payne and Abouharb, 2016; Wang, 2020) shows that states under competitive pressure tend to substitute a reduction of labor standards with forming Preferential Trade Agreements instead where they can determine labor rights bilaterally. Our results indicate that similar substitution effects might exist for labor standards, where governments protect some worker rights when it is beneficial, but not necessarily others, in the presence of FDI. Future work might explore such substitution effects across labor standards in more detail, and our study provides the data necessary to open up these new research avenues.

2.6 Appendix

Table 2.5: Variable descriptions and sources (oriented at Janz, 2018)

Variable	Description	Scores
Outcome:		
Labor standards	Own index, constructed from the Labor Regulation Index database (Adams et al., 2017); a score of 0 represents no protection, and 1 represents full rights protection, with intermittent scores in between signaling the strength of the law	0-1
FDI:		
FDI Stock	FDI stock from the UNCTAD database; negative and zero values of FDI stock were recoded to 1, then logged (UNCTAD, 2019)	continuous
FDI Flow	FDI flow from the global FDI measures from UNCTAD database; negative and zero values of FDI flow were recoded to 1, then logged (UNCTAD, 2019)	continuous
Controls:		
Trade	Sum of total trade divided by GDP (log) from World Bank Indicators database (The World Bank, 2019)	continuous
GDP growth	Annual change in GDP per capita (log) from World Bank Indicators (The World Bank, 2019)	continuous
Population	Total population (log) from World Bank Indicators (The World Bank, 2019)	continuous
Democracy	Measure of democracy level ("polity2" from Polity IV data set); scores of -10 are most autocratic states; 10 are most democratic states (Center for Systemic Peace, 2019)	-10 to +10
Conflict	International or domestic conflict in a country-year; score of 0 represents no conflict in a country-year; 1 = conflict; from UCDP/PRIO Armed Conflict Dataset (PRIO, 2019)	binary

Table 2.6: Construction of the labor standards measure

Categories	**Consists of an average of these original indicators from Adams et al. (2017)**
Fair Contracts	(1) The law determines the legal status of the worker (instead of the contracting parties) (2) Part-time workers have the right to equal treatment with full-time workers (3) Costs of dismissing part-time workers is equal to full-time workers (4) Fixed-term contracts allowed only for work of limited duration (5) Fixed-term workers have the right to equal treatment with permanent workers (6) Maximum duration of fixed-term contracts before the employment is deemed to be permanent (7) Agency work is prohibited or strictly controlled (8) Agency workers have the right to equal treatment with permanent workers
Working Time	(1) Annual leave entitlements (2) Public holiday entitlements (3) Premia for overtime work (4) Premia for weekend work (5) Maximum overtime working hours per week (6) Maximum hours of the normal working week (7) Maximum daily working hours
Dismissal	(1) Length of legally mandated notice period (2) Amount of legally mandated redundancy compensation (3) Minimum qualifying period for the case of unjust dismissal (4) Law imposes procedural constraints on dismissal (5) Law imposes substantive constraints on dismissal (6) Reinstatement of normal remedy for unfair dismissal (6) Employer must obtain the permission of a third body for dismissal (8) Redundancy selection rules in place (9) Priority selection rules for re-employment in place
Collective Representation	(1) Right to unionization *[weighted *2.5]* (2) Right to collective bargaining *[weighted *2.5]* (3) Employers have a legal duty to bargain or reach an agreement with unions (4) Extension of collective agreements to third parties, national or sectoral level (5) Law permits closed shops (6) Law gives unions or workers the right to nominate board-level directors (7) Work councils or committees have legal powers of co-decision making
Industrial Action	(1) Unofficial or 'wildcat' strike action allowed (2) Strikes over political (non-work-related) issues are permitted (3) No constraints on secondary or sympathy strikes (4) Lockouts are not permitted (5) Right to industrial action in constitution *[weighted *2.5]* (6) No mandatory waiting period prior to industrial action (7) Strikes are not unlawful in cases when the collective agreement is in place (8) Law does not mandate conciliation procedures before the strike (9) Replacement or firing of striking workers prohibited

Table 2.7: Correlation table of variables

	Overall Rights	Contracts	Worktime	Dismissal	Representation	Industrial Action	Collective Rights	Outcome Rights	Log FDI stock	Log FDI flow	Log FDI stock/GDP	Log FDI flow/GDP	Log FDI stock per Capita	Log FDI flow per Capita	Trade	Growth	Population	Democracy
Overall Rights																		
Contracts	0.64****																	
Worktime	0.59****	0.29****																
Dismissal	0.42****	0.16****	0.28****															
Representation	0.68****	0.31****	0.11****	0.01														
Industrial Action	0.68****	0.23****	0.33****	0.04*	0.37****													
Collective Rights	0.82****	0.33****	0.27****	0.03	0.83****	0.82****												
Outcome Rights	0.79****	0.72****	0.72****	0.67****	0.21****	0.28****	0.30****											
Log FDI stock	0.17****	0.08****	0.09****	0.11****	0.22****	0.01	0.14****	0.13****										
Log FDI flow	0.16****	0.04	0.07***	0.06***	0.19****	0.11****	0.18****	0.08****	0.41****									
Log FDI stock/GDP	0.17****	-0.03	0.15****	0.00	0.20****	0.17****	0.22****	0.05**	0.57****	0.31****								
Log FDI flow/GDP	0.20****	0.03	0.21****	0.03	0.12****	0.21****	0.20****	0.12****	0.40****	0.35****	0.69****							
Log FDI stock per Capita	0.34****	0.14****	0.21****	0.03	0.33****	0.26****	0.36****	0.18****	0.69****	0.38****	0.84****	0.61****						
Log FDI flow per Capita	0.34****	0.15****	0.24****	0.04*	0.27****	0.29****	0.34****	0.21****	0.51****	0.61****	0.64****	0.86****	0.79****					
Trade	0.07***	-0.09****	0.15****	0.10****	-0.04	0.14****	0.06***	0.07***	0.05**	0.11****	0.46****	0.41****	0.43****	0.41****				
Growth	0.09****	0.03	0.08****	0.08****	0.05**	0.06**	0.06***	0.09****	0.21****	0.18****	0.17****	0.22****	0.23****	0.26****	0.07***			
Population	-0.10****	-0.03	-0.13****	0.19****	-0.04	-0.27****	-0.18****	0.02	0.39****	0.22****	-0.16****	-0.13****	-0.20****	-0.15****	-0.51****	0.05**		
Democracy	0.37****	0.18****	0.25****	-0.03	0.35****	0.32****	0.40****	0.19****	0.21****	0.25****	0.19****	0.25****	0.33****	0.39****	0.12****	0.09****	-0.11****	
Conflict	-0.01	-0.04	-0.10****	0.08***	0.06**	-0.06***	0.00	-0.03	0.02	-0.06**	-0.21****	-0.18****	-0.25****	-0.24****	-0.36****	-0.04	0.37****	-0.05**

FDI, trade, GDP, and population are logged. Complete-wise correlation based on Bravais-Pearson. p<0.1 *, p<0.05**, p<0.001***

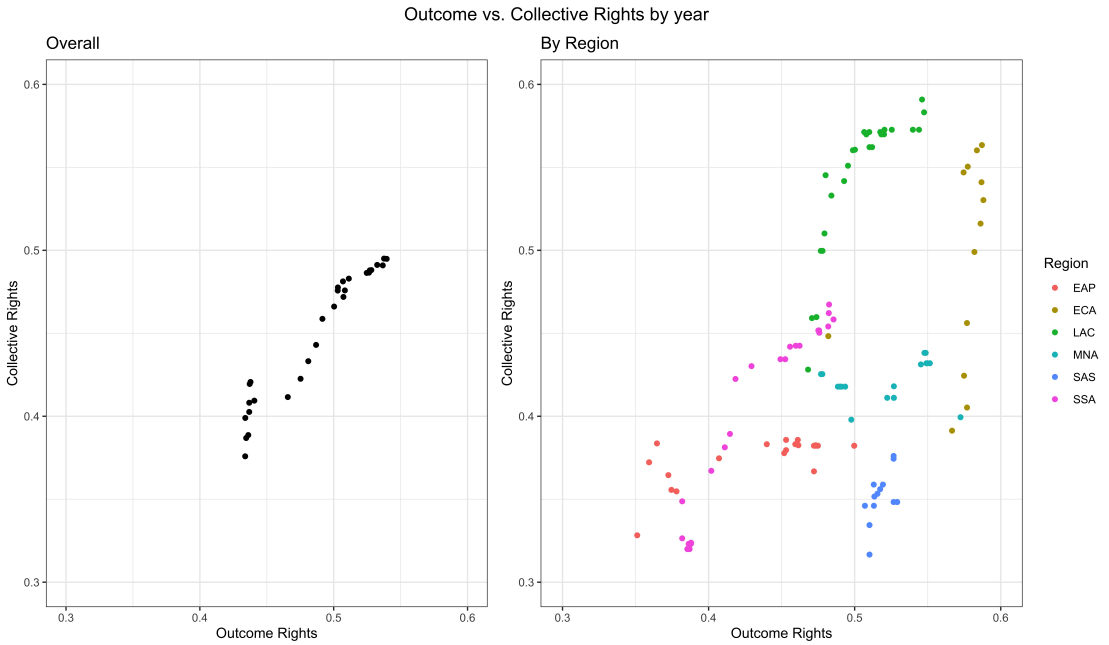

Figure 2.3: Scatterplot of the two main sub-measures (collective and outcome rights) against each other - averaged across all years (left), and by World Bank region (right).

Table 2.8: Summary statistics of variables

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
Overall Rights	1 833	0.523	0.157	0.137	0.419	0.637	0.866
Contracts	1 833	0.427	0.192	0.125	0.250	0.562	0.944
Worktime	1 833	0.556	0.163	0.076	0.471	0.659	0.874
Dismissal	1 833	0.514	0.171	0.019	0.419	0.613	0.863
Representation	1 833	0.509	0.203	0.000	0.342	0.667	1.000
Industrial Action	1 833	0.420	0.197	0.000	0.250	0.550	1.000
Collective Rights	1 833	0.464	0.166	0.081	0.328	0.583	0.889
Outcome Rights	1 833	0.499	0.123	0.142	0.401	0.589	0.767
Log FDI flow	1 833	18.279	5.174	0.000	17.646	20.955	25.466
Log FDI stock	1 833	21.535	2.819	0.000	20.417	23.141	27.238
Log FDI flow/GDP	1 833	0.200	1.697	−10.609	−0.378	1.302	3.810
Log FDI stock/GDP	1 833	2.467	1.391	−10.609	1.877	3.365	4.888
Log FDI flow per Capita	1 833	2.585	2.217	−8.639	1.249	4.163	7.793
Log FDI stock per Capita	1 833	4.972	1.913	−7.750	3.841	6.322	9.109
Log Trade	1 833	4.118	0.548	2.382	3.789	4.499	5.395
Growth	1 833	0.044	0.157	−0.978	−0.022	0.135	0.619
Log Population	1 833	16.682	1.446	13.352	15.675	17.634	21.015
Democracy	1 833	1.881	6.399	−10	−5	8	10
Conflict	1 833	0.249	0.433	0	0	0	1

Table 2.9: Effect of FDI on labor rights (two-way fixed effects)

	Dependent variable:					
	Overall	Collective	Outcome	Overall	Collective	Outcome
	(1)	(2)	(3)	(4)	(5)	(6)
Log FDI stock	0.0003	0.001*	−0.0004			
	(0.001)	(0.001)	(0.001)			
Log FDI flow				0.0003	0.001**	−0.0003
				(0.0003)	(0.0005)	(0.0002)
Log Trade	0.016***	0.012*	0.011**	0.016**	0.010	0.012**
	(0.006)	(0.007)	(0.005)	(0.006)	(0.006)	(0.005)
Log GDP Growth	0.023**	0.020*	0.014	0.025**	0.026**	0.012
	(0.011)	(0.012)	(0.009)	(0.010)	(0.011)	(0.008)
Log Population	0.034	0.022	0.036**	0.022	−0.007	0.044***
	(0.028)	(0.041)	(0.015)	(0.025)	(0.037)	(0.016)
Democracy	0.002***	0.003***	0.0005**	0.002***	0.003***	0.0005**
	(0.0003)	(0.0004)	(0.0002)	(0.0003)	(0.0004)	(0.0002)
Conflict	−0.026***	−0.022***	−0.016***	−0.025***	−0.021***	−0.016***
	(0.006)	(0.006)	(0.004)	(0.006)	(0.006)	(0.004)
Observations	1 770	1 770	1 771	1 785	1 785	1 786
R^2	0.038	0.030	0.019	0.041	0.039	0.019
Adjusted R^2	−0.023	−0.032	−0.043	−0.020	−0.022	−0.043
F Statistic	16.500*** (df = 6; 1663)	12.321*** (df = 6; 1663)	12.873*** (df = 6; 1664)	17.371*** (df = 6; 1678)	15.366*** (df = 6; 1678)	13.057*** (df = 6; 1679)

Note: *p<0.1; **p<0.05; ***p<0.01

Multivariate regression with two-way fixed effects of the labor standards indices for FDI stock and flow for developing countries, including panel corrected standard errors and one-year lagged independent variables.

Table 2.10: Effect of FDI on five categories of labor rights (two-way fixed effects)

	Dependent variable:									
	Representation	Industrial Action	Contracts	Worktime	Dismissal	Representation	Industrial Action	Contracts	Worktime	Dismissal
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Log FDI stock	0.001	0.001*	−0.002**	−0.003***	0.004***					
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)					
Log FDI flow						0.001**	0.001	−0.001***	−0.0005	0.0004
						(0.001)	(0.0005)	(0.0003)	(0.0004)	(0.0003)
Log Trade	0.017**	0.006	0.006	0.013**	0.015*	0.016**	0.005	0.006	0.014**	0.015*
	(0.008)	(0.008)	(0.006)	(0.006)	(0.008)	(0.008)	(0.007)	(0.006)	(0.007)	(0.008)
Log GDP Growth	0.015	0.025**	−0.008	0.019	0.029**	0.021	0.031***	−0.011	0.016	0.031***
	(0.014)	(0.012)	(0.012)	(0.013)	(0.012)	(0.014)	(0.012)	(0.012)	(0.013)	(0.012)
Log Population	−0.096*	0.140***	−0.271***	0.171***	0.208***	−0.129***	0.115***	−0.252***	0.195***	0.187***
	(0.050)	(0.034)	(0.032)	(0.014)	(0.018)	(0.042)	(0.034)	(0.031)	(0.016)	(0.018)
Democracy	0.004***	0.001**	0.0003	0.001*	0.0003	0.005***	0.001**	0.0004	0.001**	−0.00004
	(0.001)	(0.0004)	(0.0004)	(0.001)	(0.0003)	(0.001)	(0.0005)	(0.0004)	(0.001)	(0.0003)
Conflict	−0.025***	−0.019***	−0.013**	−0.025***	−0.010*	−0.024***	−0.019***	−0.014**	−0.026***	−0.008
	(0.007)	(0.007)	(0.006)	(0.008)	(0.005)	(0.007)	(0.006)	(0.006)	(0.008)	(0.005)
Observations	1 770	1 771	1 771	1 771	1 771	1 785	1 786	1 786	1 786	1 786
R^2	0.034	0.032	0.054	0.053	0.048	0.046	0.032	0.053	0.050	0.042
Adjusted R^2	−0.027	−0.030	−0.007	−0.008	−0.012	−0.014	−0.029	−0.007	−0.010	−0.018
F Statistic	14.833*** (df = 6; 1663)	7.538*** (df = 6; 1664)	12.482*** (df = 6; 1664)	37.581*** (df = 6; 1664)	38.038*** (df = 6; 1664)	19.142*** (df = 6; 1678)	7.638*** (df = 6; 1679)	12.552*** (df = 6; 1679)	39.219*** (df = 6; 1679)	31.810*** (df = 6; 1679)

Note: *p<0.1; **p<0.05; ***p<0.01

Multivariate regression with two-way fixed effects of the labor standards sub-indices for FDI stock and flow for developing countries, including panel corrected standard errors and one-year lagged independent variables.

Table 2.11: Effect of logged FDI per Capita on labor rights

	Dependent variable:					
	Overall	Collective	Outcome	Overall	Collective	Outcome
	(1)	(2)	(3)	(4)	(5)	(6)
Log FDI stock per Capita	0.010***	0.017***	−0.001			
	(0.002)	(0.002)	(0.001)			
Log FDI flow per Capita				0.004*	0.010***	−0.003**
				(0.002)	(0.002)	(0.001)
Log Trade	−0.019***	−0.022***	−0.005	−0.014**	−0.016**	−0.005
	(0.006)	(0.007)	(0.005)	(0.006)	(0.007)	(0.004)
Log GDP Growth	0.006	0.006	0.004	0.017	0.013	0.012
	(0.027)	(0.025)	(0.023)	(0.027)	(0.026)	(0.023)
Log Population	−0.006***	−0.013***	0.002	−0.007***	−0.012***	0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Democracy	0.003***	0.006***	−0.0002	0.004***	0.006***	−0.0001
	(0.0004)	(0.0005)	(0.0004)	(0.0004)	(0.001)	(0.0003)
Conflict	0.039***	0.061***	0.001	0.039***	0.061***	0.002
	(0.010)	(0.011)	(0.006)	(0.010)	(0.011)	(0.006)
ECA	0.166***	0.129***	0.119***	0.163***	0.128***	0.117***
	(0.004)	(0.006)	(0.004)	(0.005)	(0.008)	(0.004)
LAC	0.140***	0.144***	0.070***	0.143***	0.149***	0.069***
	(0.005)	(0.009)	(0.007)	(0.005)	(0.009)	(0.006)
MENA	0.088***	0.071***	0.059***	0.096***	0.088***	0.056***
	(0.006)	(0.006)	(0.006)	(0.007)	(0.007)	(0.005)
SA	0.041***	−0.013	0.066***	0.033***	−0.018**	0.061***
	(0.009)	(0.008)	(0.011)	(0.009)	(0.008)	(0.010)
SSA	0.002	0.035***	−0.025***	0.005	0.042***	−0.027***
	(0.006)	(0.010)	(0.005)	(0.006)	(0.009)	(0.005)
Observations	1 770	1 770	1 771	1 785	1 785	1 786
R^2	0.321	0.322	0.196	0.306	0.306	0.189
Adjusted R^2	0.306	0.307	0.179	0.291	0.291	0.172
F Statistic	1 882.462*** (df = 11; 1732)	632.104*** (df = 11; 1732)	502.427*** (df = 11; 1733)	1 052.971*** (df = 11; 1747)	339.906*** (df = 11; 1747)	403.989*** (df = 11; 1748)

Note: *p<0.1; **p<0.05; ***p<0.01

Logged FDI per Capita for developing nations, time fixed effects panel regression with regional dummies and panel-corrected standard errors.

Table 2.12: Effect of logged FDI per Capita on labor rights (two-way fixed effects)

	Dependent variable:					
	Overall	Collective	Outcome	Overall	Collective	Outcome
	(1)	(2)	(3)	(4)	(5)	(6)
Log FDI stock per Capita	0.004*	0.011***	−0.003*			
	(0.002)	(0.002)	(0.002)			
Log FDI flow per Capita				−0.001	0.001	−0.002**
				(0.001)	(0.001)	(0.001)
Log Trade	0.014**	0.007	0.012***	0.016***	0.011	0.012**
	(0.006)	(0.007)	(0.005)	(0.006)	(0.006)	(0.005)
Log GDP Growth	0.020*	0.013	0.016*	0.027**	0.026**	0.014*
	(0.011)	(0.011)	(0.009)	(0.011)	(0.011)	(0.008)
Log Population	0.056*	0.077*	0.020	0.020	−0.002	0.037**
	(0.029)	(0.043)	(0.014)	(0.025)	(0.037)	(0.015)
Democracy	0.002***	0.003***	0.0004*	0.002***	0.003***	0.0005**
	(0.0003)	(0.0004)	(0.0002)	(0.0003)	(0.0004)	(0.0002)
Conflict	−0.026***	−0.021***	−0.016***	−0.026***	−0.022***	−0.016***
	(0.006)	(0.006)	(0.004)	(0.006)	(0.006)	(0.004)
Observations	1 770	1 770	1 771	1 785	1 785	1 786
R^2	0.040	0.042	0.021	0.041	0.036	0.022
Adjusted R^2	−0.021	−0.019	−0.041	−0.020	−0.025	−0.040
F Statistic	16.389*** (df = 6; 1663)	17.904*** (df = 6; 1663)	12.703*** (df = 6; 1664)	17.222*** (df = 6; 1678)	15.093*** (df = 6; 1678)	12.849*** (df = 6; 1679)
Note:						*p<0.1; **p<0.05; ***p<0.01

Multivariate regression with two-way fixed effects of the labor standards indices for logged FDI stock and flow per capita for developing countries, including panel corrected standard errors and one-year lagged independent variables.

Table 2.13: Effect of logged FDI per GDP on labor rights

	Dependent variable:					
	Overall	Collective	Outcome	Overall	Collective	Outcome
	(1)	(2)	(3)	(4)	(5)	(6)
Log FDI stock/GDP	0.010***	0.020***	−0.003			
	(0.002)	(0.002)	(0.002)			
Log FDI flow/GDP				0.004	0.008***	−0.001
				(0.002)	(0.002)	(0.002)
Log Trade	−0.018***	−0.025***	−0.003	−0.013**	−0.013*	−0.006
	(0.005)	(0.007)	(0.005)	(0.005)	(0.007)	(0.005)
Log GDP Growth	0.012	0.014	0.005	0.020	0.022	0.008
	(0.027)	(0.024)	(0.023)	(0.027)	(0.026)	(0.023)
Log Population	−0.006***	−0.013***	0.002	−0.006***	−0.012***	0.0004
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Democracy	0.004***	0.006***	−0.0001	0.004***	0.007***	−0.0003
	(0.0004)	(0.001)	(0.0004)	(0.0004)	(0.001)	(0.0003)
Conflict	0.038***	0.060***	0.001	0.039***	0.059***	0.003
	(0.010)	(0.011)	(0.006)	(0.010)	(0.010)	(0.006)
ECA	0.170***	0.136***	0.118***	0.165***	0.131***	0.116***
	(0.005)	(0.007)	(0.004)	(0.005)	(0.008)	(0.003)
LAC	0.148***	0.155***	0.071***	0.146***	0.156***	0.066***
	(0.005)	(0.010)	(0.007)	(0.004)	(0.009)	(0.006)
MENA	0.094***	0.080***	0.060***	0.098***	0.093***	0.054***
	(0.006)	(0.006)	(0.006)	(0.007)	(0.007)	(0.005)
SA	0.034***	−0.023***	0.065***	0.031***	−0.027***	0.064***
	(0.009)	(0.009)	(0.011)	(0.009)	(0.008)	(0.010)
SSA	−0.002	0.027***	−0.024***	0.003	0.037***	−0.025***
	(0.006)	(0.010)	(0.005)	(0.005)	(0.009)	(0.005)
Observations	1 770	1 770	1 771	1 785	1 785	1 786
R^2	0.318	0.320	0.196	0.305	0.300	0.188
Adjusted R^2	0.303	0.306	0.179	0.290	0.286	0.170
F Statistic	1 866.300*** (df = 11; 1732)	609.306*** (df = 11; 1732)	460.005*** (df = 11; 1733)	1 008.869*** (df = 11; 1747)	372.295*** (df = 11; 1747)	406.599*** (df = 11; 1748)

Note: *p<0.1; **p<0.05; ***p<0.01

Logged FDI per GDP for developing nations, time fixed effects panel regression with regional dummies and panel-corrected standard errors.

Table 2.14: Effect of logged FDI per GDP on labor rights (two-way fixed effects)

	Dependent variable:					
	Overall	Collective	Outcome	Overall	Collective	Outcome
	(1)	(2)	(3)	(4)	(5)	(6)
Log FDI stock/GDP	0.004*	0.011***	−0.004**			
	(0.002)	(0.002)	(0.002)			
Log FDI flow/GDP				−0.001	0.001	−0.002*
				(0.001)	(0.001)	(0.001)
Log Trade	0.013**	0.004	0.014***	0.016***	0.011*	0.013**
	(0.006)	(0.007)	(0.005)	(0.006)	(0.006)	(0.005)
Log GDP Growth	0.021**	0.016	0.015*	0.027**	0.027**	0.013
	(0.011)	(0.011)	(0.009)	(0.011)	(0.011)	(0.008)
Log Population	0.048*	0.059	0.023*	0.020	−0.005	0.040**
	(0.028)	(0.041)	(0.014)	(0.025)	(0.037)	(0.015)
Democracy	0.002***	0.003***	0.0004*	0.002***	0.003***	0.0005**
	(0.0003)	(0.0004)	(0.0002)	(0.0003)	(0.0004)	(0.0002)
Conflict	−0.026***	−0.022***	−0.016***	−0.026***	−0.022***	−0.016***
	(0.006)	(0.006)	(0.004)	(0.006)	(0.006)	(0.004)
Observations	1 770	1 770	1 771	1 785	1 785	1 786
R^2	0.040	0.043	0.022	0.041	0.035	0.021
Adjusted R^2	−0.021	−0.018	−0.040	−0.020	−0.026	−0.041
F Statistic	16.145*** (df = 6; 1663)	18.096*** (df = 6; 1663)	12.845*** (df = 6; 1664)	17.188*** (df = 6; 1678)	14.492*** (df = 6; 1678)	12.760*** (df = 6; 1679)
Note:						*p<0.1; **p<0.05; ***p<0.01

Multivariate regression with two-way fixed effects of the labor standards indices for logged FDI stock and flow per GDP for developing countries, including panel corrected standard errors and one-year lagged independent variables.

Table 2.15: Effect of FDI on labor rights (two-year lag)

	Dependent variable:					
	Overall	Collective	Outcome	Overall	Collective	Outcome
	(1)	(2)	(3)	(4)	(5)	(6)
Log FDI stock	0.002*	0.003**	−0.001			
	(0.001)	(0.001)	(0.001)			
Log FDI flow				−0.001	0.003***	−0.003***
				(0.001)	(0.001)	(0.001)
Log Trade	−0.007	−0.006	−0.003	−0.007	−0.010	−0.001
	(0.005)	(0.006)	(0.004)	(0.005)	(0.006)	(0.004)
Log GDP Growth	0.011	0.009	0.008	0.023	0.011	0.021
	(0.028)	(0.025)	(0.023)	(0.026)	(0.025)	(0.021)
Log Population	−0.006***	−0.014***	0.003*	−0.005**	−0.015***	0.005***
	(0.002)	(0.003)	(0.002)	(0.002)	(0.003)	(0.001)
Democracy	0.004***	0.007***	−0.0001	0.004***	0.007***	0.00005
	(0.0004)	(0.001)	(0.0004)	(0.0005)	(0.001)	(0.0003)
Conflict	0.037***	0.057***	0.002	0.038***	0.060***	0.001
	(0.010)	(0.011)	(0.006)	(0.010)	(0.011)	(0.006)
ECA	0.171***	0.139***	0.118***	0.168***	0.134***	0.117***
	(0.005)	(0.006)	(0.003)	(0.005)	(0.007)	(0.003)
LAC	0.152***	0.159***	0.072***	0.148***	0.153***	0.072***
	(0.004)	(0.008)	(0.007)	(0.003)	(0.009)	(0.006)
MENA	0.098***	0.085***	0.061***	0.097***	0.089***	0.057***
	(0.006)	(0.007)	(0.006)	(0.006)	(0.007)	(0.006)
SA	0.031***	−0.028***	0.065***	0.026***	−0.033***	0.064***
	(0.009)	(0.008)	(0.012)	(0.009)	(0.008)	(0.011)
SSA	0.006	0.039***	−0.023***	0.006	0.042***	−0.026***
	(0.005)	(0.009)	(0.005)	(0.005)	(0.009)	(0.005)
Observations	1 703	1 703	1 704	1 718	1 718	1 719
R^2	0.314	0.310	0.191	0.306	0.308	0.199
Adjusted R^2	0.299	0.295	0.174	0.291	0.293	0.181
F Statistic	1 579.889*** (df = 11; 1666)	840.868*** (df = 11; 1666)	344.832*** (df = 11; 1667)	1 511.700*** (df = 11; 1681)	661.848*** (df = 11; 1681)	338.225*** (df = 11; 1682)

Note: *p<0.1; **p<0.05; ***p<0.01

Multivariate regression of the labor standards indices for FDI stock and flow for developing countries including panel corrected standard errors, time FE, and two-year lagged independent variables.

Table 2.16: Effect of FDI on labor rights (three-year lag)

	Dependent variable:					
	Overall	Collective	Outcome	Overall	Collective	Outcome
	(1)	(2)	(3)	(4)	(5)	(6)
Log FDI stock	0.001	0.003**	−0.001			
	(0.001)	(0.001)	(0.001)			
Log FDI flow				−0.001	0.003***	−0.003***
				(0.001)	(0.001)	(0.001)
Log Trade	−0.006	−0.006	−0.002	−0.007	−0.011*	−0.00001
	(0.004)	(0.006)	(0.004)	(0.005)	(0.006)	(0.004)
Log GDP Growth	0.004	0.003	0.003	0.013	0.001	0.016
	(0.027)	(0.024)	(0.023)	(0.026)	(0.024)	(0.021)
Log Population	−0.006**	−0.013***	0.003*	−0.005**	−0.015***	0.005***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.001)
Democracy	0.004***	0.007***	−0.0002	0.004***	0.007***	0.00001
	(0.0005)	(0.001)	(0.0004)	(0.0005)	(0.001)	(0.0003)
Conflict	0.038***	0.057***	0.004	0.040***	0.061***	0.003
	(0.010)	(0.011)	(0.006)	(0.010)	(0.011)	(0.006)
ECA	0.175***	0.144***	0.117***	0.171***	0.140***	0.116***
	(0.005)	(0.006)	(0.004)	(0.005)	(0.006)	(0.004)
LAC	0.154***	0.160***	0.073***	0.149***	0.153***	0.074***
	(0.004)	(0.008)	(0.007)	(0.003)	(0.008)	(0.007)
MENA	0.098***	0.083***	0.062***	0.097***	0.086***	0.058***
	(0.006)	(0.007)	(0.006)	(0.006)	(0.006)	(0.006)
SA	0.028***	−0.031***	0.064***	0.024**	−0.036***	0.063***
	(0.010)	(0.008)	(0.012)	(0.010)	(0.008)	(0.011)
SSA	0.009*	0.041***	−0.021***	0.009*	0.044***	−0.024***
	(0.005)	(0.009)	(0.005)	(0.005)	(0.009)	(0.005)
Observations	1 636	1 636	1 636	1 651	1 651	1 651
R^2	0.314	0.316	0.187	0.308	0.315	0.194
Adjusted R^2	0.299	0.301	0.169	0.293	0.300	0.177
F Statistic	1 817.488*** (df = 11; 1600)	1 136.563*** (df = 11; 1600)	380.669*** (df = 11; 1600)	1 595.723*** (df = 11; 1615)	848.499*** (df = 11; 1615)	373.086*** (df = 11; 1615)

Note: *p<0.1; **p<0.05; ***p<0.01

Multivariate regression of the labor standards indices for FDI stock and flow for developing countries including panel corrected standard errors time FE and three years lagged independent variables.

Table 2.17: Effect of FDI on labor rights (three-year average)

	Dependent variable:					
	Overall	Collective	Outcome	Overall	Collective	Outcome
	(1)	(2)	(3)	(4)	(5)	(6)
Log FDI stock	−0,00002	0,002	−0,002*			
	(0,001)	(0,002)	(0,001)			
Log FDI flow				−0,001	0,004***	−0,005***
				(0,001)	(0,002)	(0,001)
Log Trade	0,002	0,004	0,001	0,001	−0,006	0,006
	(0,007)	(0,011)	(0,007)	(0,008)	(0,012)	(0,007)
Log GDP Growth	0,035	0,056	0,003	0,041	0,048	0,016
	(0,058)	(0,064)	(0,049)	(0,058)	(0,066)	(0,044)
Log Population	−0,006*	−0,013***	0,002	−0,005*	−0,018***	0,006***
	(0,003)	(0,004)	(0,003)	(0,003)	(0,005)	(0,002)
Democracy	0,004***	0,007***	−0,0004	0,004***	0,007***	0,00001
	(0,001)	(0,001)	(0,001)	(0,001)	(0,001)	(0,001)
Conflict	0,041**	0,058***	0,007	0,039**	0,063***	0,0004
	(0,019)	(0,021)	(0,010)	(0,019)	(0,021)	(0,011)
ECA	0,166***	0,122***	0,124***	0,162***	0,117***	0,124***
	(0,009)	(0,019)	(0,007)	(0,009)	(0,019)	(0,007)
LAC	0,156***	0,159***	0,078***	0,151***	0,147***	0,080***
	(0,006)	(0,014)	(0,012)	(0,005)	(0,015)	(0,012)
MENA	0,101***	0,087***	0,063***	0,099***	0,092***	0,058***
	(0,012)	(0,010)	(0,011)	(0,012)	(0,012)	(0,011)
SA	0,047***	−0,018	0,078***	0,045**	−0,021	0,077***
	(0,017)	(0,015)	(0,020)	(0,018)	(0,015)	(0,019)
SSA	0,005	0,037**	−0,022**	0,004	0,039***	−0,026***
	(0,008)	(0,015)	(0,009)	(0,008)	(0,015)	(0,009)
Observations	589	589	589	596	596	596
R^2	0,310	0,292	0,205	0,303	0,293	0,223
Adjusted R^2	0,287	0,269	0,178	0,280	0,270	0,198
F Statistic	406,530*** (df = 11; 569)	403,275*** (df = 11; 569)	133,995*** (df = 11; 569)	−231,889 (df = 11; 576)	87,418*** (df = 11; 576)	96,569*** (df = 11; 576)
Note:						*p<0,1; **p<0,05; ***p<0,01

Multivariate regression of the three-year averaged labor standards indices for FDI stock and flow for developing countries, including panel corrected standard errors.

Table 2.18: Effect of FDI on five categories of labor rights (three-year average)

	Dependent variable:									
	Representation	Industrial Action	Contracts	Worktime	Dismissal	Representation	Industrial Action	Contracts	Worktime	Dismissal
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Log FDI stock	0,007***	−0,004*	0,00003	−0,003**	−0,002					
	(0,002)	(0,003)	(0,002)	(0,002)	(0,002)					
Log FDI flow						0,006***	0,002	−0,005**	−0,004***	−0,005***
						(0,002)	(0,001)	(0,002)	(0,002)	(0,002)
Log Trade	−0,010	0,018	−0,075***	0,069***	0,008	−0,015	0,004	−0,069***	0,073***	0,014
	(0,017)	(0,012)	(0,020)	(0,013)	(0,011)	(0,016)	(0,013)	(0,019)	(0,014)	(0,012)
Log GDP Growth	0,027	0,085	−0,025	−0,032	0,066	0,030	0,066	−0,017	−0,020	0,085*
	(0,069)	(0,074)	(0,074)	(0,070)	(0,054)	(0,073)	(0,072)	(0,065)	(0,066)	(0,050)
Log Population	−0,007	−0,018***	−0,008	0,030***	−0,016***	−0,008	−0,027***	−0,003	0,032***	−0,011***
	(0,007)	(0,003)	(0,006)	(0,005)	(0,003)	(0,006)	(0,004)	(0,004)	(0,004)	(0,003)
Democracy	0,008***	0,006***	−0,0003	−0,003***	0,002	0,008***	0,005***	0,0003	−0,003***	0,002*
	(0,002)	(0,001)	(0,001)	(0,001)	(0,001)	(0,001)	(0,001)	(0,001)	(0,001)	(0,001)
Conflict	0,071***	0,046***	0,002	0,013	0,006	0,076***	0,050***	−0,007	0,008	−0,0001
	(0,026)	(0,018)	(0,026)	(0,018)	(0,013)	(0,025)	(0,018)	(0,026)	(0,018)	(0,013)
ECA	0,047**	0,197***	0,111***	0,140***	0,120***	0,036	0,197***	0,109***	0,142***	0,120***
	(0,022)	(0,020)	(0,015)	(0,012)	(0,015)	(0,026)	(0,015)	(0,014)	(0,012)	(0,015)
LAC	0,143***	0,174***	0,118***	0,039**	0,079***	0,136***	0,158***	0,119***	0,041**	0,082***
	(0,026)	(0,014)	(0,019)	(0,018)	(0,021)	(0,024)	(0,011)	(0,017)	(0,018)	(0,021)
MENA	0,068***	0,107***	0,019	0,088***	0,084***	0,078***	0,105***	0,013	0,081***	0,078***
	(0,016)	(0,013)	(0,016)	(0,015)	(0,024)	(0,016)	(0,014)	(0,013)	(0,017)	(0,024)
SA	−0,053***	0,017	−0,069*	0,185***	0,116***	−0,060***	0,018	−0,071**	0,187***	0,116***
	(0,016)	(0,018)	(0,036)	(0,014)	(0,021)	(0,017)	(0,016)	(0,036)	(0,013)	(0,021)
SSA	0,028	0,045***	0,002	−0,006	−0,061***	0,034	0,043***	−0,003	−0,010	−0,065***
	(0,025)	(0,011)	(0,019)	(0,016)	(0,017)	(0,023)	(0,012)	(0,018)	(0,017)	(0,017)
Observations	589	589	589	589	589	596	596	596	596	596
R^2	0,208	0,267	0,141	0,206	0,256	0,209	0,260	0,149	0,214	0,266
Adjusted R^2	0,181	0,242	0,112	0,180	0,231	0,183	0,236	0,121	0,188	0,241
F Statistic	1 632,493*** (df = 11; 569)	202,783*** (df = 11; 569)	249,815*** (df = 11; 569)	1 323,129*** (df = 11; 569)	37,243*** (df = 11; 569)	519,314*** (df = 11; 576)	−775,265 (df = 11; 576)	−77 514,560 (df = 11; 576)	−130,642 (df = 11; 576)	67,974*** (df = 11; 576)

Note: *p<0,1; **p<0,05; ***p<0,01

Multivariate regression of the three-year averaged labor standards indices for FDI stock and flow for developing countries, including panel corrected standard errors.

Table 2.19: Effect of FDI on labor rights (unweighted)

	Dependent variable:					
	Overall	Collective	Outcome	Overall	Collective	Outcome
	(1)	(2)	(3)	(4)	(5)	(6)
Log FDI stock	0.0004	0.004***	−0.001			
	(0.001)	(0.001)	(0.001)			
Log FDI flow				−0.001***	0.003***	−0.003***
				(0.0005)	(0.001)	(0.001)
Log Trade	−0.001	−0.007	−0.004	−0.001	−0.010	−0.002
	(0.003)	(0.006)	(0.004)	(0.003)	(0.007)	(0.004)
Log GDP Growth	0.008	0.023	0.005	0.015	0.024	0.017
	(0.019)	(0.025)	(0.023)	(0.018)	(0.025)	(0.021)
Log Population	−0.003***	−0.015***	0.003*	−0.002**	−0.015***	0.005***
	(0.001)	(0.002)	(0.002)	(0.001)	(0.002)	(0.001)
Democracy	0.002***	0.006***	−0.0001	0.002***	0.007***	0.00005
	(0.0003)	(0.001)	(0.0004)	(0.0003)	(0.001)	(0.0003)
Conflict	0.012**	0.058***	0.001	0.012**	0.061***	−0.0001
	(0.006)	(0.011)	(0.006)	(0.006)	(0.010)	(0.006)
ECA	0.098***	0.132***	0.119***	0.096***	0.128***	0.118***
	(0.002)	(0.008)	(0.004)	(0.002)	(0.009)	(0.003)
LAC	0.075***	0.158***	0.071***	0.073***	0.153***	0.070***
	(0.003)	(0.009)	(0.007)	(0.003)	(0.009)	(0.007)
MENA	0.056***	0.086***	0.060***	0.054***	0.090***	0.055***
	(0.004)	(0.007)	(0.006)	(0.004)	(0.008)	(0.006)
SA	0.046***	−0.026***	0.065***	0.044***	−0.032***	0.064***
	(0.006)	(0.009)	(0.012)	(0.006)	(0.009)	(0.011)
SSA	−0.016***	0.036***	−0.025***	−0.018***	0.038***	−0.028***
	(0.003)	(0.009)	(0.005)	(0.003)	(0.008)	(0.005)
Observations	1 771	1 770	1 771	1 786	1 785	1 786
R^2	0.269	0.304	0.196	0.263	0.301	0.204
Adjusted R^2	0.253	0.289	0.179	0.248	0.286	0.187
F Statistic	1 196.776*** (df = 11; 1733)	525.428*** (df = 11; 1732)	420.971*** (df = 11; 1733)	1 102.355*** (df = 11; 1748)	299.479*** (df = 11; 1747)	386.000*** (df = 11; 1748)
Note:						*p<0.1; **p<0.05; ***p<0.01

Multivariate regression of the labor standards indices for FDI stock and flow for developing countries including panel corrected standard errors, one year lagged independent variables. The models use unweighted indices.

Table 2.20: Effect of FDI on labor rights (cross-validating controls)

	Dependent variable:							
	Collective Rights		Outcome Rights		Collective Rights		Outcome Rights	
	FE	2FE	FE	2FE	FE	2FE	FE	2FE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Log FDI stock	0.004***	0.001**	−0.001**	−0.0004				
	(0.001)	(0.001)	(0.001)	(0.001)				
Log FDI flow					0.003***	0.001**	−0.004***	−0.0004
					(0.001)	(0.0005)	(0.001)	(0.0002)
Outcome Rights	0.208***	0.191***			0.222***	0.196***		
	(0.013)	(0.020)			(0.012)	(0.020)		
Collective Rights			0.117***	0.062***			0.124***	0.066***
			(0.010)	(0.013)			(0.010)	(0.013)
Log Trade	−0.007	0.010	−0.004	0.009*	−0.011	0.009	−0.001	0.010*
	(0.007)	(0.007)	(0.004)	(0.005)	(0.007)	(0.006)	(0.004)	(0.005)
Log GDP Growth	0.019	0.020	−0.002	0.005	0.018	0.026**	0.011	0.003
	(0.026)	(0.012)	(0.023)	(0.007)	(0.026)	(0.011)	(0.021)	(0.007)
Log Population	−0.016***	0.013	0.005***	0.039**	−0.016***	−0.020	0.007***	0.049***
	(0.002)	(0.042)	(0.002)	(0.016)	(0.002)	(0.038)	(0.001)	(0.017)
Democracy	0.006***	0.003***	−0.001**	0.0004*	0.007***	0.003***	−0.001**	0.0004
	(0.001)	(0.0004)	(0.0004)	(0.0003)	(0.001)	(0.0004)	(0.0003)	(0.0003)
Conflict	0.059***	−0.019***	−0.007	−0.016***	0.061***	−0.018***	−0.009	−0.016***
	(0.010)	(0.006)	(0.006)	(0.004)	(0.010)	(0.006)	(0.006)	(0.004)
ECA	0.106***		0.104***		0.100***		0.102***	
	(0.008)		(0.004)		(0.009)		(0.004)	
LAC	0.143***		0.052***		0.136***		0.051***	
	(0.010)		(0.007)		(0.011)		(0.007)	
MENA	0.074***		0.048***		0.079***		0.042***	
	(0.007)		(0.005)		(0.007)		(0.005)	
SA	−0.041***		0.067***		−0.048***		0.066***	
	(0.009)		(0.012)		(0.009)		(0.011)	
SSA	0.041***		−0.030***		0.045***		−0.034***	
	(0.010)		(0.006)		(0.009)		(0.006)	
Observations	1 765	1 765	1 765	1 765	1 780	1 780	1 780	1 780
R^2	0.321	0.049	0.215	0.028	0.321	0.060	0.225	0.029
Adjusted R^2	0.306	−0.013	0.197	−0.035	0.306	−0.0005	0.208	−0.033
F Statistic	60.656*** (df = 12; 1726)	31.496*** (df = 7; 1657)	404.164*** (df = 12; 1726)	15.591*** (df = 7; 1657)	330.530*** (df = 12; 1741)	34.567*** (df = 7; 1672)	384.387*** (df = 12; 1741)	15.654*** (df = 7; 1672)

Note: *p<0.1; **p<0.05; ***p<0.01

Multivariate regression of the labor standards indices for FDI stock and flow for developing countries including panel corrected standard errors, one year lagged independent variables. The model controls for the cross-validating controls for the outcome and collective rights.

Table 2.21: Effect of FDI on labor rights (fractional logit)

	Dependent variable:					
	Overall	Collective	Outcome	Overall	Collective	Outcome
	(1)	(2)	(3)	(4)	(5)	(6)
Log FDI stock	0.010***	0.022**	0.007*			
	(0.004)	(0.009)	(0.004)			
Log FDI flow				−0.001	0.013***	−0.008***
				(0.002)	(0.003)	(0.002)
Log Trade	0.060**	0.018	0.074***	0.070***	0.005	0.098***
	(0.025)	(0.041)	(0.028)	(0.025)	(0.040)	(0.028)
Log GDP Growth	0.117**	0.136	0.143**	0.156***	0.157*	0.204***
	(0.058)	(0.087)	(0.072)	(0.057)	(0.086)	(0.070)
Log Population	0.002	−0.053***	0.035***	0.012	−0.049***	0.050***
	(0.010)	(0.016)	(0.012)	(0.009)	(0.014)	(0.012)
Democracy	0.011***	0.029***	0.004**	0.012***	0.030***	0.006***
	(0.002)	(0.003)	(0.002)	(0.002)	(0.003)	(0.002)
Conflict	0.046*	0.242***	−0.001	0.047*	0.252***	−0.004
	(0.025)	(0.039)	(0.031)	(0.024)	(0.038)	(0.031)
ECA	0.465***	0.594***	0.577***	0.459***	0.569***	0.577***
	(0.033)	(0.055)	(0.049)	(0.033)	(0.055)	(0.048)
LAC	0.336***	0.670***	0.329***	0.334***	0.652***	0.337***
	(0.038)	(0.061)	(0.049)	(0.037)	(0.061)	(0.048)
MENA	0.281***	0.402***	0.317***	0.289***	0.426***	0.320***
	(0.042)	(0.064)	(0.056)	(0.042)	(0.063)	(0.055)
SA	0.220***	−0.082	0.304***	0.205***	−0.112*	0.293***
	(0.041)	(0.067)	(0.061)	(0.041)	(0.066)	(0.060)
SSA	−0.005	0.201***	−0.012	−0.0004	0.212***	−0.008
	(0.040)	(0.054)	(0.053)	(0.039)	(0.054)	(0.052)
Constant	−0.894***	−0.300	−1.274***	−0.875***	−0.075	−1.339***
	(0.242)	(0.373)	(0.285)	(0.241)	(0.377)	(0.283)

Note: *p<0.1; **p<0.05; ***p<0.01

Fractional logit regression of the labor standards indices for FDI stock and flow for developing countries including panel corrected standard errors, one year lagged independent variables.

Table 2.22: Effect of FDI on five categories of labor rights (fractional logit)

	Dependent variable:									
	Representation	Industrial Action	Contracts	Worktime	Dismissal	Representation	Industrial Action	Contracts	Worktime	Dismissal
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Log FDI stock	0.033***	−0.003	0.015**	−0.002	0.007					
	(0.009)	(0.008)	(0.007)	(0.005)	(0.005)					
Log FDI flow						0.011***	0.007*	−0.007	−0.010***	−0.007***
						(0.003)	(0.003)	(0.004)	(0.003)	(0.003)
Log Trade	−0.019	0.095**	−0.204***	0.348***	0.079**	−0.007	0.065	−0.172***	0.353***	0.114***
	(0.042)	(0.046)	(0.046)	(0.041)	(0.038)	(0.041)	(0.045)	(0.044)	(0.040)	(0.038)
Log GDP Growth	0.027	0.131	0.108	0.105	0.228**	0.072	0.097	0.179	0.178*	0.267***
	(0.092)	(0.090)	(0.113)	(0.100)	(0.099)	(0.091)	(0.089)	(0.112)	(0.096)	(0.096)
Log Population	−0.025	−0.081***	0.005	0.146***	−0.044***	−0.004	−0.096***	0.025	0.149***	−0.023
	(0.017)	(0.020)	(0.022)	(0.017)	(0.016)	(0.014)	(0.018)	(0.019)	(0.016)	(0.015)
Democracy	0.025***	0.018***	0.009***	−0.007**	0.011***	0.026***	0.017***	0.012***	−0.006**	0.013***
	(0.003)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.003)	(0.003)	(0.003)
Conflict	0.162***	0.090**	0.007	0.023	−0.034	0.172***	0.094**	0.004	0.029	−0.044
	(0.040)	(0.040)	(0.053)	(0.041)	(0.041)	(0.039)	(0.040)	(0.053)	(0.040)	(0.041)
ECA	0.092*	0.546***	0.609***	0.613***	0.550***	0.073	0.533***	0.607***	0.609***	0.555***
	(0.050)	(0.064)	(0.077)	(0.054)	(0.073)	(0.050)	(0.064)	(0.076)	(0.053)	(0.072)
LAC	0.323***	0.402***	0.526***	0.173***	0.312***	0.318***	0.370***	0.535***	0.168***	0.332***
	(0.062)	(0.070)	(0.077)	(0.062)	(0.073)	(0.061)	(0.069)	(0.074)	(0.061)	(0.072)
MENA	0.039	0.452***	0.180*	0.425***	0.367***	0.075	0.450***	0.189**	0.410***	0.381***
	(0.071)	(0.087)	(0.094)	(0.062)	(0.072)	(0.069)	(0.085)	(0.092)	(0.062)	(0.072)
SA	−0.119	0.330***	−0.327***	0.776***	0.478***	−0.160	0.327***	−0.346***	0.764***	0.475***
	(0.108)	(0.097)	(0.083)	(0.074)	(0.091)	(0.108)	(0.097)	(0.083)	(0.073)	(0.091)
SSA	−0.075	0.110*	0.103	0.060	−0.186**	−0.058	0.105	0.110	0.059	−0.182**
	(0.053)	(0.066)	(0.078)	(0.058)	(0.075)	(0.052)	(0.066)	(0.077)	(0.057)	(0.075)
Constant	−0.743**	0.152	−0.168	−3.999***	0.295	−0.654*	0.360	−0.184	−3.950***	0.070
	(0.369)	(0.454)	(0.467)	(0.401)	(0.387)	(0.362)	(0.456)	(0.452)	(0.393)	(0.388)

Note: *p<0.1; **p<0.05; ***p<0.01

Fractional logit regression of the labor standards sub-indices for FDI stock and flow for developing countries including panel corrected standard errors, one year lagged independent variables.

Table 2.23: Effect of dichotomous FDI on labor rights

	Dependent variable:					
	Overall Time FE	Collective Time FE	Outcome Time FE	Overall 2FE	Collective 2FE	Outcome 2FE
	(1)	(2)	(3)	(4)	(5)	(6)
FDI flow Dummy	−0.033**	0.027**	−0.066***	0.007	0.016*	−0.004
	(0.013)	(0.013)	(0.014)	(0.006)	(0.009)	(0.004)
Log Trade	−0.009*	−0.007	−0.005	0.016***	0.011*	0.012**
	(0.005)	(0.007)	(0.004)	(0.006)	(0.006)	(0.005)
Log GDP Growth	0.028	0.031	0.012	0.025**	0.027**	0.011
	(0.026)	(0.025)	(0.021)	(0.010)	(0.011)	(0.008)
Log Population	−0.006***	−0.012***	0.002	0.021	−0.009	0.044***
	(0.002)	(0.002)	(0.001)	(0.025)	(0.037)	(0.016)
Democracy	0.004***	0.007***	−0.0001	0.002***	0.003***	0.0005**
	(0.0004)	(0.001)	(0.0003)	(0.0003)	(0.0004)	(0.0002)
Conflict	0.037***	0.059***	0.001	−0.025***	−0.022***	−0.016***
	(0.009)	(0.010)	(0.006)	(0.006)	(0.006)	(0.004)
ECA	0.164***	0.128***	0.117***			
	(0.005)	(0.009)	(0.003)			
LAC	0.146***	0.155***	0.069***			
	(0.004)	(0.009)	(0.007)			
MENA	0.096***	0.090***	0.055***			
	(0.007)	(0.008)	(0.006)			
SA	0.029***	−0.035***	0.069***			
	(0.009)	(0.009)	(0.011)			
SSA	0.002	0.036***	−0.027***			
	(0.006)	(0.008)	(0.005)			
Observations	1 785	1 785	1 786	1 785	1 785	1 786
R^2	0.307	0.297	0.206	0.041	0.038	0.019
Adjusted R^2	0.292	0.283	0.189	−0.020	−0.023	−0.043
F Statistic	1 104.761*** (df = 11; 1747)	313.355*** (df = 11; 1747)	359.799*** (df = 11; 1748)	17.349*** (df = 6; 1678)	14.848*** (df = 6; 1678)	13.123*** (df = 6; 1679)

Note: *p<0.1; **p<0.05; ***p<0.01

Multivariate regression of the labor standards indices for a dummy variable of FDI flow (receives FDI = 1, no or negative FDI =0) for developing countries including panel corrected standard errors, one-year lagged independent variables.

Effect of dichotomous FDI on labor rights in non-OECD countries

	Dependent variable:					
	Overall	Collective	Outcome	Overall	Collective	Outcome
	(1)	(2)	(3)	(4)	(5)	(6)
Log FDI stock	−0.001	0.001	−0.002**			
	(0.001)	(0.001)	(0.001)			
Log FDI flow				−0.002**	0.002*	−0.004***
				(0.001)	(0.001)	(0.001)
Log Trade	−0.024***	−0.023***	−0.013***	−0.024***	−0.027***	−0.009***
	(0.004)	(0.005)	(0.004)	(0.004)	(0.006)	(0.003)
Log GDP Growth	0.027	0.037	0.006	0.034	0.036	0.017
	(0.028)	(0.027)	(0.023)	(0.027)	(0.026)	(0.021)
Log Population	−0.001	−0.010***	0.007***	0.0002	−0.011***	0.009***
	(0.003)	(0.002)	(0.002)	(0.002)	(0.003)	(0.001)
Democracy	0.006***	0.009***	0.001***	0.006***	0.009***	0.001***
	(0.001)	(0.001)	(0.0003)	(0.0005)	(0.001)	(0.0003)
Conflict	0.043***	0.056***	0.012*	0.043***	0.058***	0.010
	(0.011)	(0.011)	(0.007)	(0.011)	(0.011)	(0.007)
ECA	0.182***	0.132***	0.138***	0.176***	0.128***	0.133***
	(0.007)	(0.012)	(0.004)	(0.007)	(0.012)	(0.003)
LAC	0.138***	0.150***	0.061***	0.137***	0.145***	0.063***
	(0.005)	(0.009)	(0.006)	(0.004)	(0.009)	(0.006)
MENA	0.064***	0.036***	0.057***	0.060***	0.036***	0.051***
	(0.008)	(0.008)	(0.006)	(0.008)	(0.008)	(0.006)
SA	0.001	−0.053***	0.046***	−0.0001	−0.056***	0.047***
	(0.011)	(0.009)	(0.012)	(0.011)	(0.009)	(0.011)
SSA	0.005	0.035***	−0.021***	0.005	0.037***	−0.024***
	(0.006)	(0.010)	(0.005)	(0.006)	(0.009)	(0.005)
Observations	1 800	1 800	1 801	1 828	1 828	1 829
R^2	0.328	0.335	0.219	0.320	0.334	0.222
Adjusted R^2	0.314	0.321	0.202	0.306	0.320	0.206
F Statistic	1 659.738*** (df = 11; 1762)	810.129*** (df = 11; 1762)	542.012*** (df = 11; 1763)	−1 339.311 (df = 11; 1790)	−565.972 (df = 11; 1790)	502.204*** (df = 11; 1791)

Note: *p<0.1; **p<0.05; ***p<0.01

Multivariate regression of the labor standards indices for FDI stock and flow for non-OECD countries including panel corrected standard errors and one year lagged independent variables.

List of Developing Countries Included (Defined by the World Bank)

Algeria, Angola, Argentina, Armenia, Azerbaijan, Bangladesh, Belarus, Bolivia, Botswana, Brazil, Bulgaria, Cambodia, Cameroon, Chile, China, Colombia, Congo, Costa Rica, Côted'Ivoire, Cuba, Dom. Rep., Ecuador, Egypt, Ethiopia, Gabon, Georgia, Ghana, Honduras, India, Indonesia, Iran, Jordan, Kazakhstan, Kenya, Kyrgyz, Latvia, Lesotho, Lithuania, Macedonia, Malaysia, Mali, Mexico, Moldova, Mongolia, Montenegro, Morocco, Namibia, Nicaragua, Nigeria, Pakistan, Panama, Paraguay, Peru, Philippines, Romania, Russian Federation, Rwanda, Senegal, Serbia, South Africa, Sri Lanka, Sudan, Syria, Tanzania, Thailand, Tunisia, Turkey, Uganda, Ukraine, Uruguay, Venezuela, Vietnam, Yemen, Zambia, Zimbabwe.

Chapter 3

Local Economic Consequences of Foreign Direct Investment in Democracies and Autocracies

With Tabea Palmtag and Tobias Rommel

Abstract

Governments in developing and emerging countries aim to attract FDI to generate growth. Yet, empirical studies on the country level show no clear growth effect. We argue that FDI induces concentrated benefits on the local level – in close proximity to MNCs – which leads to economic development in that area but also amplifies inter-regional economic inequality. Both effects should be stronger in autocracies compared to democracies because autocrats face fewer political constraints to create profitable investment environments. Empirically, we leverage geo-located data on FDI projects from 2003-2018, which we combine with nightlights using two approaches: concentric buffers around project locations and global 10x10km grid cells. Our estimator compares the effect of FDI on growth and inequality between areas that have already received FDI and areas that have not yet received FDI. We find strong evidence for FDI-induced local growth and regional inequality. Both effects are more pronounced in autocracies than in democracies.

Keywords: Foreign Direct Investment, growth, inequality, distance, developing countries.

Acknowledgements

We would like to thank Sarah Bauerle Danzman, Celeste Beesley, Tim Büthe, Frederick Chen, Cindy Cheng, Timur Ergen, Lisa Garbe, In Song Kim, Erica Owen, Amy Pond, Adam Rauh, Marcel Schliebs, and Stefanie Walter for helpful comments and suggestions. We are grateful to the Department of Political Science at the University of Zurich, which generously offered funding to purchase data used in this study, the Chair for International Relations at the Hochschule für Politik München for providing a highly supportive research environment, and the Leibniz Supercomputing Centre at the Technical University of Munich for access to the technical infrastructure.

3.1 Introduction

Even though governments around the globe, and especially in developing and emerging countries, strive to attract foreign direct investment (FDI) in order to generate economic growth (see, for example, Jensen, 2003, 2006; Pandya, 2016), conclusive evidence on the growth-enhancing effect of FDI is "surprisingly hard to come by" (Nunnenkamp and Spatz, 2004, 54). Notwithstanding and even in light of critical voices that hold FDI responsible for rising inequality and social conflicts, the importance of this facet of economic globalization has been growing steadily in the past decades (OECD, 2018). Many developing and emerging countries are heavily reliant on external sources of finance to bolster their economies, rendering them dependent on foreign investors' decisions to implement projects (Pandya, 2016). Because creating favorable investment conditions often comes with considerable costs, this begs the question: what exactly are the economic consequences of FDI for host countries and communities?

The notion that FDI is economically beneficial ranks among the most important, if not *the* most important, reasons for governments to attract FDI. Yet, there are conflicting accounts on the economic effects of FDI. On the one hand, Ram and Zhang (2002) as well as Blonigan and Wang (2005) find a direct positive effect on growth. More than that, some studies even find that the effect of FDI on growth is either self-reinforcing (Li and Liu, 2005) or complements the positive effect of domestic investment (Tang, Selvanathan and Selvanathan, 2008). Yet, other studies find a direct negative effect (Dutt, 1997), especially in environments that are not favorable for multinational companies (Nunnenkamp and Spatz, 2004), or find neither a growth-enhancing nor a growth-deterring

effect (Adams, 2009; Azman-Saini, Baharumshah and Law, 2010; Carkovic and Levine, 2005).

In trying to reconcile these inconclusive findings, further research stresses that FDI promotes economic growth only in conjunction with other factors. Borensztein, De Gregorio and Lee (1998), for example, argue and find that FDI exhibits a growth effect only in countries with a highly educated workforce. Yet, the debate about what exactly these conditioning factors are is still ongoing since others stress the role that a sufficient level of economic wealth (Blomström, Lipsey and Zejan, 1994), a functioning financial market (Alfaro et al., 2004; Hermes and Lensink, 2003), openness to international trade (Balasubramanyam, Salisu and Sapsford, 1996), economic stability (Bengoa and Sanchez-Robles, 2003), or a small technological development gap (De Mello, 1999) play in facilitating growth induced by FDI. Hence, even though there is some evidence that FDI might indeed lead to economic growth, the current consensus does not lend itself to the conclusion that governments should – across the board and under almost all circumstances – welcome international investment for its growth potential.

The lack of conclusive evidence on whether FDI spurs development is not only surprising but inherently problematic, as prominent theoretical arguments that facilitate our understanding of the political effects of FDI often assume that it does. Through its growth effect, FDI supposedly affects regime trajectories (Bak and Moon, 2016; Escribà-Folch, 2017; Rommel, 2018), electoral outcomes (Owen, 2019), domestic policies (Blanton and Blanton, 2012; Li, 2006), and international openness (Elkins, Guzman and Simmons, 2006; Quinn and Inclan, 1997).[1] A more nuanced picture of the economic consequences of FDI

[1]Of course, most studies go further than assuming a growth-effect of FDI and leveraging it in

that uncovers within-country geographical heterogeneity could therefore lead to different expectations with regards to the political implications of cross-border investment by multinational corporations (MNCs).

In line with this notion, we aim at making two contributions: First, we argue that FDI induces growth but that this effect is by and large restricted to the location of FDI projects. FDI primarily promotes economic growth in its direct environment by increasing the local capital stock as well as through concentrated spillovers, which manifest in close proximity to the multinational's investment location. This implies that FDI benefits domestic business and the working-age population in the vicinity of projects, yet these growth-enhancing effects do not travel to areas farther away from the location of investment. At the same time, investment by multinational corporations (MNCs) also affects the distribution of economic resources in the host economy. To assess FDI's impact on economic inequality, we combine insights from theories on agglomeration effects and firm-level theories of international openness. Highly productive multinational investors gain from openness through their superior productivity and, importantly, induce a local growth effect. On the other hand, domestic companies in other parts of a country, due to spatial distance, cannot benefit from spillover effects and face elevated domestic market competition. This leads to a growing divide in economic development between places located farther away from MNCs and areas that attract FDI, increasing inter-regional inequality. Second, we argue that political institutions determine the extent to which the economic consequences of FDI materialize. Autocratic leaders need foreign capital to bolster their output

their argumentation, but also include FDI's distributional consequences. Nevertheless, the fact that FDI allegedly promotes growth plays a sufficiently large role that should make us skeptical, given the inconclusive findings so far.

legitimacy and face fewer political obstacles to grant MNCs lucrative investment deals. Democracies are more constrained in providing favorable investment environments because citizens can hold their government to account via elections and more equal access to the judiciary. MNC activity should thus lead to faster economic development on the local level as well as higher economic inequality in autocratic countries compared to democracies.

In line with this argument, our empirical strategy also focuses on the local level. Other studies that rely on country-level aggregates discount FDI's geographically confined nature and neglect that some areas in host countries are much more likely to receive FDI. We leverage geo-located data on FDI projects to estimate the local economic effects of FDI between 2003-2018 in non-OECD countries and combine these with nightlight data using two different approaches: First, we create concentric buffers around each location that, at some point in time will receive foreign investment. Second, we use global grid cells of 10x10km size. For each unit, we calculate the average light intensity (measuring economic prosperity) and the difference in light intensity between each unit and its neighboring units (measuring inter-regional inequality). To mitigate endogeneity problems, we rely on difference-in-differences and treatment matching estimators where we compare the effect of FDI on growth and inequality between areas that have already received FDI in a given year and areas that have not yet received FDI, additionally controlling for lagged nightlights and population size. Using both approaches, we find that FDI increases economic growth (less so the greater the distance to the multinational enterprise) and inequality (more so the greater the distance to the multinational enterprise). Importantly, both the growth- and inequality-enhancing effect of FDI on the local level is more

pronounced in authoritarian countries.

We proceed as follows: In the next section, we provide a detailed theoretical account of the relationship between FDI and economic activity on the local level and elaborate on how political institutions condition these economic consequences. Section 3 presents our research design and discusses how we leverage light emissions at night and geo-coded data on FDI projects to arrive at a better understanding of its economic effects. Section 4 presents our findings on rising local growth and growing inter-regional inequality from FDI. Section 5 outlines the implications of this spatially confined growth effect for researchers and policymakers.

3.2 Theoretical Argument

In this section, we argue that FDI directly and indirectly generates economic growth but that this effect is spatially concentrated. In essence, the economic consequences of FDI are inherently *local*, which is important as investments are not evenly distributed within countries. Multinational companies invest in carefully selected locations for a very specific purpose: to increase their return on investment (Dunning, 1993, 2001). Governments allow multinational companies to enter the domestic market because they count on economic gains in the form of economic growth and job creation (Owen, 2019; Pandya, 2014). Building on these insights, we also argue that the locally beneficial effect of FDI comes at the detriment of areas not sought after by multinational investors, thereby increasing inter-regional inequality. Lastly, we argue that both the growth- and inequality-enhancing effect of FDI depend on the regime type of the host country.

Authoritarian regimes provide environments conducive to higher local growth, which produces higher inter-regional inequality at the same time.

Local Economic Growth, But Inter-Regional Inequality The economic case for the relationship between foreign direct investment and economic growth is supposedly straightforward. Entry of multinational companies increases the capital stock, which – according to neo-classical growth models – directly contributes to economic growth (Romer, 1986), especially in developing countries where capital is scarce. This effect should be even more pronounced for FDI compared to other types of capital flows because FDI is rather immobile after investment and aims at generating long-term returns (Jensen, 2006). At the same time, multinational companies demand labor, resulting in higher overall employment. More employment, in turn, leads to more purchasing power and consumption, thus even benefiting sectors other than the one directly exposed to international capital (Görg and Strobl, 2002; Markusen and Venables, 1999).

However, there are two important aspects of FDI that warrant taking the local level, as opposed to the country level, more seriously when thinking about the relationship between FDI and economic growth (for a similar plea, see Owen, 2019). First, FDI is neither evenly nor randomly distributed within countries. On the contrary, the distribution of FDI within countries depends on a number of factors foreign investors carefully screen before selecting a specific site for their investment. These local characteristics determine which areas are more or less likely to generate profits for the investor. FDI projects in the mining sector, for instance, can only be located in areas with extractable minerals, whereas successful FDI in the manufacturing industry often depends on the local infrastructure and

supply of labor. Apart from these location factors, local politics is often decisive for creating a conducive environment for foreign investors (Nielsen, Asmussen and Weatherall, 2017). This entails that some locations in countries are much more likely to host investors, while others are not attractive for FDI projects.

Second, when multinational enterprises invest in these specific locations, they increase the capital stock and produce spillover effects on the *local* level only. Because multinational companies need complementary investment, the direct neighborhood of FDI projects should immediately start to develop as well. Yet even though these benefits favor domestic business and the working-age population in the vicinity of FDI projects, the growth-enhancing effects do not travel to areas farther away from the location of investment. Domestic companies that operate in the same sector but are located in different areas see themselves confronted with increased competition. More importantly, due to differences in productivity levels, such companies cannot compete with foreign multinationals and frequently have to shut down their business or lay off personnel (Helpman, Melitz and Yeaple, 2004; Melitz, 2003). FDI should, thus, promote growth both directly, by increasing the capital stock, as well as indirectly, by benefiting some domestic firms in the same sector or other sectors of the economy. In combination with the fact that multinational investors invest in some places but not others, this argument implies that the growth-enhancing effect of FDI is restricted to the environment around the site of investment.

Our argument resonates well with findings in the literature on spillovers that showcase the importance of direct linkages between foreign multinational and domestic business (Aitken and Harrison, 1999). Spillovers occur more frequently when they directly benefit multinational companies' business model (Görg

and Greenaway, 2004; Godart and Görg, 2013). The benefits of domestic business by the presence of foreign multinationals and the possibility of becoming part of their supply chains are, however, contingent on spatial proximity (Krugman, 1991). Thus, domestic firms close to the site of investment of foreign multinationals are far more likely to benefit from FDI, which exacerbates the local effect of FDI on economic development. In contrast, firms that are not part of multinational's supply chains oftentimes see themselves confronted with overall diminishing returns the more FDI enters the domestic market.

H1: The more FDI in a specific location, the higher the economic growth in that area.

H2: The growth-inducing effect of FDI decreases in distance to the location of investment.

Through its effect on (local) economic growth, FDI also affects the distribution of economic resources within the host economy. The exact shape and form of the distributional consequences of FDI are, however, highly contested (Palmtag, Rommel and Walter, 2020). Geographical distance to FDI projects plays a central role in mediating the effect of FDI on inequality. Starting from the argument about the strong concentration of positive growth effects at the local level and contrasting this development with the overall distributive effects within countries (Lessmann, 2013), we argue that FDI contributes to rising levels of inter-regional inequality.

Rising inter-regional inequality is the product of both the spatially concentrated growth effect of FDI and a potentially growth-impeding effect occurring in distance to project locations. First, with growing distance, domestic firms are less

likely to be attractive suppliers for foreign multinationals and thus cannot profit directly from FDI (Krugman, 1991). Consequently, FDI creates new employment opportunities mainly around the project site, with regard to the foreign multinational and its suppliers, but does not contribute to more demand in more distant labor markets. Second, positive spillover effects to domestic businesses are also less likely with increasing distance to the FDI project location (Moretti, 2012). People who profit from the presence of MNCs are more likely to spend their money in the vicinity of their residences. As people tend to live in (relative) proximity to their workplace (Marchetti, 1994), higher amounts of disposable household income from new or improved employment conditions are spent on non-tradable services and other locally available consumer goods. Again, this leads to rising economic activity and higher wage levels in both the sector of investment as well as other sectors located closely around foreign investment.

In contrast, potential growth-impeding effects of FDI should be more dispersed within countries (Owen, 2019). This is especially the case for crowding-out effects. While domestic competitors can also be located closely around foreign multinationals, the increasing pressure on their market shares hits both those farther away and those located nearby. We argue that these dispersed crowding-out effects contribute to inter-regional inequality because areas farther away from foreign investors predominantly bear the costs of this capital inflow, while they do not share in the benefits of MNCs economic activities that are restricted to close-by areas. Overall, FDI leads to a rising gap in economic development between areas that profit from increased capital stock, its positive spillover effects, and improved labor market conditions and other areas that are too far away to benefit from these growth-accelerating effects.

Taken together, we argue that multinational companies both directly and indirectly generate so much economic activity that the majority of economic entities in the immediate vicinity are better off compared to areas in which foreign investors are not present. In contrast, the greater the distance to an FDI project, the lower the chances that the geographically confined growth effect spills over and materializes in the economic well-being of the workforce.

H3: The positive effect of FDI on economic activity on the local level reverses to an inequality-increasing effect the farther the distance to the location of investment.

Differences Across Regime Types Political institutions affect the economy by setting rules, thus creating incentives to engage in economic exchange (Olson, 1993). By providing certainty about future exchanges, institutions should generally foster economic development. Underscoring this notion, democracies seem to be better in offering stable growth (Chandra and Rudra, 2015), whereas it remains unclear whether democracies are also more successful in increasing overall growth (Przeworski and Limongi, 1997; Knutsen, 2021). Similarly, political institutions – both on the national and international level – affect a country's attractiveness for foreign investors (e.g., Büthe and Milner, 2008; Jensen, 2003, 2006; Li and Resnick, 2003), even though it is empirically unclear whether democracies are indeed more attractive for foreign multinationals (Li, Owen and Mitchell, 2018). We extend this line of thinking, focusing on the effectiveness of FDI to generate economic activity and argue that FDI induces higher growth rates in autocratic countries for three interrelated reasons: Autocrats are more dependent on economic growth than leaders in democracies, autocrats have the

ability to offer a beneficial investment environment, and autocrats have to offer better deals to attract international investors.

While no political leader opposes higher economic growth, autocrats should be more dependent on economic prosperity compared to their democratically elected fellow stateswomen. Because of the lack of input legitimacy, autocrats have to resort to other means to maintain their hold on power (Gerschewski, 2013). Choosing from a menu of options, political leaders in dictatorships often rely on economic growth to boost their own, and consequently the entire regime's, popularity (Treisman, 2011; Wintrobe, 1998). Autocratic leaders are thus interested in a mutually beneficial relationship between their own survival prospects, facilitated by the direct and indirect growth effects of FDI and multinational investors' return on investment.

Furthermore, we argue that autocrats are less constrained in terms of their ability to make policies (Gandhi and Przeworski, 2007; Gandhi, 2008). Whereas merely being interested in mutual gains does not guarantee that leaders offer a beneficial investment environment, autocrats have more room to maneuver and thus the ability to actually act on their promises. On top of that, autocrats may not only be interested in giving special treatment to foreign multinationals, they may actually be forced to do so. Policy flexibility is beneficial for multinational enterprises before investment takes place but poses serious risks afterwards (Büthe and Milner, 2008; Jensen, 2003). In order to counter these perceived risks, autocrats are forced to pay a risk premium to foreign investors and offer even higher benefits, for instance, in terms of tax incentives (Li, 2006), thereby creating an investment environment multinationals cannot refuse.

These dynamics lead to the conclusion that FDI should generate higher

economic growth in autocracies compared to democracies, especially on the local level. Because autocrats are dependent on economic prosperity and have the ability to provide private goods for cronies, they welcome foreign direct investment for its growth-potential. To attract foreign multinationals, autocrats offer more concessions. In addition, more autocratic settings make domestic political favoritism easier. Hence, autocrats channel FDI to areas where supporters of the regime live in order to bolster output legitimacy as well as make complementary investments to support domestic business in other sectors. The combination between an autocrat's interest in offering a mutually beneficial investment environment and investors' interest in taking advantage of such environments should bolster local growth more than it does in democratic regimes.

Nevertheless, fewer constraints and more flexibility to tailor policies towards the narrow interests of regime insiders and multinational companies come at the cost of the interests of the larger public, thus elevating the risk of increasing economic inequality. In autocracies, the population has fewer means to challenge political favoritism by dictators. The public lacks the instrument of meaningfully challenging the incumbent via regularly held, free, and fair elections and is oftentimes subjected to repressive measures if its members resort to protest to challenge the political distribution of economic resources. In addition, the lacking independence of and obstacles regarding access to the judicial system in autocratic regimes oftentimes work against the interests of the population and do not offer fair administration of justice in case of legal challenges to specific policies. This argument implies that we should expect clear differences in the economic consequences of FDI on the local level.

H4: The effect of FDI on both economic growth and economic inequality is stronger in more authoritarian countries.

3.3 Empirical Strategy

Measuring Local Growth and Inequality

To estimate the local economic consequences of foreign direct investment, we need disaggregated information on economic activity and inequality. Official national or sub-national data is, unfortunately, neither sufficiently spatially disaggregated nor flexible enough to serve as a measure for our dependent variables of interest. Hence, we focus on light emissions during nighttime. Nightlights have frequently been used and validated as a proxy for economic development and inequality (see, for example, Kuhn and Weidmann, 2015; Cederman, Weidmann and Bormann, 2015) and come with one major advantage: nightlights have a very high resolution and allow to measure economic activity of differently sized environments.[2] The United States National Oceanic and Atmospheric Administration collects nightlight emissions that are available as a raster with a resolution of one square kilometer at the equator, on a global scale (National Geophysical Data Center, 2012*a*, 2015). The illumination of these rasters is measured as a 'digital number' (DN), ranging from 0 to 63. A raster cell with the value of 0 DN is completely dark, which means no light was detected by satellites during nighttime, whereas 63 DN is a cell with maximum illumination. While

[2]Numerous studies underscore that nightlight emissions are a highly reliable and valid proxy for economic development (see Keola, Andersson and Hall (2015) and Perez-Sindin, Chen and Prishchepov (2021) for a good overview).

NOAA provides the original data, we rely on a product by Li et al. (2020) that creates a harmonized and globally integrated measure of nightlights for the time period from 1998-2018 using NOAA's official data. Importantly, this data update resolves differences in average light intensity that might arise over time because of changes in the quality of satellites.

Nightlights correlate highly with countries' aggregate economic output (Elvidge et al., 1997; Chen and Nordhaus, 2011; Proville, Zavala-Araiza and Wagner, 2017). And even more important for this study, light emissions have also been found to be useful in measuring economic activity at the subnational (Lessmann and Seidel, 2017; Henderson, Storeygard and Weil, 2011; Sutton, Elvidge and Ghosh, 2007) and neighborhood level (Weidmann and Schutte, 2017).[3] Using this proxy also means that we can avoid using national accounts of economic activity. Especially in a global comparison, country differences with regards to methodologies and underlying motivations to collect data differ widely, and resulting measures such as official GDP numbers often include serious measurement errors (Jerven, 2013).

In what follows, we embed these light emissions at night in two different approaches that determine the units of analysis: a buffer approach and a grid cell approach. For each approach, we create two different dependent variables. First, as a measure of economic activity, we simply use the average nightlight illumination within the respective unit of analysis. Second, in order to measure cross-unit (i.e., regional) inequality, we calculate the difference between the nightlight in-

[3]Even though nightlights are a highly reliable proxy for economic activity, it is important to note that this data source can suffer from saturation (no differentiation in very bright areas), over-glow (geo-spatial displacement with regard to exact origin of light), and blooming (undetected isolated light spots in dark areas), see Mellander et al. (2015); Henderson, Storeygard and Weil (2011); Chen and Nordhaus (2011).

tensity of one unit and the average nightlight intensity of its neighboring units (that also lie within the borders of the same country). For every measure, higher values imply more economic activity or higher inequality, respectively.

Analysis of Concentric Buffer Zones Around FDI Projects

To identify the activity of foreign multinational companies in host countries, we draw on geo-located FDI data from the "fdimarkets" database, which is provided by the Financial Times. This database is a unique source of information on FDI at the project level (The Financial Times, 2018) and records greenfield investments as well as expansions of existing projects on an ongoing basis since 2003. The Financial Times integrates various media and news sources. The database includes detailed project-related data, such as the date when the investment was announced, the estimated capital expenditure, and the estimated number of jobs created by the multinational company. Furthermore, it provides data on the origin of the investment (home country), the participating company, and the sector of the respective project.

Most importantly, the FDI data includes information on the location of each project. Using this information, we can illustrate how growth and inequality change over time in locations that are attractive to foreign investors by creating buffer zones around each FDI project. To do so, we identify all unique investment locations in non-OECD countries where at least one project has been implemented between 2003 and 2018. Even though geo-located FDI data provides us with a unique opportunity to test the local effects of FDI, there are some drawbacks. According to Brazys and Kotsadam (2020), there is a slight

over-representation of capital investments in comparison with the World Bank data. Another limitation is the missing coverage of mergers and acquisitions, which might be especially important in the context of developing markets (see Jung, Owen and Shim, 2021). The data also covers announcements of estimated capital expenditure only, which might deviate from actual capital invested. To mitigate these problems, we focus on several measures of MNC activity. For each unique project location, the "fdimarkets" database allows us to code the year of the first MNC activity as well as the cumulative sum of FDI projects between 2003 and 2018. Both measures should be less prone to measurement error but also reduce the available information to a sizable degree. We thus also use more fine-grained measures of MNC activity into account, in which we sum up (over time) either the estimated capital expenditure or the number of jobs created.

In our main specification, we match the FDI data with nightlight data in a radius of 10km around each unique project location; an area that approaches a reasonable commuting distance (see, Figure 3.7 in the Appendix).[4] Our final dataset consists of 4,386 buffer zones around FDI project locations in 143 non-OECD countries, for which we have information on local growth and inter-regional inequality before and after projects were implemented. Light emissions and MNC activity thus vary within each buffer zone over a time period of 16 years. To investigate whether the local consequences of FDI vary as a function of distance to each project, we also use varying buffer zones ranging from 5km to 100km. All buffer zones are clipped at the borders of their respective country to account for the fact that national borders still constitute substantial barriers

[4]We use the difference in light intensity between the immediate surrounding of a project location (a small buffer zone of 10 km) and the larger region (a 25km radius around the project location, without the inner 10km buffer zone) as our baseline measure for regional inequality.

to economic activity as well as to avoid bias for FDI projects that are built at sea borders.

Analysis of Global Grid Cells

While the approach using buffer zones as the units of analysis has been applied in previous scholarly works (e.g., see Brazys and Kotsadam, 2020), there are potential problems. Focusing on concentric buffer zones around projects helps us to deal with selection bias as we only compare locations that are at some point in time attractive for multinational enterprises. Yet, due to the design of only choosing locations that already have or will receive FDI projects, the number of treated observations will equal the number of all units in the last year, i.e., 2018. Furthermore, buffer zones around unique project locations might overlap the more we increase the radius of the respective buffers.[5] If areas or parts of them end up twice in the pool of observations, there will be a systemic bias. In sum, we cannot conclusively rule out that we might overestimate the true effect of using the buffer approach.

Hence, we complement the buffer zone approach with an alternative empirical strategy: instead of drawing buffers around FDI projects, we partition the globe into 10x10km grids, which results in 942,592 cells in 156 non-OECD countries as the units of analysis. Compared to the buffer approach, the grid approach uses information on economic activity in grid cells that will at some point in time receive FDI as well as other grid cells that do not (and, for most of them, probably never will) host FDI projects. We clip grid cells at country

[5] In the 10km buffer zone dataset, 8890 of 13594 buffer zones overlap with another FDI buffer.

borders and then match both nightlight emissions[6] and geo-located information on FDI projects. Of the 942,592 total grid cells, only 4,064 are treated between 2003 and 2018. Therefore, we test the robustness of this approach by limiting the available grid cells to the ever-treated as well as the (first and second order) neighbors of ever-treated cells (see, Figure 3.8 in the Appendix).[7]

Estimation Strategy and Regime Types on the Country-Level

To uncover whether FDI has conducive economic effects in host localities, we use a difference-in-differences approach (Christensen, 2019).[8] We estimate OLS regression models that contain project fixed effects (for buffers as the unit of analysis) or grid fixed effects (for grids as the unit of analysis) as well as year-fixed effects. We cluster the standard errors on the buffer or grid level, respectively. Even though we can effectively rule out a lot of sources for potential bias using the difference-in-differences estimator on two different units of analysis, we are still left with one concern: light emissions in areas that receive investment might change not because of the presence of foreign multinationals, but because investors anticipate booming areas. For this reason, we additionally control for lagged nightlight intensity and population size in both the buffer and the grid approach.[9]

In addition, we investigate the mediating effect of the regime type on

[6]To measure the regional inequality in nightlight emission, we calculate the difference between the nightlight intensity in each grid cell and the average nightlight intensity in the maximum eight surrounding grids that also lie in the same country.

[7]In another robustness check, we use grid cells of the size 25x25km. Here, 3,552 out of a total of 159,651 grids have received at least one FDI project at some point in time.

[8]We substantiate the validity of this approach using treatment matching estimators as robustness checks.

[9]Population data is taken from the Hyde database (Klein Goldewijk et al., 2017).

the country level using split regression models. We divide our sample using three dichotomous indicators: First, we differentiate between different types of political regimes using a dichotomous measure. Based on raw data from the V-Dem project (Coppedge et al., 2020; Pemstein et al., 2020), Lührmann, Tannenberg and Lindberg (2018) group countries in four regime categories[10] that we collapse into a simple autocracy-democracy dichotomy. The other two measures focus more closely on the key ingredients of liberal democracy. On the one hand, we use the extent to which citizens have the power to hold their government accountable using formal political participation in the form of free and fair elections (vertical accountability). On the other hand, we capture differences in legal institutions, i.e., to what extent citizens enjoy equal and secure access to the judicial system (access to judiciary). Both measures are continuous ranging from 0-1. We dichotomize by using a cut-off at .75, which corresponds with the coding instructions for V-Dem expert coders.

3.4 Empirical Evidence

How does FDI affect growth and inequality in developing countries? We expect that FDI induces growth, but that this effect is geographically concentrated. We further expect that FDI increases inequality, especially when taking into consideration that the growth-inducing effect of FDI is spatially confined. On top of that, the local economic consequences of FDI should be more pronounced in autocratic compared to democratic regimes.

[10]Liberal democracies, electoral democracies, electoral autocracies, and closed autocracies.

FDI and Economic Development Figure 3.1 reports the first set of our findings focusing on the effect of FDI on economic growth using both buffers (on the left-hand side) and grids (on the right-hand side) as the unit of analysis. Economic development is operationalized by average nightlight intensity in a 10km radius around each FDI project or within a 10x10km grid cell, respectively. The unconditional effect of MNC activity is positive and statistically significant in both approaches. This means that compared to an area that will only be exposed to international investment in the future, areas where multinational companies have already invested in a given year experience increasing light emissions at night. The growth effect is also substantial in size. A one standard deviation increase in FDI leads to a growth rate of light emission of about 11% (for the grid analysis). In line with Hypothesis 1, we thus conclude that FDI is conducive to economic development on the local level.

The results in Figure 3.1 are based on Table 3.1 and Table 3.2 in the Appendix, which further show that the statistically significant effect of FDI on economic development is robust with different operationalizations of MNC activity. Models 1 and 2 use a simple treatment variable of the very first FDI project in each buffer or grid. This variable is 0 if, in a given year, investment in that area has not yet been made; in addition, it is also 0 for all grid cells that are never treated. The variable increases to 1 in the first year any MNC has invested in that locality.[11] In models 3 and 4, we switch to a more fine-grained operationalization using the cumulative sum of capital invested, logged because

[11]This variable simplifies a lot of information regarding the prevalence of FDI in specific areas. Given that each unique FDI location is, on average exposed to only two FDI projects between 2003 and 2018, we think this variable still is a good indicator to capture overall exposure to international investment of subnational units.

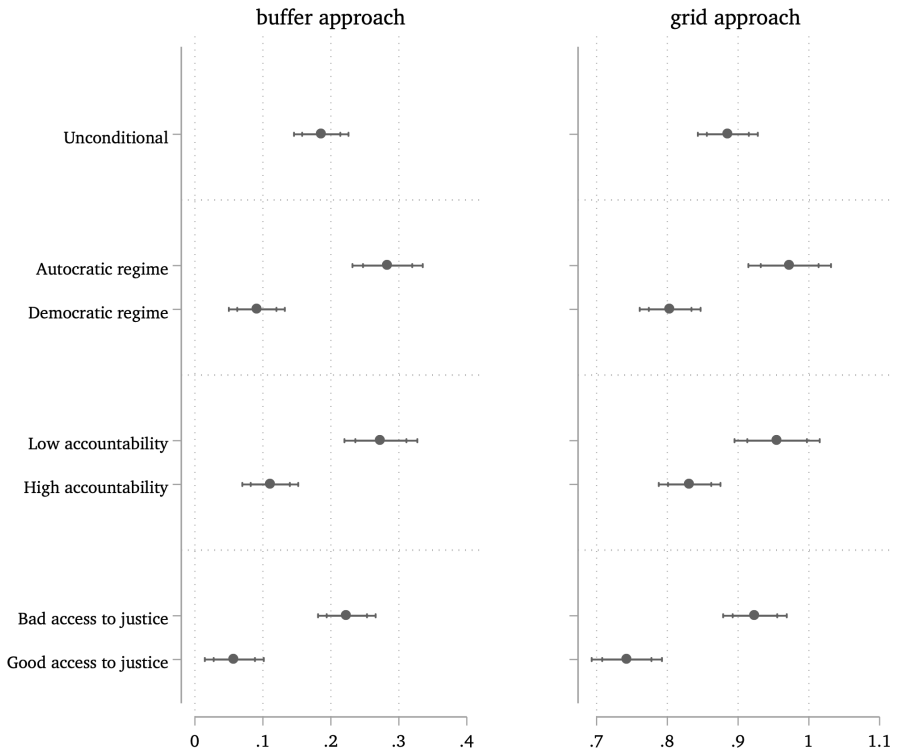

Figure 3.1: Effect of FDI projects on nightlight intensity, conditional on regime type. OLS regression models based on model specifications in Table 3.1 and Table 3.2, including 95% and 83% confidence intervals.

capital expenditures are highly skewed. This variable thus offers more variation in terms of the actual extent of MNC activity between buffers or grids as well as changes in investment behavior over time. Models 5 and 6 mirror these models, but use the estimated number of jobs created in a project-site or grid cell, respectively. The effect of FDI on growth is positive and statistically significant across all model specifications. The growth-enhancing effect of FDI is also robust with controlling for lagged nightlight intensity, which is a proxy for how well-off an area already is before (the initial or more) investment takes place, and population size, which proxies for the size of the local market. Lastly, the results from

the grid approach also hold up when we restrict the number of grid cells used in the regression models to treated grid cells as well as direct neighbors of treated grids (see, Table 3.3).

We additionally expect that the political regime type mediates the effect of FDI on economic growth. Figure 3.1 thus also focuses on the scope of the growth effect of FDI across autocracies and democracies. We use model 4 from Table 3.1 and Table 3.2 as the preferred specification and interact exposure to FDI with a binary indicator for the type of political regime. In line with Hypothesis 4, we find that the growth-inducing effect of FDI is – albeit positive in every political regime – far greater in autocratic regimes and statistically significantly different from democracies.[12] We come to the same conclusion when focusing on two core components of liberal democracy. FDI induces higher growth rates on the local level when citizens are able to hold their government to account via free and fair elections (vertical accountability) and when citizens have equal access to the court system (access to justice). Note, however, that these are differences for local growth rates, which do not necessarily imply that FDI similarly leads to higher aggregate economic growth in authoritarian regimes. Nevertheless, this runs counter to the widely held belief that democratic regimes (and the institutions that usually come with democratization) are a more attractive environment for multinational investors (Jensen, 2003, 2006). Instead, our results suggest that more autocratic settings might offer a mutually beneficial environment for foreign investors and non-democratic leaders.

Lastly, we use a specific advantage of the buffer approach to tap into the

[12]Whereas we use 95% confidence intervals to compare an effect to the null hypothesis, here we focus on 83% confidence intervals. If 83% confidence intervals do not overlap, effects are statistically significantly different from each other approximately on the 5% level.

question of how far the growth-inducing effect of FDI travels within a country. To do so, we vary the size of the buffer zone around each FDI project location using the specification of model 4 in Table 3.1. Figure 3.2 shows that the growth-enhancing effect of FDI is largest in the area immediately surrounding multinational companies, i.e. in a distance of about 5-10km. FDI still induces growth in areas farther away, but the effect size steadily decreases until, for a distance of about 40km, it is not statistically significantly different from zero anymore. This leads us to conclude that the positive effect of FDI on economic growth is highly geographically confined and does not travel very large distances, which corroborates Hypothesis 2.

FDI and Economic Inequality We now turn to investigating the effect of FDI on economic inequality. For the buffer approach, we operationalize regional inequality using the difference between the average light intensity in a 10km buffer zone and the average light intensity in a ring, including the area of 10 to 25km around each FDI project. As for the grid approach, we calculate the difference in light intensity between each cell and the average light intensity of its neighboring cells that lie within the same country. Figure 3.3 reports the results from the two-way fixed effects model. Irrespective of whether we use buffers (on the left-hand side) or grids (on the right-hand side), the unconditional effect of FDI is positive and statistically significant. This implies that the presence of foreign investors leads to a divergence of economic activity between the area in the immediate vicinity of FDI projects and the areas farther away. In substantial terms, our results imply that the nightlight growth rate in treated grids is about double

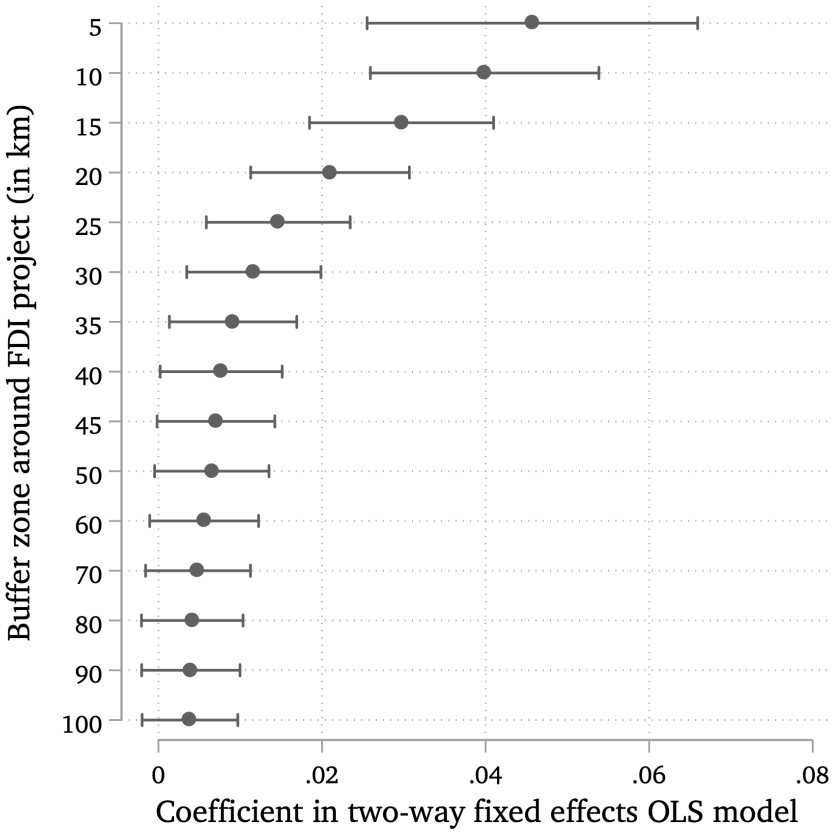

Figure 3.2: Effect of FDI projects on nightlight intensity, depending on distance. OLS regression models based on model specification in Table 3.1, including 95% confidence intervals.

the growth rate in neighboring grids that are not exposed to FDI.[13]

Furthermore, Figure 3.3 showcases that there are, again, substantial differences between autocracies and democracies. The inequality-inducing effect of FDI is substantially larger in autocracies and statistically significantly different from democracies in the buffer as well as the grid approach. FDI also bolsters inequality in regimes where citizens have less say in politics via free and fair elec-

[13]Table 3.4 and Table 3.5 further highlight that the inequality-increasing effect of MNC activity is robust with different operationalizations of FDI exposure.

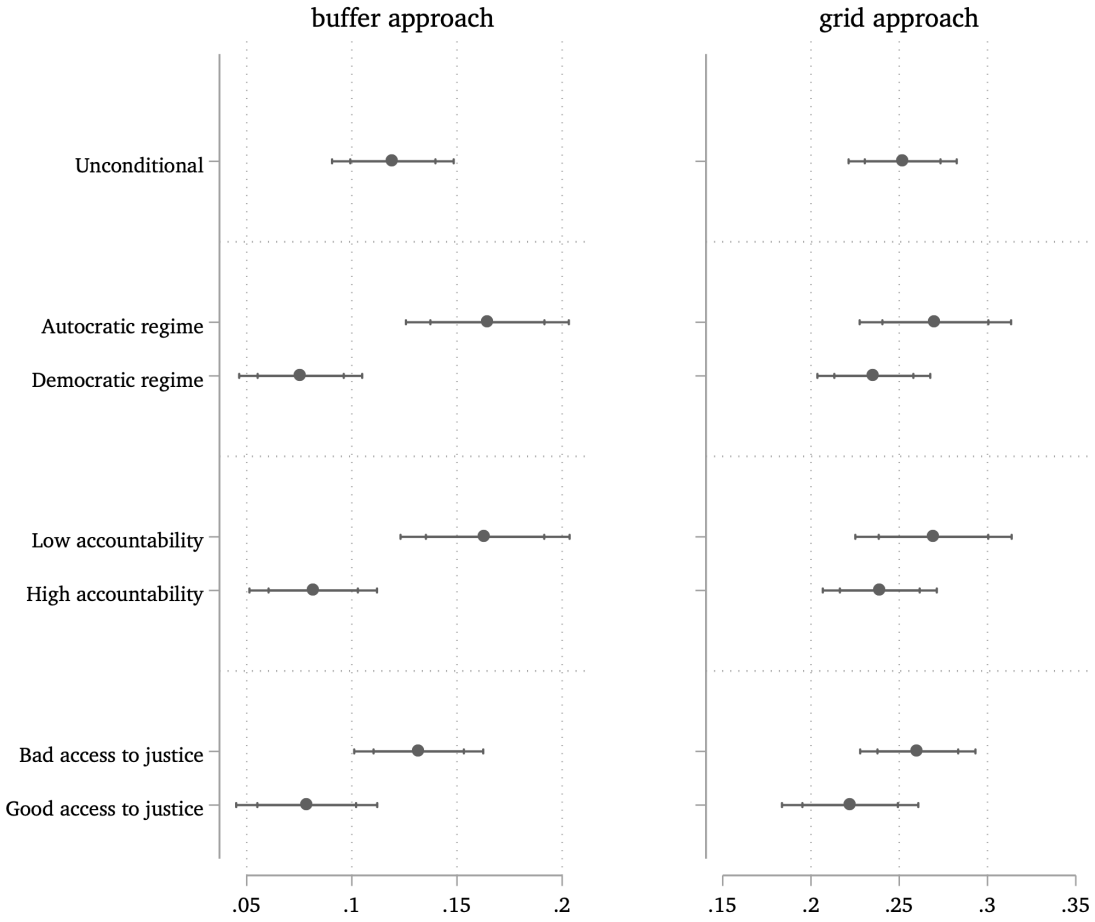

Figure 3.3: Effect of FDI projects on spatial nightlight inequality, conditional on regime type. OLS regression models based on model specifications in Table 3.4 and Table 3.5, including 95% and 83% confidence intervals.

tions and when citizens do not have access to an impartial justice system. Our findings thus indicate that FDI fosters a more unequal distribution of economic resources in more authoritarian countries, which is in line with Hypothesis 4.

Summing up, these findings provide strong evidence in favor of our argument. FDI induces growth, most notably in the area that is very close to multinational investment sites. At the same time, FDI generally increases economic inequality. Lastly, more authoritarian countries, both in terms of their political

and their legal institutions, fare better when it comes to the local growth potential of FDI but are worse off when it comes to FDI-induced reallocation of economic resources.

Treatment Matching as a Robustness Check One assumption of the differences-in-differences design is that treated and untreated grids show roughly equal light emissions trends before MNCs enter an area. We investigate this assumption graphically. Figure 3.4 shows that prospective investment locations have generally higher light emissions compared to untreated grid cells. Importantly, we clearly see an increase in light intensity after investment by foreign multinationals, whereas we do not see any effect in neighboring untreated grid cells. We do, however, observe an anticipation effect of FDI in treated grids in the year before the first FDI project, which is most likely due to the fact that accompanying infrastructure is already being built.

Even though we are still confident that the parallel trends assumption holds, we find it important to employ an estimator that only compares similar units. Thus, establishing a reliable effect might require matching and weighting treated with untreated cells based on previous light developments and the treatment history.[14] To do so, we apply the estimation strategy by Imai, Kim and Wang (2021) who established a causal identification strategy for cross-sectional time-series data that specifically takes the treatment history of previous years into account.

In terms of estimation, we rely on the R-package 'PanelMatch' (Kim et al., 2021) provided by Imai, Kim and Wang (2021), which contains three steps:

[14]The grid cell design also does not take into account that investors invest several times in the same location. Around 2291 out of 4064 treated cells in the 10x10 kilometer raster have been treated multiple times.

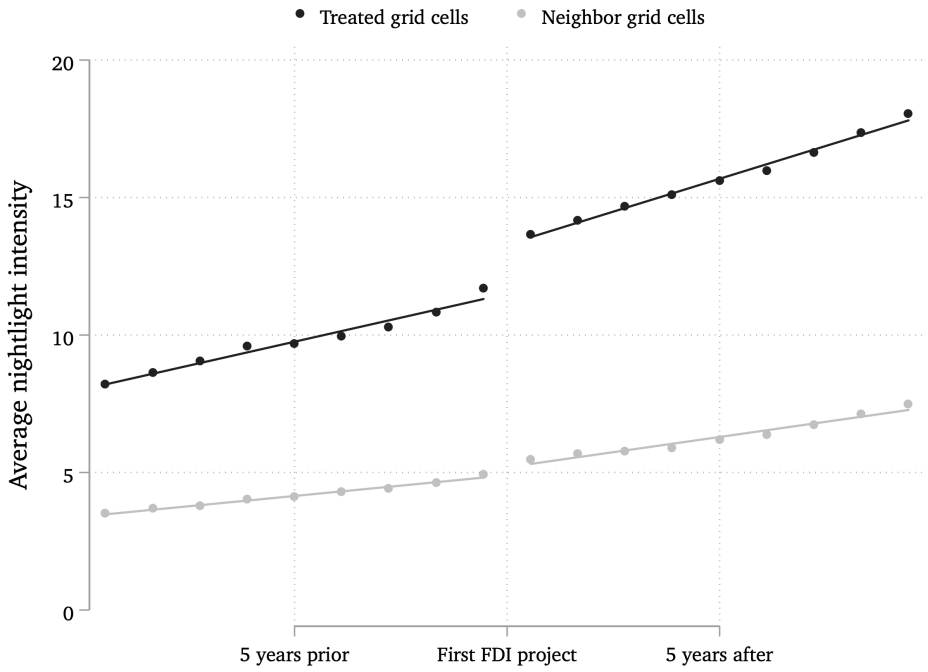

Figure 3.4: Parallel trends in 10x10km grid approach. Average nightlight intensity of treated and untreated grids before and after investment by MNCs.

First, we create a set of matched treated and control units for the 10x10km grid raster. Second, we apply the propensity score distance matching to refine the matched set based on country, the mean of light development as well as population size in the last two years. The five most similar control units will be used to estimate the average treatment effect on treated units (ATT) for the first two years after the FDI project has been announced. To calculate confidence intervals for the point estimates, we calculate bootstrap standard errors with 1000 iterations.[15] Figure 3.5 shows the effect of FDI on local economic activity based on average nightlight emission within 10x10km grid cells. The average

[15]The models ran for several weeks on a 6TB Linux cluster provided by the Supercomputing Centre at one of our universities.

treatment effects are positive and statistically significant, thus corroborating the findings from previous analyses. As expected by the long-term nature of FDI, the growth effect of FDI also becomes bigger over time. FDI again leads to higher local growth rates in autocratic countries compared to democracies (see Figure 3.9 in the Appendix).

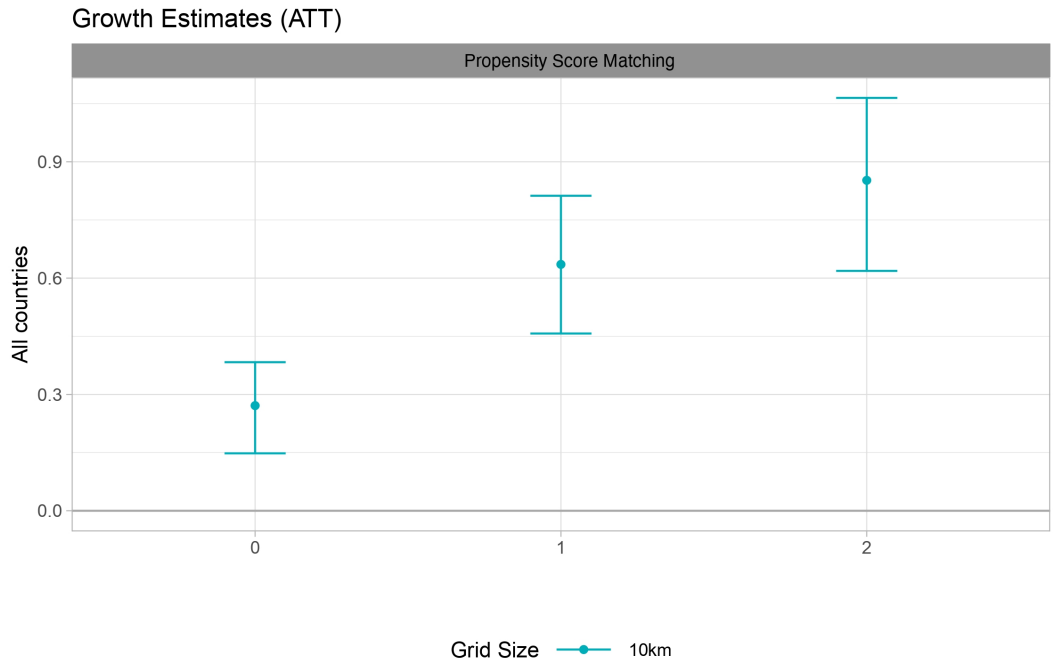

Figure 3.5: Effect of FDI projects on nightlight intensity – treatment matching. ATT for 0–2 years after the first FDI project in 10x10km grid cells.

We run the same estimator for our second dependent variable, namely spatial economic inequality. Yet, given that the refinement procedure is memory-intensive, we need to rely on 25x25km grid cells. Figure 3.6 shows that FDI projects asymmetrically benefit the light development of the inner versus the surrounding grid cells. The positive and statistically significantly positive effect implies a growing divergence in terms of economic activity between grids

treated by FDI and untreated neighbor grids. We also find statistically significant differences between democratic and autocratic countries, whereas FDI increases regional inequality more in more authoritarian settings (see Figure 3.10 in the Appendix).

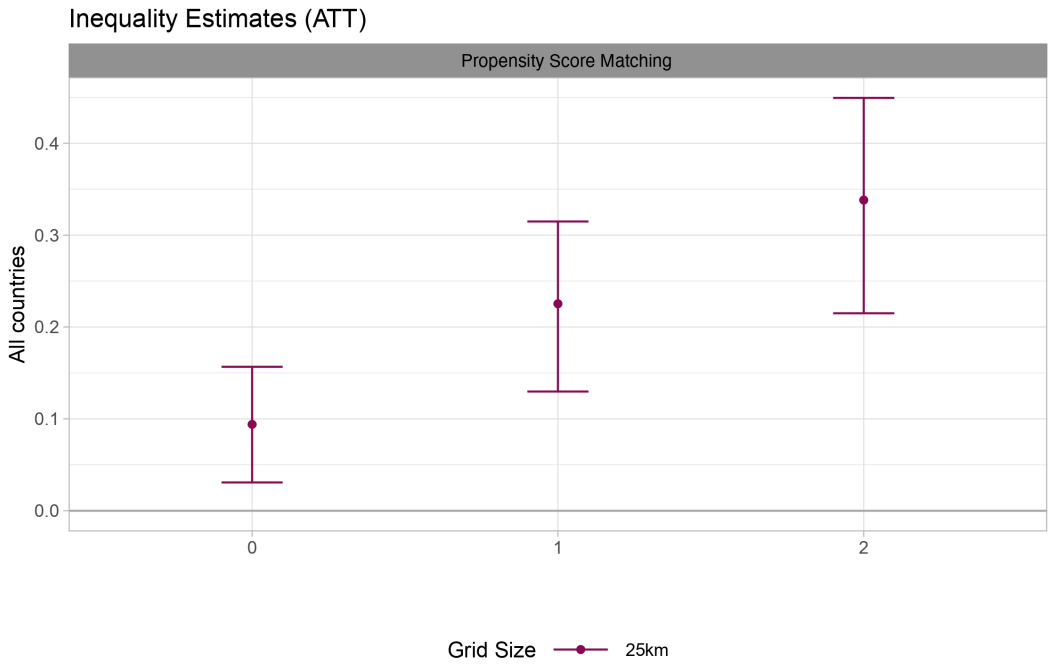

Figure 3.6: Effect of FDI projects on spatial nightlight inequality – treatment matching. ATT for 0–2 years after the first FDI project in 10x10km grid cells.

3.5 Conclusion

Foreign direct investment in many non-OECD countries is a growing source of capital, and governments are eager to attract multinational enterprises in the hope of creating better economic conditions. However, the debate as to whether and when foreign multinationals really contribute to economic prosperity and an equal distribution of economic resources in society is still open. In this article, we argue that the inconclusive findings regarding the growth- and inequality-inducing effect of FDI at the country level are due to the fact that the consequences of MNC activity should be heterogeneous within countries and between different political regimes. While FDI induces growth around the site of investment, it contributes to rising inter-regional inequality as areas farther away from the project location are left behind. The growth- and inequality-inducing effects of FDI on the local level are more pronounced in autocracies compared to democracies. We contend that the local growth effect of FDI results from a combination of increased capital stocks from the multinational enterprise and spillover effects to domestic businesses and the working-age population that occurs predominantly around the sites of investment. At the same time, improving economic conditions from FDI in close proximity to project locations increases disparities with those regions that are not attractive to foreign investors because they suffer from increased domestic competition.

We find evidence in favor of these hypotheses using geo-located data on FDI, which we match with data on light emissions at night. Doing so allows us to investigate the economic consequences of FDI on a very fine-grained, subnational level. This approach also enables us to differentiate between the local

economic consequences of FDI in autocracies and democracies. By employing a dynamic buffer zone approach, we are able to test the effect of FDI at varying distances to the project location. In addition, we complement our analysis with a difference-in-differences design based on global grid cells. Both approaches support our argument: There is a sizable, positive growth effect in the vicinity of multinationals' sites of investment that decreases in distance to the project location. Because of this spatially concentrated effect on economic development, FDI also heightens inter-regional inequality. Inequality increases, especially in places farther away from MNC locations, and more so in authoritarian regimes.

Our paper thus speaks to the question of whether a country's regime type makes a difference for multinational investors. We show that more authoritarian countries, both in terms of their political and legal institutions, fare better when it comes to the *local* growth potential of FDI, but fare worse regarding the FDI-induced polarization of economic activity. Democratic countries, on the other hand, seem to be more successful in generating a more equitable distribution of the benefits of FDI. Our paper further speaks to the general necessity of moving away from national cross-country analyses and calls for more work that focuses on what consequence economic integration has for the local level – on the empirical as well as theoretical level. Recent advances in trade theory (Melitz, 2003; Helpman, Melitz and Yeaple, 2004; Walter, 2010) have already outlined that economic globalization exhibits consequences that are more heterogeneous than previously assumed. We add to that literature by additional highlighting the geographical heterogeneity of international economic integration.

Taken together, our analysis makes clear that taking into account both the geographical dispersion and political institutions is crucial to understand

the heterogeneous impact of foreign direct investment on domestic economies in developing countries. Hence, we conclude that the increasing inter-regional polarization from FDI equally warrants a more fine-grained, local response to the distributive effects of globalization. If so desired, policymakers in developing countries need to ensure adequate and targeted compensation for places that cannot benefit from the locally restricted gains of international integration. Place-based compensation policies might be a potential solution for addressing increasing inter-regional inequality that might destabilize these countries. Otherwise, the revenge of left-behind places in developing and emerging markets (Rodríguez-Pose, 2018) could potentially lead to social conflict and subsequently endanger the economic catch-up process of many of these countries.

3.6 Appendix

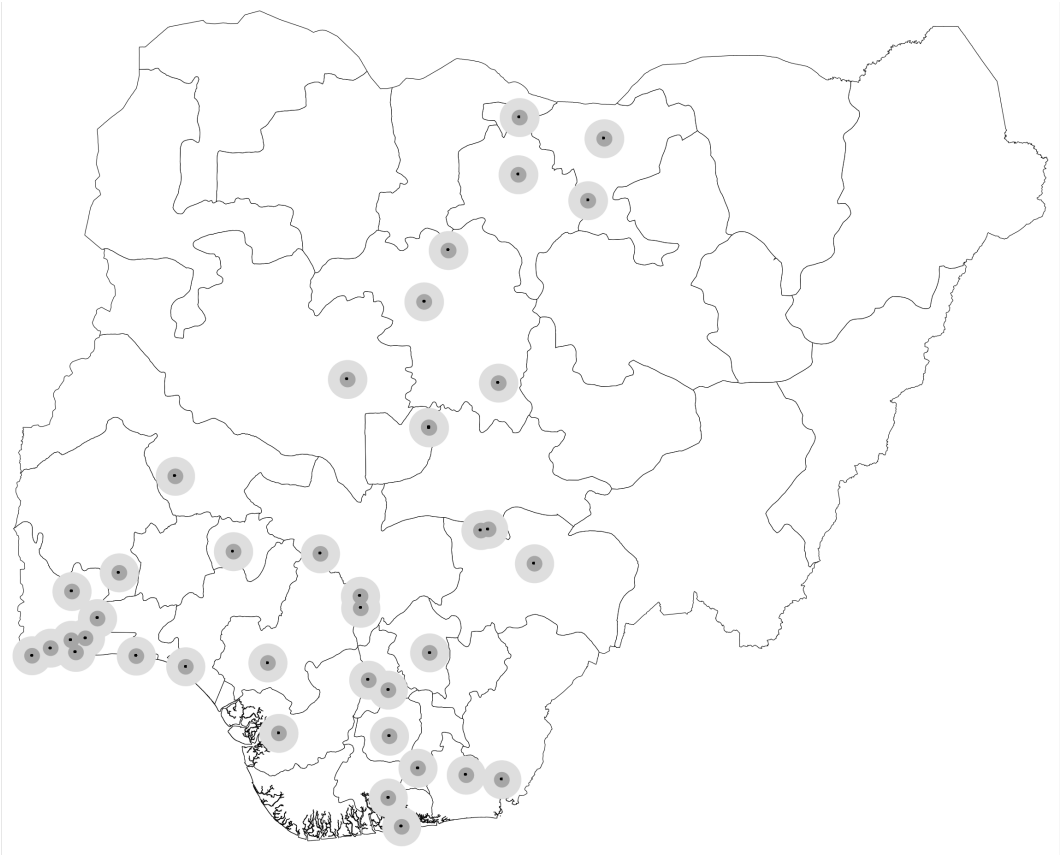

Figure 3.7: Illustration of buffer approach (in Nigeria).

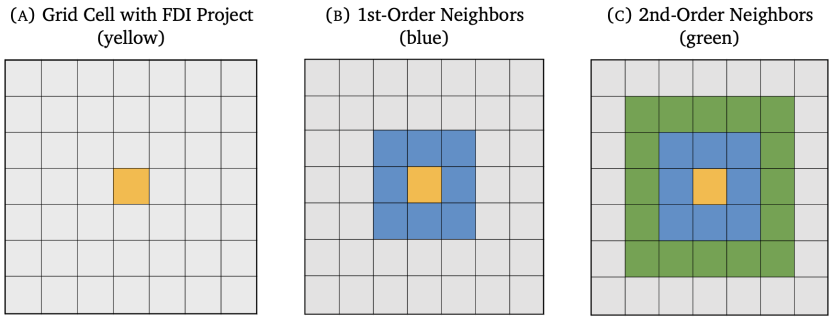

Figure 3.8: Illustration of grid approach.

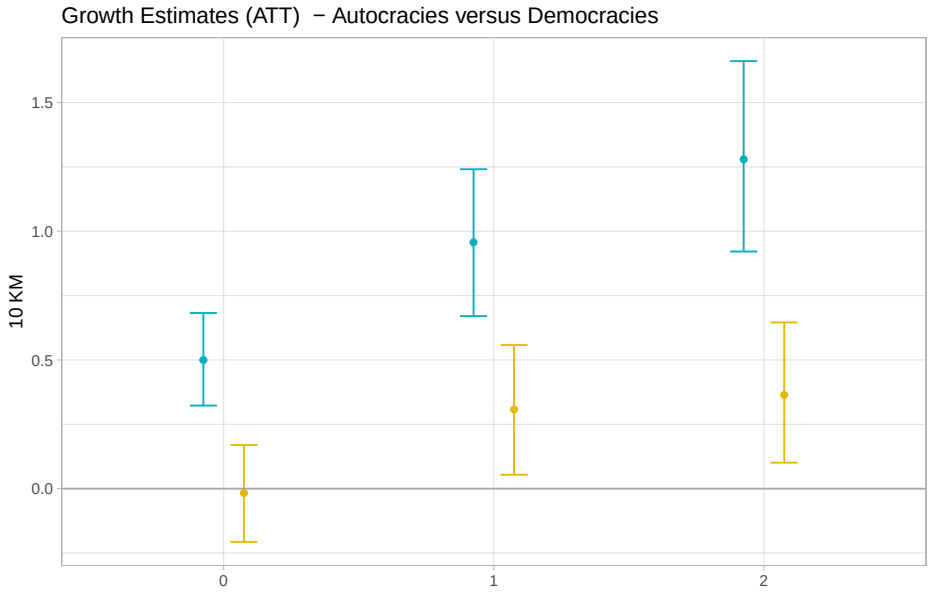

Figure 3.9: Effect of FDI projects on nightlight intensity – treatment matching. ATT for 0–2 years after the first FDI project in 10x10km grid cells; autocracies in blue, democracies in yellow.

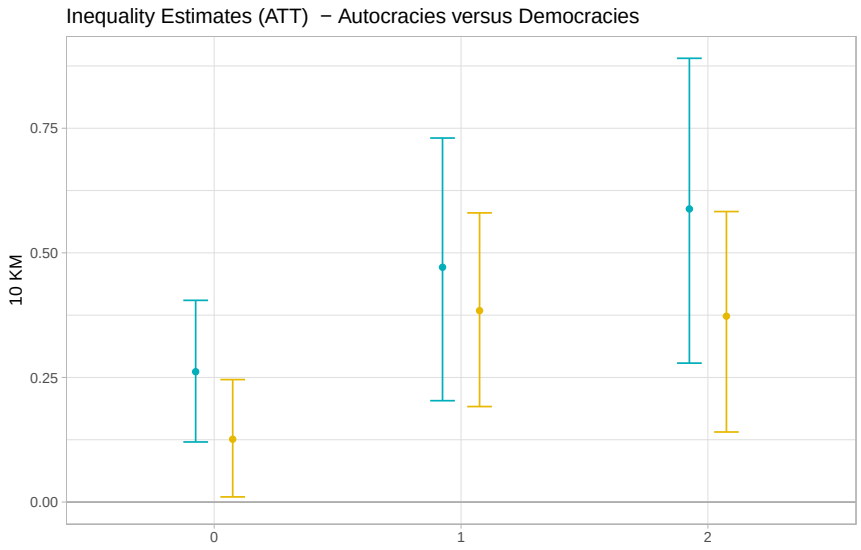

Figure 3.10: Effect of FDI projects on spatial nightlight inequality – treatment matching. ATT for 0–2 years after the first FDI project in 10x10km grid cells; autocracies in blue, democracies in yellow.

Table 3.1: Effect of FDI projects on nightlight intensity – Buffer approach

	Nightlight intensity around each FDI project in a radius of...					
	10km	10km	10km	10km	10km	10km
	(1)	(2)	(3)	(4)	(5)	(6)
First FDI project	0.229***	0.074***				
	(0.07)	(0.03)				
FDI capex, cum (ln)			0.186***	0.040***		
			(0.02)	(0.01)		
FDI jobs, cum (ln)					0.116***	0.028***
					(0.01)	(0.01)
Lagged nightlights		0.760***		0.759***		0.759***
		(0.01)		(0.01)		(0.01)
Population size		-0.000**		-0.000***		-0.000***
		(0.00)		(0.00)		(0.00)
Constant	23.811***	6.252***	23.422***	6.233***	23.515***	6.222***
	(0.05)	(0.14)	(0.06)	(0.14)	(0.06)	(0.14)
# of observations	65790	65550	65790	65550	65790	65550
# of buffers	4386	4370	4386	4370	4386	4370
# of countries	143	140	143	140	143	140
Prob >F	0.002	0.000	0.000	0.000	0.000	0.000

Notes: OLS regression models, buffer-clustered standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Two-way fixed effects (unique project location and year) not reported. Independent variables lagged by one year.

Table 3.2: Effect of FDI projects on nightlight intensity – Grid approach

	Nightlight intensity within grid cells the size of...					
	10km	10km	10km	10km	10km	10km
	(1)	(2)	(3)	(4)	(5)	(6)
First FDI project	3.549***	1.214***				
	(0.09)	(0.04)				
FDI capex, cum (ln)			0.885***	0.283***		
			(0.02)	(0.01)		
FDI jobs, cum (ln)					0.689***	0.225***
					(0.02)	(0.01)
Lagged nightlights		0.619***		0.619***		0.619***
		(0.00)		(0.00)		(0.00)
Population size		0.000***		0.000***		0.000***
		(0.00)		(0.00)		(0.00)
Constant	1.851***	0.675***	1.849***	0.679***	1.849***	0.678***
	(0.00)	(0.01)	(0.00)	(0.01)	(0.00)	(0.01)
# of observations	14015943	13551725	14015943	13551725	14015943	13551725
# of grids	935618	903455	935618	903455	935618	903455
# of countries	156	153	156	153	156	153
Prob >F	0.000	0.000	0.000	0.000	0.000	0.000

Notes: OLS regression models, grid-clustered standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Two-way fixed effects (grid cells and year) not reported. Independent variables lagged by one year.

Table 3.3: Effect of FDI projects on nightlight intensity – Treated grids and neighbors

	Nightlight intensity within grid cells the size of...					
	10km	10km	10km	10km	10km	10km
	(1)	(2)	(3)	(4)	(5)	(6)
First FDI project	1.362***	0.350***				
	(0.09)	(0.03)				
FDI capex, cum (ln)			0.365***	0.086***		
			(0.02)	(0.01)		
FDI jobs, cum (ln)					0.279***	0.069***
					(0.02)	(0.01)
Lagged nightlights		0.739***		0.739***		0.739***
		(0.00)		(0.00)		(0.00)
Population size		0.000		0.000		0.000
		(0.00)		(0.00)		(0.00)
Constant	13.960***	3.852***	13.931***	3.868***	13.931***	3.862***
	(0.01)	(0.04)	(0.01)	(0.04)	(0.01)	(0.04)
# of observations	428676	408570	428676	408570	428676	408570
# of grids	28617	27238	28617	27238	28617	27238
# of countries	156	153	156	153	156	153
Prob >F	0.000	0.000	0.000	0.000	0.000	0.000

Notes: OLS regression models, grid-clustered standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Two-way fixed effects (grid cells and year) not reported. Independent variables lagged by one year.

Table 3.4: Effect of FDI projects on spatial nightlight inequality – Buffer approach

	Difference between nightlights around each FDI project in a radius of...					
	10-25km	10-25km	10-25km	10-25km	10-25km	10-25km
	(1)	(2)	(3)	(4)	(5)	(6)
First FDI project	0.398***	0.272***				
	(0.06)	(0.04)				
FDI capex, cum (ln)			0.120***	0.059***		
			(0.01)	(0.01)		
FDI jobs, cum (ln)					0.085***	0.044***
					(0.01)	(0.01)
Lagged nightlights		0.367***		0.365***		0.366***
		(0.01)		(0.01)		(0.01)
Population size		-0.000***		-0.000***		-0.000***
		(0.00)		(0.00)		(0.00)
Constant	10.707***	4.421***	10.618***	4.504***	10.640***	4.479***
	(0.04)	(0.30)	(0.04)	(0.30)	(0.04)	(0.30)
# of observations	65745	65535	65745	65535	65745	65535
# of buffers	4383	4369	4383	4369	4383	4369
# of countries	143	140	143	140	143	140
Prob >F	0.000	0.000	0.000	0.000	0.000	0.000

Notes: OLS regression models, buffer-clustered standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Two-way fixed effects (unique project location and year) not reported. Independent variables lagged by one year.

Table 3.5: Effect of FDI projects on spatial nightlight inequality – Grid approach

	Difference in nightlight intensity between neighboring grid cells the size of...					
	10km	10km	10km	10km	10km	10km
	(1)	(2)	(3)	(4)	(5)	(6)
First FDI project	1.251***	0.945***				
	(0.06)	(0.06)				
FDI capex, cum (ln)			0.252***	0.187***		
			(0.02)	(0.01)		
FDI jobs, cum (ln)					0.206***	0.152***
					(0.01)	(0.01)
Lagged nightlights		0.127***		0.127***		0.127***
		(0.00)		(0.00)		(0.00)
Population size		-0.000***		-0.000***		-0.000***
		(0.00)		(0.00)		(0.00)
Constant	0.003***	-0.180***	0.004***	-0.178***	0.004***	-0.179***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
# of observations	14012472	13551491	14012472	13551491	14012472	13551491
# of grids	935379	903443	935379	903443	935379	903443
# of countries	156	153	156	153	156	153
Prob >F	0.000	0.000	0.000	0.000	0.000	0.000

Notes: OLS regression models, grid-clustered standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Two-way fixed effects (grid cells and year) not reported. Independent variables lagged by one year.

Table 3.6: Effect of FDI projects on spatial nightlight inequality – Treated grids and neighbors

	Difference in nightlight intensity between neighboring grid cells the size of...					
	10km	10km	10km	10km	10km	10km
	(1)	(2)	(3)	(4)	(5)	(6)
First FDI project	1.079***	0.757***				
	(0.06)	(0.05)				
FDI capex, cum (ln)			0.210***	0.133***		
			(0.02)	(0.01)		
FDI jobs, cum (ln)					0.174***	0.113***
					(0.01)	(0.01)
Lagged nightlights		0.306***		0.306***		0.306***
		(0.00)		(0.00)		(0.00)
Population size		-0.000***		-0.000***		-0.000***
		(0.00)		(0.00)		(0.00)
Constant	1.395***	-2.254***	1.405***	-2.228***	1.397***	-2.235***
	(0.01)	(0.06)	(0.01)	(0.06)	(0.01)	(0.06)
# of observations	428661	408570	428661	408570	428661	408570
# of grids	28616	27238	28616	27238	28616	27238
# of countries	156	153	156	153	156	153
Prob >F	0.000	0.000	0.000	0.000	0.000	0.000

Notes: OLS regression models, grid-clustered standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Two-way fixed effects (grid cells and year) not reported. Independent variables lagged by one year.

Chapter 4

Local Effects of Foreign Direct Investment: Time Matters

Abstract

How does foreign direct investment (FDI) affect local economic activity and inequality in developing countries over time? Differentiating the announcement, short- and long-term phases, this chapter postulates that the economic effects are neither constant nor infinite but change over time and reach a plateau in the long run. The chapter geo-merges the information on nighttime light pollution and local FDI data between 2003 and 2018 by creating a world raster of 942,000 10x10 equal-sized square kilometer cells in 156 non-OECD countries. The chapter applies the "PanelMatch" estimator, which allows the treatment effects to be estimated over time and in multiple treatment scenarios. The results indicate that the economic effects of FDI in developing countries differ over time. According to the findings, economic activity and intra-regional inequality in locations exposed to FDI increase, especially after the second year of a project announcement, and stabilize after around five years. This research note will allow policymakers and scholars to understand better for how long and when FDI creates economic consequences and inform re-distributional policies and predictions of rising frustrations among citizens.

Keywords: Foreign Direct Investment, economic activity, inequality, time, duration, developing countries.

Acknowledgements

I would like to thank Timm Betz, Tim Büthe, Cindy Cheng, Karsten Fischer, In Song Kim, Hannah Löffler, Erica Owen, Tabea Palmtag, Amy Pond, Adam Rauh, Tobias Rommel, Marcel Schliebs, Rachel Wellhausen, as well as workshop participants at the Hochschule für Politik München IR Research Group, and the Graduate Students Political Economy Workshop at the Department of Government at Harvard University for helpful comments and suggestions. I am grateful to the TUM School of Management and the Chair of International Relations led by Tim Büthe at the Hochschule für Politik München, that generously offered funding to purchase data used in this study and provided a highly supportive research environment, and the Leibniz Supercomputing Centre at the Technical University of Munich for access to the technical infrastructure.

4.1 Introduction

With better availability of panel and time-series data, political economy scholars have increasingly focused on disentangling the causes behind changes in political events, human behavior, and institutional transformations over time. Identifying the mechanisms of how an explanandum evolves, is determined, or develops over time has led to numerous estimation strategies that equip researchers to account for time in their analysis appropriately.

As Büthe (2002) notes, dynamic processes require research designs that capture sequential effects and require scholars "taking temporality seriously" (p. 485). Unfortunately, many studies appear to neglect how effects differ over time (see De Boef and Keele, 2008; Büthe, 2002). This chapter offers an empirical example of taking time more seriously and accounting for the temporal dimension underlying economic dynamics. Specifically, this chapter analyzes how foreign direct investment (FDI) by multinational companies (MNCs) in developing countries shapes regional economic activity and inequality over time.

In times of increasing globalization, it is of fundamental interest to scientists, the public, and policymakers to understand how foreign investment, often among the only external sources of unrestricted capital in developing countries, creates asymmetrical development and inequality dynamics at the local level. Given inconclusive findings of economic effects in the current literature,[1] it is

[1]While some studies identify growth potentials connected to FDI (see De Mello, 1999, 1997; Borensztein, De Gregorio and Lee, 1998; Hansen and Rand, 2006; Alfaro et al., 2004; Lumbila, 2005; Nwaogu and Ryan, 2015; Iamsiraroj and Ulubaşoğlu, 2015; Hermes and Lensink, 2003) and spillover effects (see Liu et al., 2000; Liang, 2017; Iwasaki and Tokunaga, 2016) other studies highlight the potential to create distributional consequences for citizens, such as inequality (see Goldberg and Pavcnik, 2007; Palmtag, 2020; Choi, 2006; Lessmann, 2013; Basu and Guariglia, 2007), income asymmetries (Choi, 2006; Herzer, Hühne and Nunnenkamp, 2014; Feenstra and Hanson, 1997), and job insecurity (Scheve and Slaughter, 2004).

necessary to look at the local rather than national level to account for the heterogeneous and complex relationship between an investment stimulus and economic development (see Fortunato, Swift and Williams, 2018; Jensen, Quinn and Weymouth, 2017; Ansolabehere, Meredith and Snowberg, 2014; Owen, 2019). One of the key takeaways from the previous chapter (Chapter 3) of this dissertation project is that FDI can positively affect economic development and lead to distributional consequences at the local level. However, these effects diminish in space and thus are hardly observable on the national level.

At the same time, the previous chapter does - as most IPE studies - not examine how to account for the temporal dimension of the economic and distributional consequences of FDI. It is hard to imagine that every investment creates temporally constant economic effects. Instead, the potential of investments for the development of a location is characterized by several elements that will affect how economic activity and inequality effects develop over time. As human interaction, policy-making, and institutional change can all affect economic dynamics, it is crucial not to take the economic effects of FDI as a constant factor but examine when and how long economic activity and inequality are the outcomes of investment. Simply ignoring temporal changes can lead policymakers and governments to wrong assumptions about re-distributional measures. For scholars, it complicates the adequate assessment of political outcomes such as individual frustration or protest participation.

Thus, it is a surprise that recent studies barely examine the economic development and inequalities induced by FDI projects over time. Instead, some studies add robustness checks in which they lag the most relevant explanatory variable by k years or take yearly averages to understand how FDI in the previous

year(s) influences political or economic developments in the recent year. While this method is easily implemented, it has methodological and conceptual caveats.

First, believing that FDI creates economic activity from the first year might not always be accurate. For example, the official administration of inflows, peoples' employment, and the establishment of a project site can take several months or even years. Furthermore, depending on which FDI project data source scholars use, it is possible that the data covers only announcements of FDI projects. Presumably, there is a significant time gap between the announcement of FDI and the actual realization of an investment. As investments need some time to create economic activity, taking t_0 as the anchor point might lead to biased effects and an underestimation of the economic effects. As argued below, it is necessary to look at what happens multiple years after an investment and not stop at the first- or second-year lag.

Second, year lags only mirror the overall effect of an investment after the k^{th} year but do not allow for inter-temporal variation of estimates over time. One way to overcome this is to average variables over k years, but these will make economic development estimates more imprecise and impossible to identify annually.

Third, the stimulus of FDI for the additional economic activity is predicted to diminish over time. While spillover and multiplier effects might advance economic activity moving forward, it is hard to believe that one single FDI project will create infinite economic development. Instead, IPE scholars should examine when to expect an equilibrium of economic development from an FDI project. It is relevant for policymakers and scholars to identify how long FDI creates additional economic activity and when a plateau is reached.

Fourth, the previous chapter and other scholars have implemented a difference-in-differences estimator to calculate the effect of FDI on economic and political outcomes. This is problematic when considering the temporal variation of FDI: The "fDi markets" data, which covers single geo-referenced FDI projects since 2003, shows that FDI is clustered not just in space but also that multiple investors tend to re-invest in the same location multiple times.[2] By merely including a post-treatment dummy that equals 1 in all future years for any treated cell, one would only consider those investments that arrive at a location for the first time as the treatment. In reality, additional investment likely leads to additional economic activity. Thus, marking a location as treated after the first investment would systematically underestimate the relevance of any additional investment, which should have the same effect on the economic development of regions. It is, therefore, important to account for the multiple treatments of a location when estimating economic outcomes.

This chapter outlines how FDI affects economic development and inequality mechanisms in developing countries over time. In trying to understand the literature's inconclusive findings on economic outcomes, I argue that FDI positively affects economic activity and disparity resulting from the direct labor market and production effects. However, these economic outcomes plateau over time unless additional investment is made in the same location.[3]

Through the conceptualization of announcement, short- and long-term periods, this chapter tries to identify the effects of FDI over time, allowing us

[2]The percentage of locations in the dataset that receive FDI once (41%), twice (15%), three (8%), four (5%), or more times (31%) during 2003 and 2018 provides evidence to this claim.

[3]Mathematically, this curve can be described as a logistic function with exponential increase after a project has been announced, and a plateau reached several years after the investment.

to understand how long FDI creates economic effects that could lead to political consequences.

In order to uncover the relevance of time, this chapter creates a grid raster consisting of 942,000 10x10 equal-sized square kilometer cells that cover the complete landmass of 156 non-OECD countries (see previous Chapter 3).[4] I geo-merge the information on nighttime light pollution provided by Li et al. (2020) as a proxy for economic development with local FDI projects provided by the "fDi markets" database between 2003 and 2018 (The Financial Times, 2018) to identify when cells have received FDI. Given that sites can receive multiple treatments over time, this study relies on the "PanelMatch" package by Imai, Kim, and Wang, which allows the treatment effect to be measured over time and in multiple treatment scenarios (2021).[5] After matching units on their treatment history and refining this matched set by the Mahalanobis distance and propensity score matching, I run a difference-in-differences (DiD) estimator that controls for a time trend and provides the average treatment effect on treated units (ATT) for the eight years after a unit is treated. Point estimates are calculated using a weighted average with weighted bootstrap standard errors to create confidence intervals. Due to the memory-intensive matching and refinement procedures, the assessment was only possible on the 6TB Linux cluster provided by the Leibniz Supercomputing Centre at the Bavarian Academy of Sciences and Humanities.

The findings provide evidence for my theoretical claims: First, it can be observed that economic activity in FDI locations increases over time until

[4]For robustness checks, the chapter also examines 45,000 50x50 and 160,000 25x25 square kilometer grid cells.

[5]I am thankful for the support of In Song Kim, who advised on running their package with such big data.

a plateau is reached after around five years. The estimates for the Mahalanobis distance and propensity score matching are smaller in their margin, while standard errors show identical patterns. Second, treated FDI locations lead to greater regional light disparity in all grid sizes and an increasing slope until years 5–6. The findings are not affected by different grid-cell sizes and sub-setting the grid cells to only neighbor cells of FDI receiving locations. The results back up the central claim of this study: The effects of FDI on economic activity are neither constant nor infinite. This means that policymakers and scholars need to consider the temporal variation of economic consequences as this affects institutions and individuals and vice versa.

The chapter contributes to several disciplines as it makes scholars aware of how vital the element of time for social sciences is. It solidifies its claims by examining a research question at the center of IPE research: Economic development and inequality effects produced by foreign investments in non-OECD countries. Understanding the relevance of time will allow future IPE scholars to conduct more refined estimations of their research questions. It also helps policymakers and governments better evaluate the need for greater re-distributional policies in FDI-receiving locations.

The study is organized as follows: After a brief reflection on how FDI projects drive economic development, the chapter will focus on empirically identifying treatment effects over time. The chapter's main empirical design divides non-OECD countries into equal-sized 10, 25, and 50-square-kilometer raster cells, to which geo-referenced FDI projects and local nighttime development between 2003-2018 are matched. To account for potential sources of endogeneity, such as omitted variable biases and temporal trends, this study applies the pio-

neering treatment matching estimator for panel data created by Imai, Kim, and Wang (2021). After discussing the results, the last section will conclude the findings and the relevance of time for future IPE works.

4.2 How Time Shapes Economic Effects of FDI

Why is it relevant to take the time dimension of FDI seriously and differentiate economic outcomes over time? Concerning the high heterogeneity of FDI, general statements about how investments shape economic development and disparity, especially in less-developed regions, have crucial implications for governments and scholars assessing the potential and necessity to attract foreign investments. According to findings of other scholars, governments create investor incentives and change regulations to attract additional investments (e.g., see Pandya, 2016; Jensen and Lindstädt, 2017; Büthe and Milner, 2008). There is a wide range of literature that speaks for (Alfaro and Johnson, 2013; Alfaro et al., 2006; Feenstra and Hanson, 1997) or against (see Bussmann, de Soysa and Oneal, 2002; Lensink and Morrissey, 2006) the importance of FDI for economic development and disparity (see Nunnenkamp, 2004). Although often ignored, the relevance of temporality should not be underestimated for the political consequences of trade and investment dynamics. Overlooking the connection between FDI projects and public frustration, protest, or election results due to the selection of insufficient lags will bias the findings of IPE works and make government strategies to compensate for and adjust asymmetrical economic effects harder.

This chapter argues for the importance of not simply applying k lags in

estimating economic effects or building averages across years, which is often the case when analyzing the effects of FDI.

Building on the findings of the previous chapter of this dissertation that shows how FDI stimulates direct and indirect effects in the form of growth and distributional consequences at the local level, this study focuses on how those local effects develop over time. After FDI is announced, the labor market and spillover effects occur. These can be expected to create higher economic development at the FDI locations: houses for workers, streets, and other infrastructure, as well as the company itself, will positively affect economic development at the FDI location. After the investments have been made, jobs have been created, local production assets have been constructed, and spillover effects have widely occurred, the economic development of an FDI location ought to experience a plateau unless additional investments are made by the same or other investors.

The same effect can be expected for the economic disparity in the region of the FDI-receiving location. As argued and shown in the previous chapter, neighboring locations do not benefit from FDI to the same degree, as spillover effects are locally constrained (see previous Chapter 3). Over time, this will create a disparity between locations receiving and those not receiving FDI. Moreover, surrounding areas in the same region that did not benefit from the FDI investment might even experience negative effects from FDI: First, because a better-educated workforce could leave the location due to better job chances in neighboring places. Second, domestic companies might experience crowding out due to greater competition on the factor and domestic sales markets (crowding out effects) (see Adams, 2009; Feenstra and Hanson, 1997).

To visualize this development of different locations in the same region,

Figure 4.1 shows the level of economic development (Y) from an FDI project as an outcome. The three lines represent the level of economic development of FDI receiving locations ($Y_{location}$, blue line), non-receiving locations ($Y_{not-location}$, yellow line) in the same region, and the average economic development of all treated and untreated locations in the respective region (Y_{region}, gray line). Thus, the gray line is a weighted average of the blue and yellow lines. In what follows, I argue that it takes some time to create jobs and stimulate economic development and disparity after FDI projects have been announced.

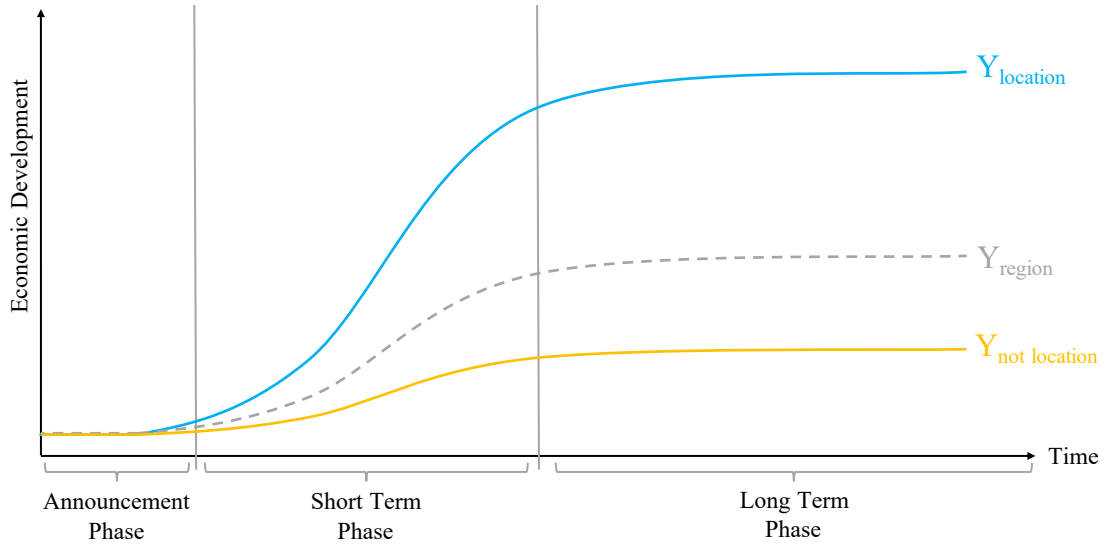

Figure 4.1: Economic effects of an investment project. Blue line: Economic development of FDI receiving location. Yellow line: Average economic development of locations in the same region that do not receive FDI. Gray line: Weighted average of regional economic development as a combination of all locations.

To assess FDI's effects on economic activity and inequality, one can distinguish three phases in the cycle of investments: The phase when FDI is announced by a foreign company (*Announcement Phase*), the phase when FDI creates jobs and leads to an increase of economic activity (*Short-Term Phase*), and the phase

when only spillovers occur and the economic activity reaches a plateau (*Long-Term Phase*). Put mathematically, the economic development of an FDI project at a respective location can be approximated by a logistic function, in which the exponential economic development happens in the short-term phase, and the plateau is reached in the long-term. At this point, the marginal rate of additional economic activity diminishes to zero.[6]

When MNCs announce new FDI projects, the investment is unlikely to lead to direct economic activity in the same year. Instead, political administration and transaction costs may delay the process for several months. Once the investment is finally flowing into a location, it is expected to increase labor demand at the direct FDI location (see the previous Chapter 3 and Palmtag, Rommel and Walter, 2020). Driven by restricted personal mobility, especially in developing countries, commuting potential from other cities to the FDI location is lower than in developed countries. Therefore, the labor demand is expected to lead to concentrated economic effects around the investment location (blue line). In the meantime, other locations in the same region (yellow line) will unlikely directly benefit from this job demand as workers will probably need to move to the FDI location. Nonetheless, FDI is still expected to create additional economic activity through regional spillover effects.

After the short-term period, job creation is limited and diminishes in the long run. The economic activity created by the treatment will likely stabilize over time and reach a plateau. In addition to general spillover effects, the regional

[6]It is vital to note that the development of costs and benefits over time as presented in Figure 4.1 is not discrete and just an approximation: Every FDI project will stimulate individual marginal and continuous economic activity and inequality effects that become visible over time and vary across sectors and places.

economic development (gray line) is also expected to find an equilibrium and reach an overall higher level.

During the short-term phase also, the disparity of economic development within regions and between locations increases over time. In the long run, this level of disparity will likewise stagnate as there are only limited additional benefits an investment can create for the FDI location.

H1: Economic activity and intra-regional disparity increase with FDI projects.

H2: Economic activity and intra-regional disparity will reach a plateau in the long run.

4.3 Empirical Strategy

Previous research on the economic and political effects of FDI has mainly relied on country- or – for some developed countries – region-level measures such as GDP, population, and trade flows. In previous research, the effects of FDI have often been reported as mixed and highly dependent on the regional scope, model specifications, or analysis periods. Only recently have scholars started to understand the local effects of FDI (see previous Chapter 3, and Owen, 2019; Brazys and Kotsadam, 2020; Palmtag, 2020). For this study, it is also necessary to use local FDI data, as national statistics would not allow the heterogeneous economic effects of a singular FDI project to be estimated over time. Thus, this chapter uses geo-referenced and time-stamped information about FDI projects, nighttime light, and population data to measure the effects of investments.

Economic Development Data

It is challenging to measure economic development in less developed countries adequately. As national statistics on local development are often not reported or politically biased, this research relies on an oft-used proxy for economic development: The emission of light captured in satellite imagery collected by the National Oceanic and Atmospheric Administration (see National Geophysical Data Center, 2012*b*).[7] As there have been different satellite systems that have gathered this data over time,[8] this study works with a product by Li et al., who harmonized the data and made it available from 1998 to 2018 (2020). The dependent variable is the average of daily light emissions in a given year – called "Digital Number" (DN)- in a specific grid and is scaled in a range between 0 (no light) and 63 (maximum illumination).

While nighttime light data provide an objective proxy for economic development in a high resolution of one square kilometer at the equator (see Perez-Sindin, Chen and Prishchepov, 2021), it comes with imperfections such as clouds that are difficult to detect at night, sensitivity to bright cities that pollute and bias the whole raster (saturation)[9], the travel time of light which can lead to errors in

[7]Nighttime light data are an adequate proxy for economic activity as any new street, company, household and manufacturing site will increase the average light emission. Measuring local light emission as a proxy for population, expansion, and industrial development is a well-established method (see Cederman, Weidmann and Bormann, 2015; Chen and Nordhaus, 2011; Doll, Muller and Morley, 2006; Ebener et al., 2005; Henderson, Storeygard and Weil, 2011; Kuhn and Weidmann, 2015; Mellander et al., 2015; Proville, Zavala-Araiza and Wagner, 2017; Sutton, Elvidge and Ghosh, 2007; Weidmann and Schutte, 2017).

[8]For the years between 1992-2013, the US National Oceanic and Atmospheric Administration has created an annual weighted average of nighttime light data provided by the Defense Meteorological Satellite Program's Operational Linescan System (DMSP-OLS) (National Geophysical Data Center, 2012*b*). In 2013, the DMSP-OLS nighttime light measures were replaced by the new Visible Infrared Imaging Radiometer Suite (VIIRS) by the Suomi National Polar-orbiting Partnership satellite (National Geophysical Data Center, 2015).

[9]For example, a light increase in places with lower light levels might be observed more easily.

geo-coding the origin of the light (over-glow), and overlooking light spots in the dark, less populated areas (blooming) (see Mellander et al., 2015; Henderson, Storeygard and Weil, 2011; Chen and Nordhaus, 2011). Nonetheless, they can be seen as an adequate approximation of economic activity and inequality at the local level.

FDI Data

The research employs project-level data on greenfield FDI projects from the Financial Times "fDi markets" database (The Financial Times, 2018). For non-OECD countries, the database provides information on 81,229 unique FDI projects in 4,064 FDI locations that were announced between 2003 and 2018. The dataset contains information on the geographic target (city, state, and country), home (origin) country, job creation approximations, investment amount, and respective sector. As the few articles present in the field of political science show, project-level FDI data show great potential in understanding local, regional, and country effects based on individual inflows instead of aggregated measures (see Owen, 2019; Brazys and Kotsadam, 2020; Palmtag, 2020).

Nonetheless, there are several limitations to be aware of: According to Brazys and Kotsadam (Brazys and Kotsadam, 2020), the "fDi markets" dataset contains an over-representation of the capital expenditure that leads to a difference from other data sources, such as the World Bank data on net FDI inflows. This overestimation becomes problematic, mainly because the size of an investment can be decisive in creating jobs. To overcome this bias, the research uses

This is especially problematic as this study compares places with low light emissions with bigger cities.

a dummy variable that indicates in which year a location received FDI instead of taking the exact amount of FDI. Another limitation of the data is that it does not cover mergers and acquisitions, a vital source, especially in the context of developing markets (see Jung, Owen and Shim, 2021). This is why this article solely focuses on greenfield investments. Also, there are FDI projects before 2003 that will affect the economic development in the observed period. This can become especially problematic in difference-in-differences designs that build on the assumption that units have not been treated before.

Finally, the "fDi markets" data covers announcements from press releases and the statements of MNCs and not completed investments. An announcement is relatively cheap and not necessarily connected to the actual flow. Thus, there is not only an overestimation of FDI but, moreover, it will be hard to understand the marginal effects of FDI projects over time from the first months to years after the investment. This causes serious problems for the estimation: As there is a time gap between the announcement and the actual flow, it is nearly impossible to find economic effects in the first year. Instead, economic effects are likely to become visible in the years after that. Given that the empirical design, as presented below, accounts for the possibility of observing changes in levels of economic activity over time, the estimations one to two years after the investment is announced are likely not affected by this problem.

Empirical Design

To detect the influence of FDI projects on the development of light over time, I geo-merge the information on light pollution and FDI data by creating a world

raster of 942,000 10x10 equal-sized square kilometer cells in 156 non-OECD countries (see previous Chapter 3). Instead of arbitrarily deciding whether a grid cell falls into one or the other country, the cells are clipped to the borders as political boundaries often constrain economic activity. Figure 4.2 exemplarily presents this approach for the 10x10 grid cells in Burundi and Rwanda. As all measures for economic development and disparity are based on the average of light, the size of a grid cell is irrelevant to the estimation.

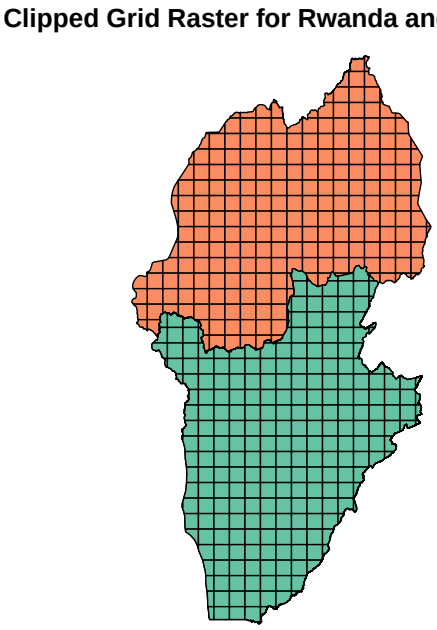

Figure 4.2: Visualization of clipped 10x10 grid cells in Burundi (green) and Rwanda (orange).

I calculate the average light time per year for each grid cell. The grid cells are then intersected with the FDI locations to identify those cells that have received FDI. Figure 4.3 and Figure 4.4 represent this approach for Vietnam and Kenya.

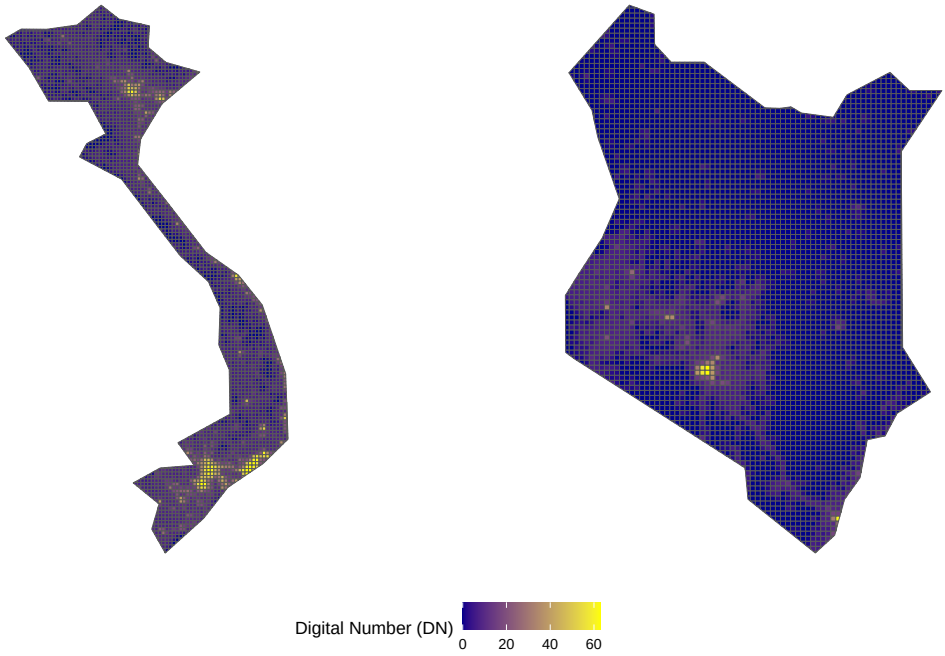

Figure 4.3: Average nighttime light in Vietnam (left) and Kenya (right) between 2003 and 2018 in a 10x10 km raster.

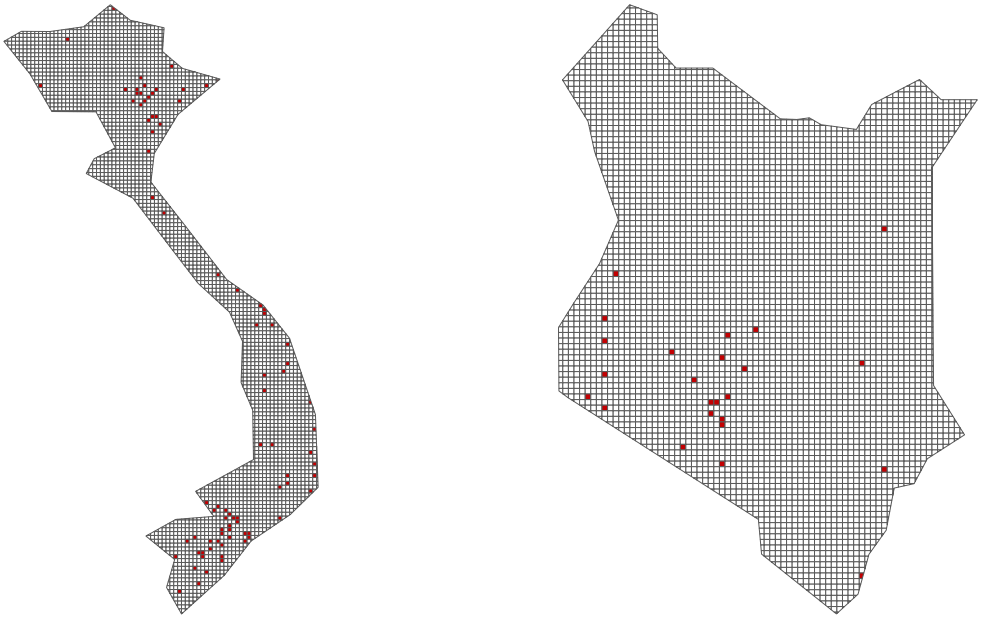

Figure 4.4: FDI locations (red) in Vietnam (left) and Kenya (right) between 2003 and 2018 in a 10x10 km raster.

As a measure of regional inequality (light difference, LD), I identify the direct neighbor cells (blue) of every treated cell (yellow, presented in Figure 4.5) and calculate the difference in the average light between the inner versus the average of all outer grid cells (see the previous Chapter 3).

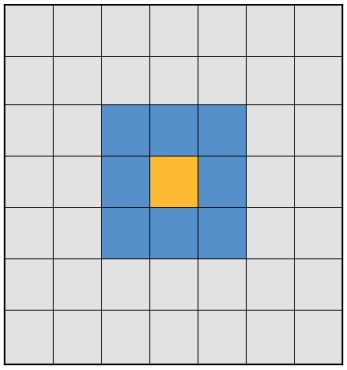

Figure 4.5: Inner (yellow) versus outer/neighboring grid cells (blue).

LD is the light difference of average light in an inner cell (i) to the average light of outer cells (o) in a year (t):

$$LD_{i,t} = \overline{DN_{i,t}} - \frac{\sum_{o=1}^{n} \overline{DN_{o,t}}}{n_o} \tag{4.1}$$

where the mean of DN is the average digital number, which stands for nighttime light pollution in a cell per year, and n is the total number of neighbor cells (maximum is 8). If neighbor grid cells show the same light development as the treated cell, the difference converges to 0. The value increases if the inner cell shows higher light intensity than the surrounding cells. Following the same process, I calculate the difference in light intensity for all untreated cells and their neighbor cells. This study compares the light difference between treated versus untreated cells by taking the difference between one cell with its neighbor

cells and the difference between another cell with its neighbor cells.

Estimation Strategy

This chapter focuses on how to model duration as an influencing factor in stimulating economic development and disparity. To capture the effects of FDI, the article applies a difference-in-differences (DiD) design that compares raster cells that have been treated (FDI exposure) with those that have not been treated (no FDI exposure). The problem with this estimation is the high endogeneity of the treated cells. Choosing all treated with untreated cells in a year would lead to comparing big cities with places with low population density, which would never qualify to receive FDI. Another source of bias is that the decision of investors to enter a location is not independent of other investors and can be influenced by the growth prognosis of a region. Third, investors can also decide to invest in a place multiple times. Thus, establishing unbiased estimations in a DiD design is challenging and requires considering the treatment history when comparing treated with untreated cells.

I build on the estimation strategy developed by Imai, Kim, and Wang (2021) that enables estimation with cross-sectional time-series data and makes it possible to measure the treatment effect over time and in multiple treatment scenarios. The procedure involves three steps: Create a matched set of treated and control units based on their treatment history. Refine this set through matching procedures. Run a difference-in-differences estimator that accounts for the time trend.

Using the authors' R-package "PanelMatch," I first select a group of control

observations that show the same treatment history in the previous three years as the treated unit (Kim et al., 2021). As an illustration, Figure 4.6 shows the treatment history of a subset of grid cells in Nigeria. Red cells show treated years, and blue untreated.

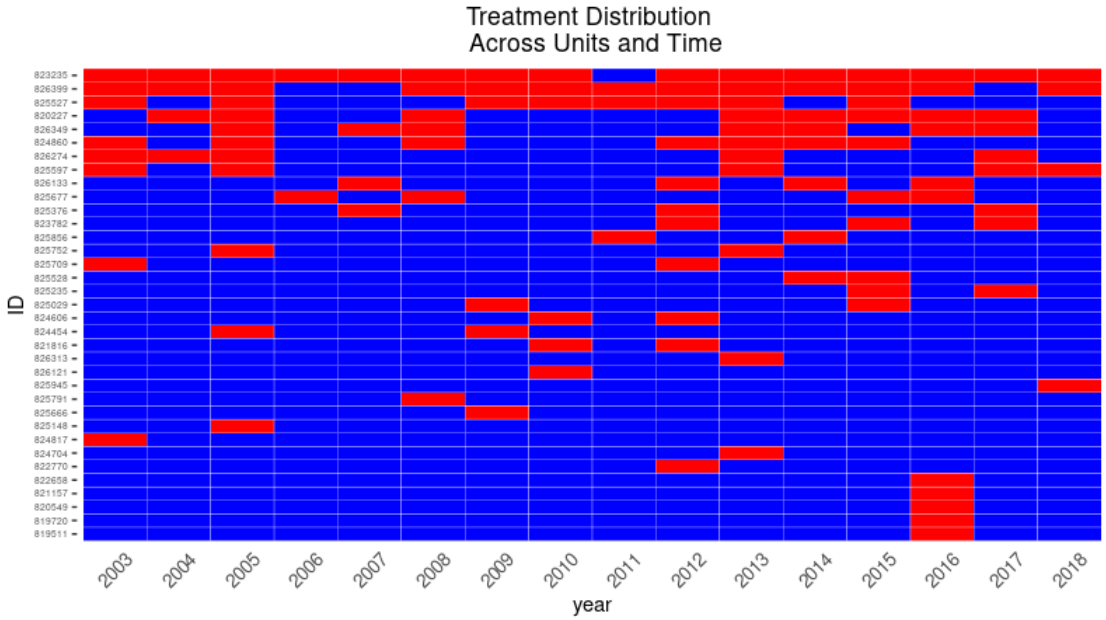

Figure 4.6: Treatment distribution across units and time for a subset of grid cells in Nigeria that receive FDI (red) by year.

This matched set is refined using matching methods to select only the group of five control observations showing the same covariate history. For this refinement, I use the country dummy, the mean of nighttime light in the previous two years, and the population in the last two years.[10] Following the authors' recommendation, I create three sets: Without refinement, the Mahalanobis distance matching, and propensity score matching. For these refined matched sets, I apply a difference-in-differences estimator that controls for a time trend and gives the

[10]The Hyde database (Klein Goldewijk et al., 2017) provides geo-coded estimations of the population over time.

average treatment effect on treated units (ATT) for the eight years after a unit is treated. Point estimates are calculated using a weighted average with weighted bootstrap standard errors to create confidence intervals.

The package is highly memory intensive for the over 15 million rows, so the models run on a 6TB Linux cluster provided by the Leibniz Supercomputing Centre at the Bavarian Academy of Sciences and Humanities. The main reason for the memory intensity is the matching and refinement procedure examined via the PanelMatch package. Before running the DiD estimator, it is necessary to create a pool of potential control units based on the treatment history. Given the high number of potential cells and the fact that many of them have identical treatment histories, it leads to thousands of potential control units for each treated cell. The refinement identifies the best subset of this pool. Finally, this study can run the DiD estimation and calculate confidence intervals with this matched set. As the current package does not allow parallelizing and saving the output of these steps in between, all processes need to run in sequence, which leads to longer constant memory usage.

In contrast to a synthetic control, the treatment matching method allows units to be treated multiple times and at different points and to switch treatment statuses. By matching the treatment history, this study also considers that those previous investments could affect the current light development and attract more investors in the future. While this procedure is advanced compared to other estimation strategies, matching does not fully solve the endogeneity problem.

For example, it does not solve the problem of reverse causality. It could well be the case that investments are made in those locations with the highest economic activity prospect. Moreover, treatment in one place could be spa-

tially depend on the treatment of other locations in the same region. Given that the estimator only matches the trend of the observable information, there could be unobserved confounding variables inducing bias in the matching and estimating technique. As a robustness check, the analysis is run with 25x25 and 50x50 square kilometer raster cells and by sub-setting the pool of observations to treated cells and only their direct first-order neighbors to account for spatial dependence and endogeneity.

It is crucial to understand whether the matching procedures were examined correctly and whether the refinement led to better estimators. The number of matched control units with a treatment history identical to the respective treated location in the past three years is relevant to assessing the first criterion.[11] Many units without matched sets will be problematic for the estimator as it needs enough control units to match treated cells. The diagnostics of matched sets show that the minimum number of control units that have been matched with treated units is 28 and thus far bigger than the five chosen units. On average, 27,233 control units can be matched to the treatment history of a treated unit, which also explains the memory intensity of the analysis.[12]

[11]For the diagnostics, I chose the biggest grid raster size (50km) as this is the most rigid to assess if there are enough control units that meet the criteria and can be matched to the treated cells. For more information on diagnostic tools, see the vignettes of the PanelMatch package accessible via the GitHub Repository.

[12]The reason for the bi-modal distribution of matched control units is that many control units have not been treated. If a unit gets treated for the first time, all control units not treated are marked as potential matches. This also explains the importance of refining the matched set to only those control units with the highest similarity.

Given that it would only be problematic if there were too few matched sets, it is possible to now look at the second criterion: The efficiency of the refining methods. As different matching techniques can lead to different results, Figures 4.7, 4.8, and 4.9 assess the quality of the matching procedure.

Figures 4.7 and 4.8 show that the refinement has improved the covariate balance.[13] Propensity score matching has outperformed the Mahalanobis matching.

[13]The scatter plots "compare the absolute value of the standardized mean difference (...) before (horizontal axis) and after (vertical axis) the refinement of matched sets. A dot below the 45-degree line implies that the standardized mean balance is improved after the refinement for a particular time-varying covariate"(Imai, Kim and Wang, 2021, p. 14).

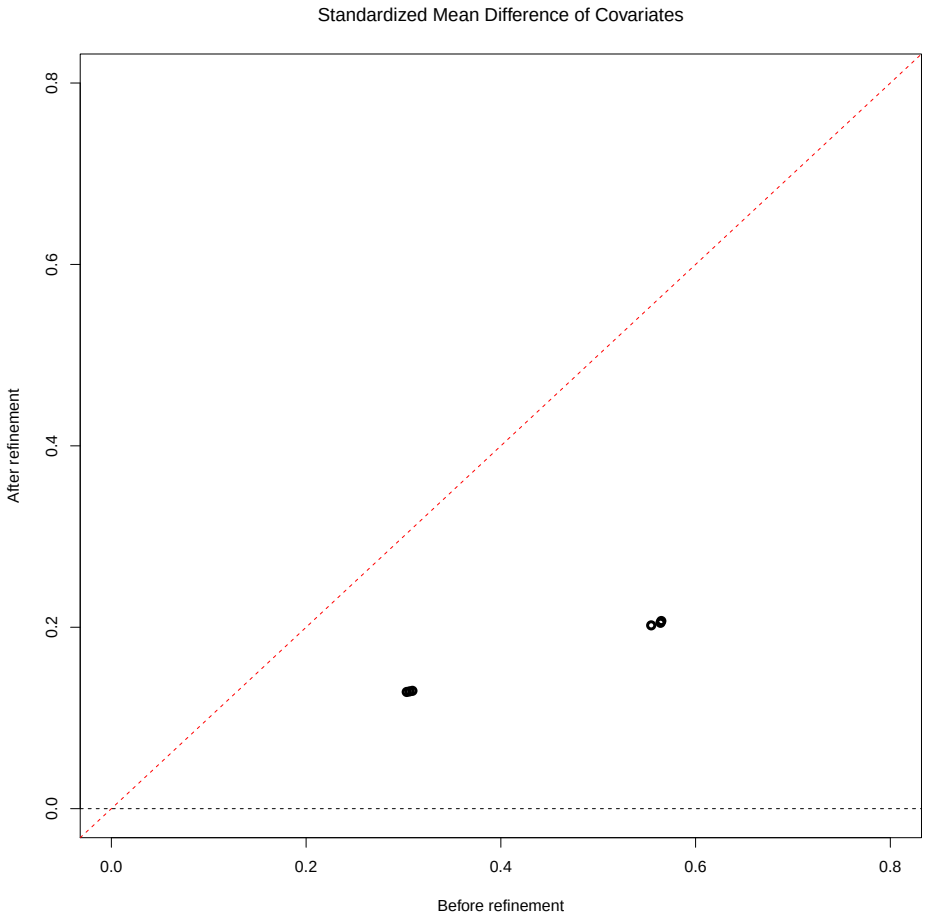

Figure 4.7: Covariate balance after refinement of matched sets with Mahalanobis distance matching.

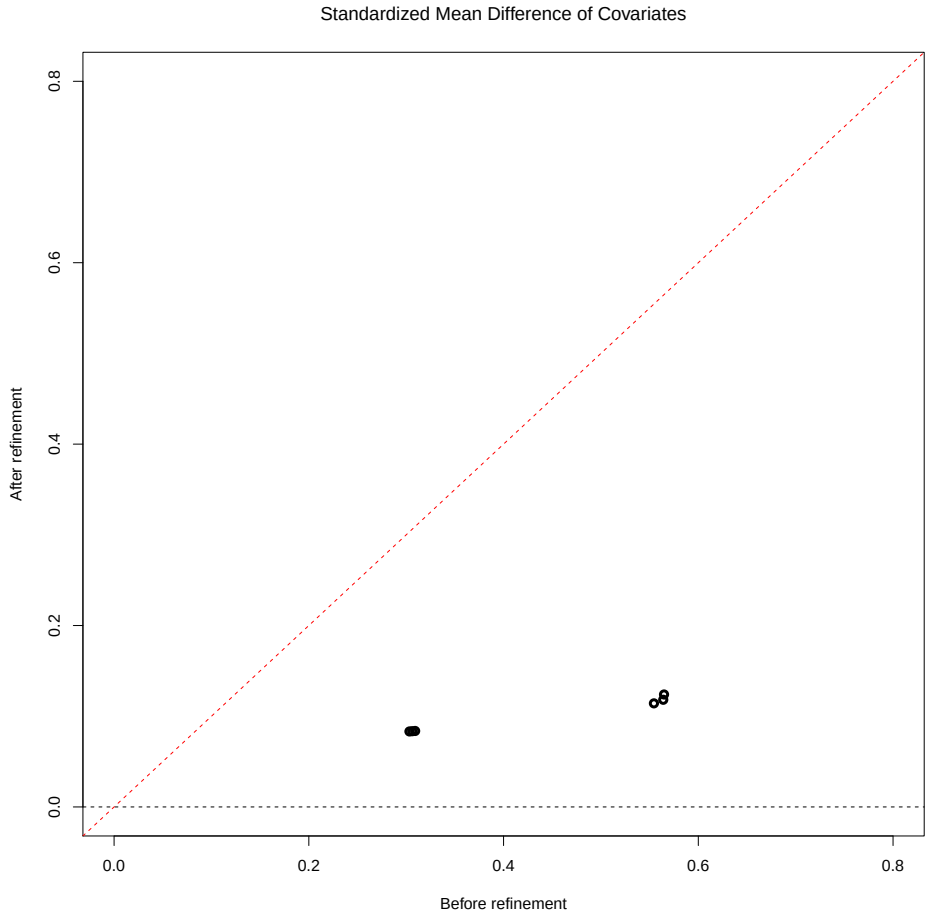

Figure 4.8: Covariate balance after refinement of matched sets with propensity score matching.

Figure 4.9 presents how the covariate balance has been improved before the treatment due to the two different matching methods. The red line shows the balance of the lagged dependent variable, and the black line shows the balance of the population variable. Compared to unrefined sets (first panel), this study finds both matching procedures effective in bringing the balance closer to the zero line and removing the imbalance from the observable confounders.[14]

[14]As will be discussed in the last section of this chapter, the problem of unobserved endogeneity

To say it in the package developers' words: "the standardized mean difference for the lagged outcome stays relatively constant over the entire pretreatment period. This suggests that the assumption of a parallel trend for the proposed DiD estimator may be appropriate."(Imai, Kim and Wang, 2021, p. 15f.).

cannot be overcome by the PanelMatch package, which is a serious limitation of the design.

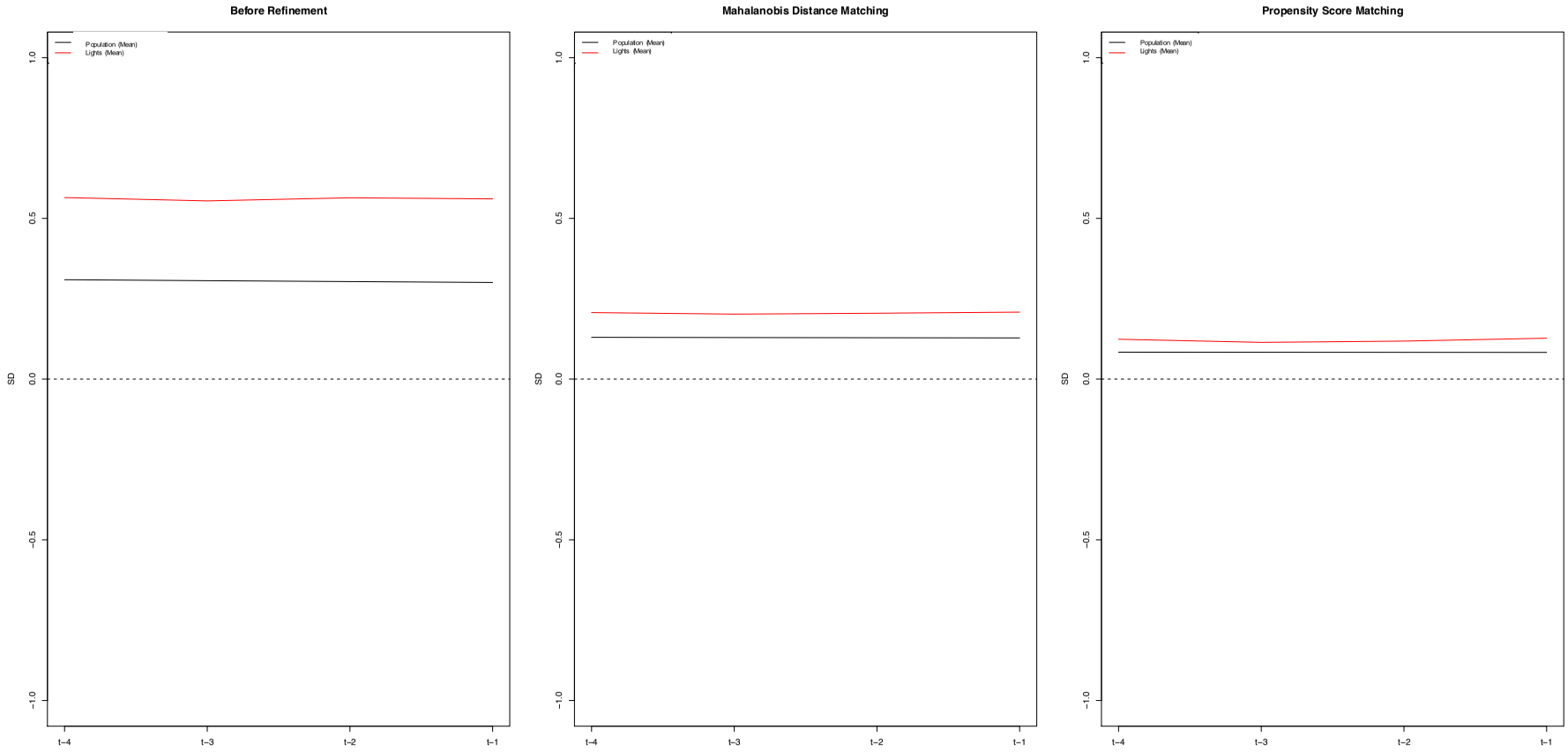

Figure 4.9: Frequency distribution of the number of matched control units. The red line is the lagged light mean, and the black line is the lagged population mean. The plot shows the "standardized mean difference (vertical axis) over the pretreatment time period (horizontal axis)"(Imai, Kim and Wang, 2021, p. 15f.).

Adding to the latter aspect, Figure 4.10 examines the parallel trend assumption, which is crucial for a DiD design. It represents the average light of treated cells versus their neighbor cells eight years before and after treatment. It can be observed that there is a parallel trend before the treatment, and thus, the parallel trends assumption can be taken as given.

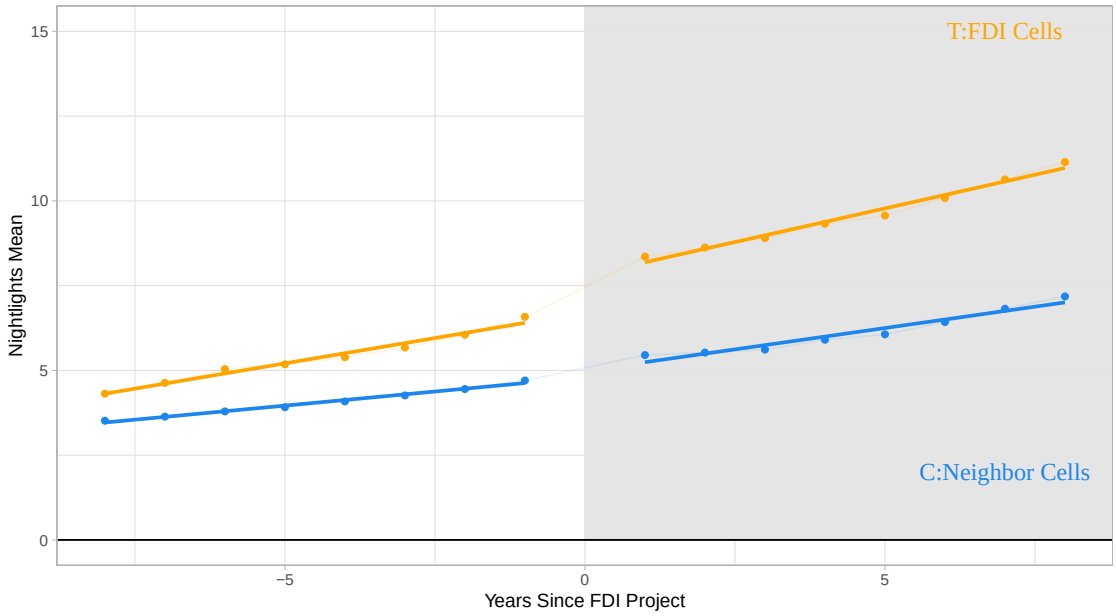

Figure 4.10: Parallel trends plot: Showing the average light intensity of treated versus neighbor cells eight years before and after treatment. Colors correspond to Figure 4.5

4.4 Results

How does FDI affect economic development and disparity in developing countries over time? I argue that economic effects are neither constant nor infinite as FDI can be expected to take some time before resulting in the creation of jobs and stimulation of development after the announcement of new investment in any given location (short-term period) and that economic development is likely to stabilize after reaching a higher level (long-term).

Economic Activity

Figure 4.11 shows the economic development of FDI locations over time for 10, 25, and 50-kilometer cells in an unrefined, the Mahalanobis distance-, and propensity score-matched set. The average treatment factors are all significantly positive for the 10 and 25 km cells but not always for the 50km cells. For the latter grid size, the bounds of the .95 CI are insignificant for the first two years after the investment. This also meets the expectation that economic activity is limited during the announcement phase. Given the nature of the "fDi markets" data, which captures announcements of FDI projects, it is unsurprising that effects are only visible after the first year. The analysis confirms that the average economic activity after an investment is bigger in smaller grid cells, as economic effects are expected to especially become visible near the FDI location. It can further be observed that economic activity in FDI locations increases over time until the development stabilizes after around five years. At this point, economic development stagnates at a higher level. The estimates for the Mahalanobis distance and propensity score matching are smaller in their margin, while standard

errors show identical patterns.

As a robustness check, I run the analysis only with the direct neighbor cells of treated locations. Instead of taking all grid cells as potential control units, I only match and refine based on treated and their neighboring cells. As Figure 4.12 demonstrates, the effects are robust with the more rigid design of only taking the first-order neighbor cells.

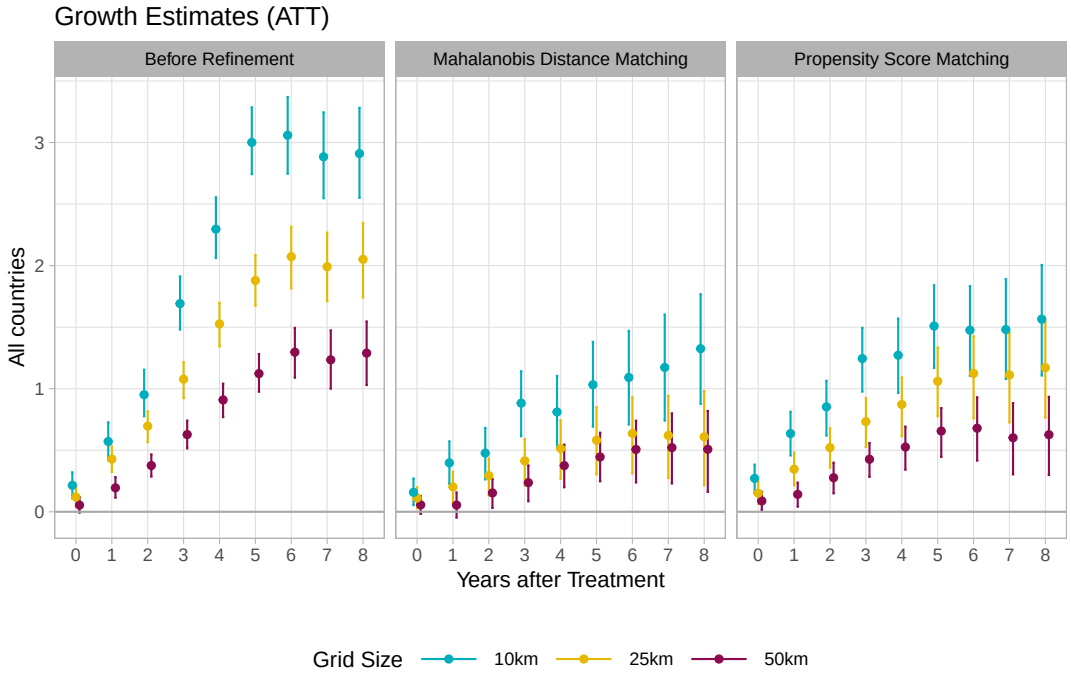

Figure 4.11: Economic activity estimation (ATT) for 0 to 8 years after the FDI treatment by different grid cell sizes: 10 (blue), 25(yellow), and 50(red).

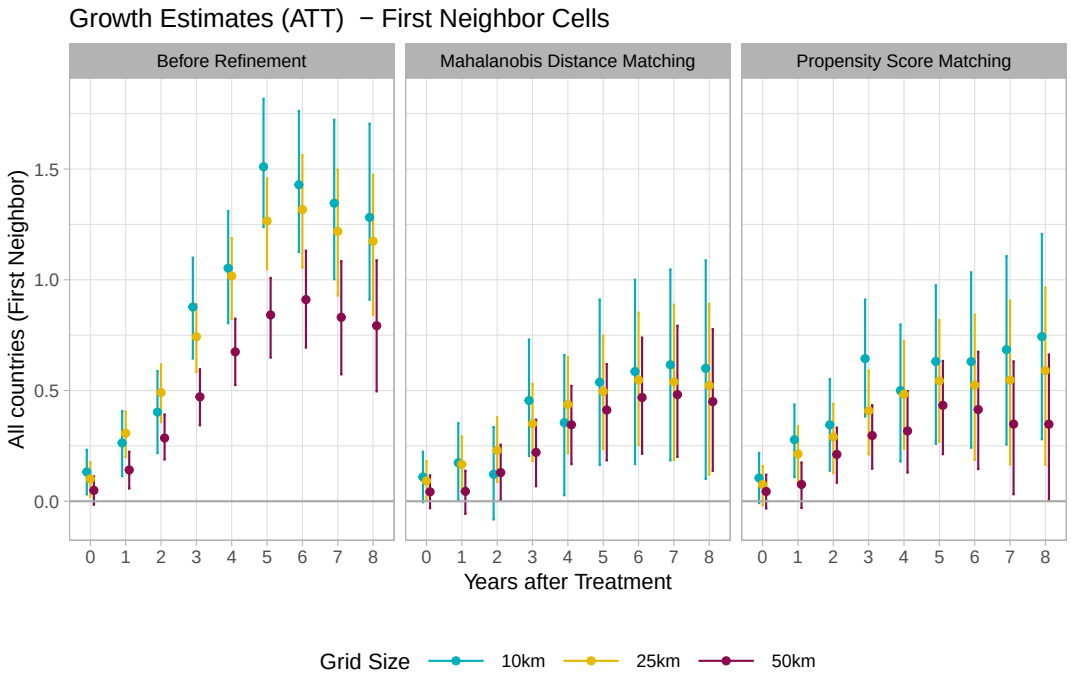

Figure 4.12: Economic activity estimation (ATT) for 0 to 8 years after the FDI treatment by different grid cell sizes: 10 (blue), 25(yellow), and 50(red). Comparing treated cells with first-order neighbor cells.

Disparity Effects

The second part of the analysis focuses on the effects of FDI on intra-regional disparity. Figure 4.13 shows the effects of FDI on the light development of the inner versus the average light development of the surrounding grid cells. Positive coefficients indicate an increasing asymmetrical light development distribution and represent higher inequality. The results for the 10km raster have not been computed due to insufficient memory. The empirical evidence supports the theoretical expectations: Treated FDI locations lead to greater regional light disparity in all grid sizes with an increasing slope until years 5 to 6.

The first neighbor analysis shown in Figure 4.13 supports the general observation. However, estimates of the smallest - 10km - grid cells show bigger standard errors. This can be explained by the fact that FDI projects' economic effects overlap with neighbor cells if taking smaller grid cells. Thus, the first-order grid cells will moderate some of the actual FDI location effects. When taking the difference between those grid cells and their first-order neighbors - the second-order neighbors of the treated cells - they also show higher inequalities moderated by transmitting the effects of the 10km grid raster. This speaks for the assumption that neighbor cells benefit from FDI through spillovers and indirect effects but that - over time - the FDI receiving location will outperform the light development of the neighbor cells, and thus, intra-regional inequality relatively increases.

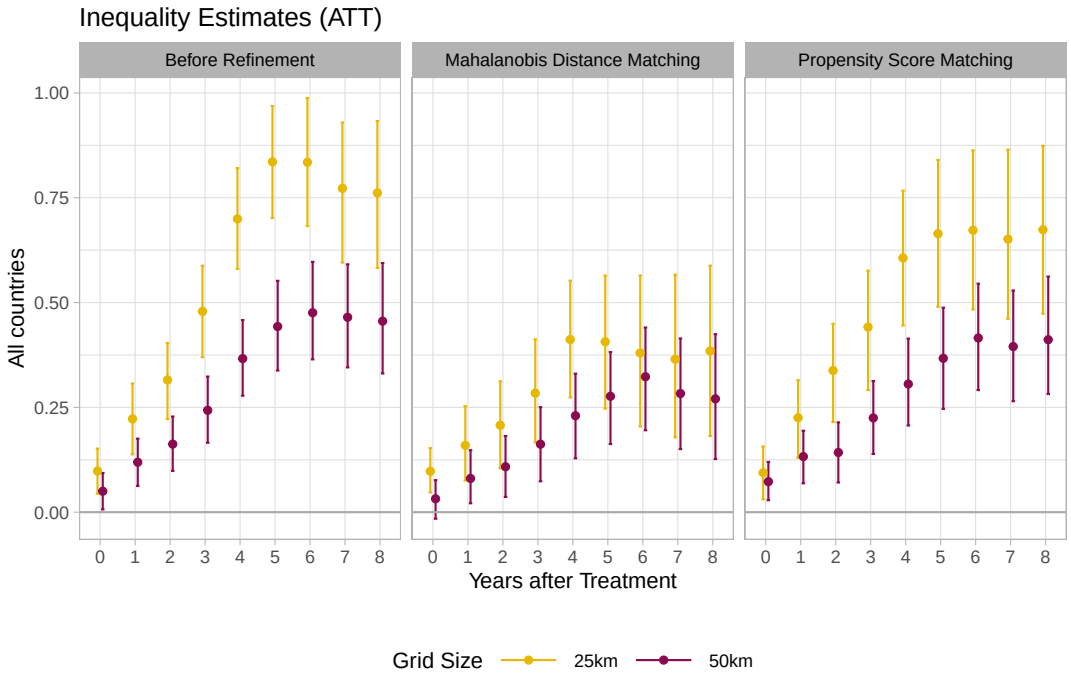

Figure 4.13: Inequality estimates (ATT) for 0 to 8 years after the FDI treatment by different grid cell sizes: 25(yellow) and 50(red).

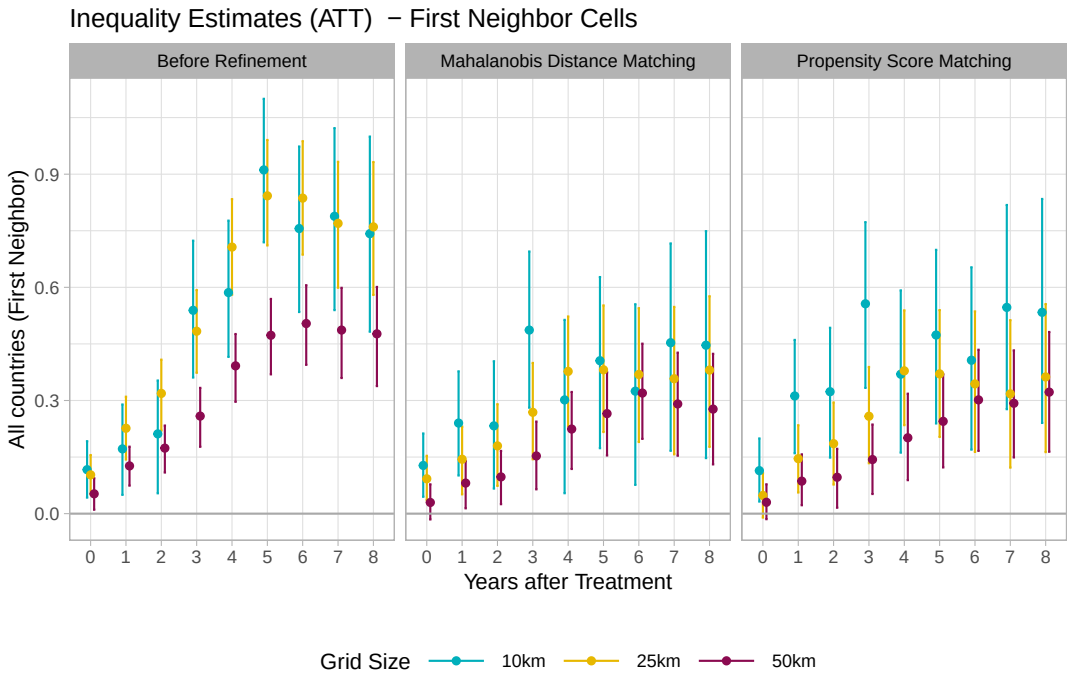

Figure 4.14: Inequality estimates (ATT) for 0 to 8 years after the FDI treatment by different grid cell sizes: 10 (blue), 25(yellow), and 50(red). Comparing treated cells with first-order neighbor cells.

4.5 Concluding Remarks

An extensive literature of economics and political science scholars has tried to understand the effects of foreign capital, such as FDI, on the growth and inequality in lesser-developed countries. The research question has not yet been conclusively answered and has not yielded unanimous findings. As a new strand of IPE research shows, it is necessary to differentiate the complex and heterogeneous effects of FDI and to move from a focus on national to local FDI effects (see the previous Chapter 3 and Owen, 2019; Palmtag, Rommel and Walter, 2020).

The current literature often assumes that MNCs' FDI stimulates constant and time-invariant economic and political effects. As argued in this chapter, there are many reasons to doubt this assumption, as investments need time to arrive and will not create infinite development. Thus, this study aims to understand the relevance of time for economic development, the distributional consequences induced by FDI, and the many underlying arguments in the IPE literature. This research hypothesized that economic effects would vary over time through the conceptualization of short- and long-term periods. I argued that local economic activity and disparity would not directly increase in the year an FDI project is announced but rise during the five years after an investment (short-term period) and stabilize over time with a higher level increase.

The findings give evidence to this claim. As the grid cell analysis results show, nighttime light as a proxy for economic development increases more strongly in locations that have received FDI compared to locations that have not. This supports the findings of the previous chapter. Aside from the general finding of level changes, it is evident that the economic effects of FDI are not constant.

On average, economic activity in FDI locations requires time to take off and stabilizes after around five years. The findings are robust, with several grid sizes and a sub-sample of only first-order neighbor cells.

This study adds to the scholarly debate by more carefully taking into account the importance of time for investments to create economic development and inequality. Substantially, the conclusions of this chapter are essential for policymakers on how foreign investment, often among the only external sources of unrestricted capital in developing countries, creates asymmetrical economic dynamics at the local level. Understanding when FDI stimulates economic activity and how long it does can support policymakers in balancing out the distributional consequences of FDI. Given that development and inequality can occur up to 5 years after the investment, scholars might add another section of robustness checks to any work that aims to understand the effects of FDI on locations, institutions, or individuals over time.

This chapter offers important implications for social scientists: Future work should do more to account for the factor of time in their models. It is insufficient to lag the independent variable by a year and estimate effects. Instead, this chapter calls for using newly available time-series data and looking into the well-equipped toolbox of empirical methods. With increasing data availability of geo-merged panel data, scholars can apply estimation strategies that also work with multi-treatment scenarios.

The PanelMatch package by Imai, Kim, and Wang (2021) has proven to be an adequate estimator: In comparison to the error correction model (ECM) or the autoregressive distributed lag model (ADL) that allow short- and long-term effects to be differentiated as suggested by De Boef and Keele (2008), the Panel-

Match estimator allows not only the treatment history to be taken into account but allows the study to further run DiD estimators that provide the average treatment effect for treated cells per year. Following the treatment effect by year is a methodological development supporting future scholars to take time even more seriously. While ECM models presuppose a "long-run equilibrium" to which the system returns, my argument is based on the logic of "increasing returns" and long-term increases in economic development and disparity. The latter cannot be reproduced with ECMs. Another reason against applying ECM and ADL models is practical: Both estimation techniques require long time-series data as they observe how one unit that experienced FDI develops over time. While the dataset covers the period between 2003 and 2018, there is a higher chance that the treatment happens in the final years and no equilibrium is reached afterward. PanelMatch, instead, does not need to have a long time series as it compares different units with each other.

On the other hand, it is relevant to notice that PanelMatch is not fully unbiased either: Although it controls for observed endogeneity, especially time-variant unobserved endogeneity can still bias results. For example, a company does pre-announcement research and finds out that a region just discovered a highway will be built, and they then make their investment decision at this location. The model will believe that FDI afterward is the cause of the increases in light, although there is the existing third unobserved variable - the highway- that explains both.

Future research should consider how political institutions drive the relationship between FDI and economic outcomes. It can be noted from the previous Chapter 3 that regime types can influence the economic outcomes of FDI. Like-

wise, it is probable that different institutional contexts moderate the duration and intensity of economic development and disparity over time. Scholars should identify if regime type, the degree of decentralization, and the independence of regions affect the duration and margins or economic effects stimulated by FDI. Another interesting aspect would be to analyze differences in sectors of FDI. It could well be that the economic development and disparity changes between different sectors that require more or fewer workers and create more or fewer spillovers for the region. Moreover, case study designs could identify if and how re-distributional measures by governments can improve intra-regional disparity. This indeed has implications for individuals and their economic situation, which will be central to the following Chapter 5.

The findings of this chapter are relevant for policymakers and governments. It is not only the divergence of economic effects after an investment that determines local economic developments: FDI might lead to multiplier effects that also benefit the FDI-receiving location in experiencing higher economic development in the future. For example, if FDI projects have improved the infrastructure in a location, growth can accelerate faster even without additional FDI. Thus, non-exposed sites will not just lag behind FDI hotspots during the labor market and economic effects of FDI flows but could also be manifested in a systemic regional inequality that exists in the long term. It is necessary for governments to take into account disparity and asymmetrical economic development when attracting foreign investors. Through the support of labor rights, re-distributional policies, and investment regulations, governments can aim to balance the economic effects induced in local communities through the allocation of FDI.

Chapter 5

Local Effects of FDI on Political Grievances: Evidence from Africa

Abstract

Does Foreign Direct Investment (FDI) affect citizens' political frustrations with the government in developing countries? This paper aims to understand how FDI drives the subjective grievance of individuals and how those translate into people's satisfaction with their government. Building on the concepts of subjectivity and geotropism (the connection of individuals to their local or ethnic community), it is argued that FDI negatively shapes the frustration of the majority of people in developing countries. Focusing on regional and ethnic favoritism in African countries, the paper expects that individuals not politically connected to their national leader will feel more insecure and show higher frustration with the government once exposed to FDI. By geo-matching individual survey data from Afrobarometer surveys between 2003 and 2018 (rounds 2-7) with local information on FDI projects from the fDi Markets database, nighttime light emission, population data, and other controls, the paper applies a difference-in-differences design to compare individuals located in regions that have received with those that will receive FDI. The results show that individuals exposed to FDI are more frustrated with the government. Examining the influence of favoritism, the results indicate that individuals living in regions with a high share of discriminated groups show higher dissatisfaction. The results are robust with different model specifications and estimation strategies but have several data- and model-related limitations. The paper contributes theoretically to the existing literature on the political consequences of FDI and advances the methodological debate by applying local rather than national, individual instead of aggregated data, and focusing on African countries.

Keywords: Foreign Direct Investment, well-being, satisfaction, favoritism, ethnicity, representation, developing countries, Africa.

Acknowledgements

I would like to thank Timm Betz, Sarah Bauerle Danzman, Tim Büthe, Cindy Cheng, Karsten Fischer, Hannah Löffler, Erica Owen, Tabea Palmtag, Amy Pond, Tobias Rommel, Marcel Schliebs, Rachel Wellhausen, as well as workshop participants at the Hochschule für Politik München IR Research Group, the IPES 2022 Conference and the Political Economy Workshop at the Department of Government at Harvard University for helpful comments and suggestions. I am grateful to the TUM School of Management and the Chair of International Relations led by Tim Büthe at the Hochschule für Politik München, that generously offered

funding to purchase data used in this study and provided a highly supportive research environment, and the Leibniz Supercomputing Centre at the Technical University of Munich for access to the technical infrastructure.

5.1 Introduction

How do individuals experience globalization in developing countries? While economic development has often been assumed to bring growth and stability to developing countries, increasing inequalities, protests, autocratic backlashes, and rising frustrations with governments have led to the question: Why do we experience social and political tensions with increasing globalization and economic integration? Understanding the role of international investments in shaping political outcomes has led to a rich IPE literature, which has not conclusively answered if and how investments drive frustrations with the government.[1]

Since the 1980s, the amount of Foreign Direct Investment (FDI) in African countries has continuously risen and is, nowadays, a vital resource of unrestricted capital (see Figure 5.1).

[1]To mention some excellent works that examine FDI and trade effects on public opinion as well as policy preference (see Walter, 2017, 2010; Owen, 2015, 2013; Chilton, Milner and Tingley, 2020; Mansfield and Mutz, 2013), voting behavior (see Owen, 2019), and protests (see Palmtag, 2020; Palmtag, Rommel and Walter, 2020).

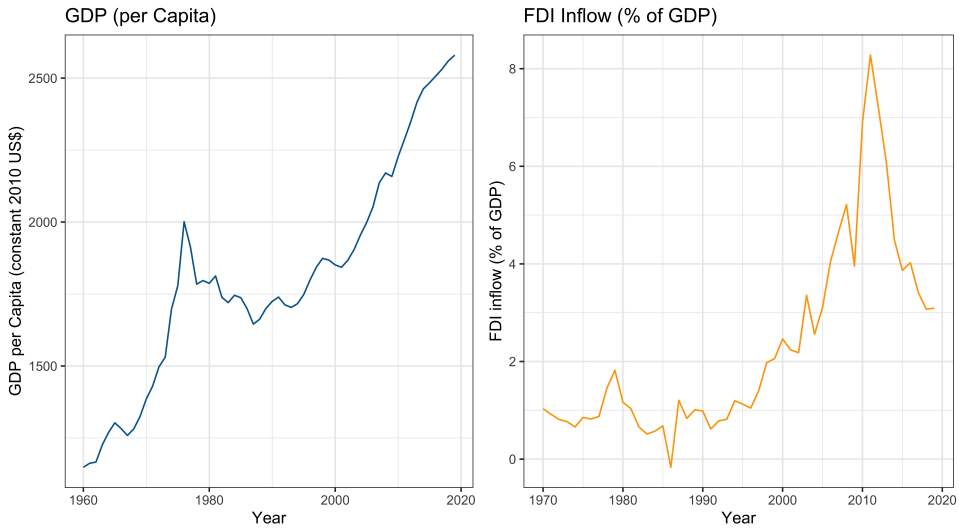

Figure 5.1: Growth and FDI inflows to African countries. Left: GDP per capita (as constant 2010 USD). Right: FDI inflows as a percentage of GDP. Source: UNCTAD (2022).

Previous findings would lead us to expect that with increasing economic development (presented in the left panel of Figure 5.1), citizens report higher well-being and satisfaction with their government. However, a glance at the Afrobarometer survey database (Afrobarometer, 2019), which covers more than 200,000 responses in 7 waves of 36 African countries,[2] shows the reported economic situation between 2005 and 2017 and the performance ratings of the government have not improved in the last decades (see Figure 5.2).[3]

[2]Algeria, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Egypt, Gabon, Ghana, Guinea, Ivory Coast, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, São Tomé and Príncipe, Senegal, Sierra Leone, South Africa, Sudan, Swaziland, Tanzania, Togo, Tunisia, Uganda, Zambia, Zimbabwe.

[3]The rapid deflection of the average lines in the reported figures can be explained by the fact that there are data only for a few countries in some years, and thus the average line is more volatile.

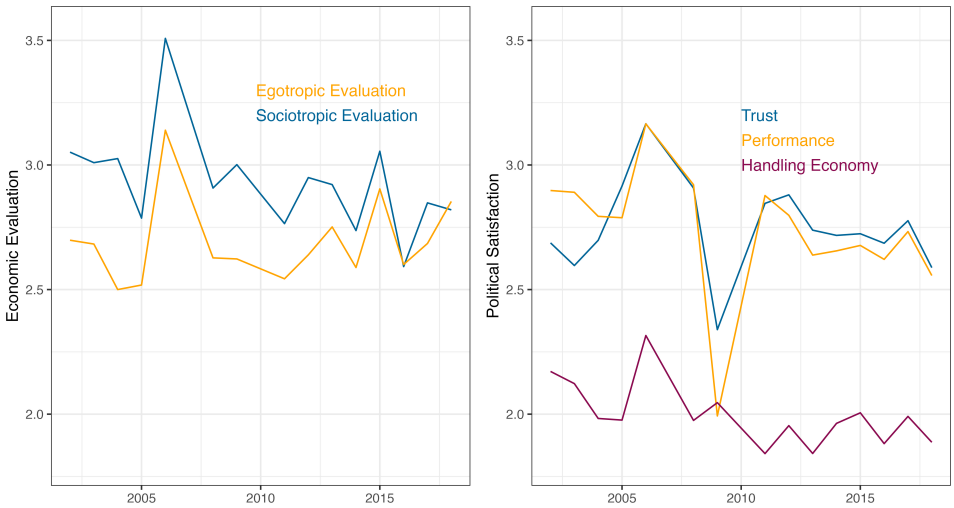

Figure 5.2: Afrobarometer survey results for 36 African countries used in this study. Left: Economic evaluation (sociotropic evaluation: Blue, egotropic evaluation: Orange. Scale: very bad (1) to very good (5). Right: Trust in president: Blue, performance rating for president: Orange, overall management of economy: Purple. Strongly disapprove (1) to strongly approve (4). Source: Afrobarometer. For the wording of the questions, see Section 5.3.

In an attempt to explain why economic evaluation and political satisfaction have not improved with higher growth rates and rising FDI, this paper aims to answer how individuals' exposure to FDI affects their satisfaction with the national government. In contrast to the existing IPE literature that mainly focuses on the individual material well-being and aggregate economic impacts of FDI on the national or regional level, this paper argues that FDI affects subjective feelings of insecurity or vulnerability in developing countries because the labor market demand of FDI asymmetrically benefits skilled workers.[4]

While only some workers might gain or lose their job as a direct conse-

[4]Numerous existing empirical studies show the asymmetrical benefits of FDI for higher-skilled workers (see Menéndez González, Owen and Walter, 2023; Jensen, Quinn and Weymouth, 2017; Autor, Dorn and Hanson, 2013; Mansfield and Mutz, 2009; Scheve and Slaughter, 2004; Walter, 2017; Palmtag, Rommel and Walter, 2020; Rommel, 2018; Walter, 2010)

quence of FDI, indirect negative externalities from investments - for example, wage inequality or job volatility - will increase the overall insecurity of many workers at an FDI location (e.g., see Walter, 2010; Scheve and Slaughter, 2004). These indirect effects lead individuals to fear the future and the investments' consequences for their economic security. This paper argues that especially lower-skilled individuals, the majority of workers in developing countries, experience these asymmetrical economic consequences and feel more insecure.

Individual insecurities from FDI projects are shown not to only depend on individual characteristics such as skill level (egotropic assessment) or the country's overall development (sociotropic assessment). They are also influenced by people an individual feels connected to in their everyday life (neighborhood, social group, co-workers). According to the so-called "geotropic assessment," an individual connected to a group that feels more vulnerable and has a higher grievance with the government may generally feel less secure when exposed to FDI and have higher political dissatisfaction with the government. The paper argues that even higher-skilled individuals who are expected to be more satisfied after incoming investments may feel less secure in response to local FDI inflow as the pressure and vulnerability from others in the social group affects their evaluation.

If governments do not counter the distributional consequences of FDI, individuals may feel "left behind," and economic circumstances likely result in a political grievance. Therefore, contrary to previous expectations of positive political outcomes for incumbents induced by FDI (e.g., see Owen, 2019), this study anticipates that FDI leads to dissatisfaction and distrust.

The degree to which individuals are frustrated about the government also

depends on the active decision of incumbent governments to provide compensation measures to accommodate the distributional consequences for most people. In countries with lower accountability and institutional quality, governments have an easier time favoring specific regions or social groups to stay in power. It is thus an active choice of the government to benefit some individuals and groups against others and create asymmetries that will negatively affect the protection and vulnerability of citizens. Therefore, individuals living in places with a strong welfare provision or an increased representation in the political process supposedly feel less insecure about FDI, and this leads to lower distrust of the government. In contrast, the negative effects of FDI will be greater when it is located in regions that the national government does not favor because those regions do not expect to be compensated for the greater risk and volatility associated with FDI and feel under-represented by their political leader.

To test this mechanism, this study examines the role ethnic and regional divisions play in the effects of FDI projects on political satisfaction in Africa. Following the logic of geotropic assessment, this paper expects that people who belong to a group that feels underrepresented and excluded because they experienced disadvantageous treatment in the past may show higher dissatisfaction with the government as an outcome of FDI. Engaging with the concept of favoritism, the paper analyzes if the birthplace of a leader (regional favoritism) or the identification with an ethnic group that is discriminated against (ethnic favoritism) are relevant interacting elements when understanding the effect of FDI on political satisfaction. Suppose people belong to a group not connected to the political leader by their ethnic group or birthplace. In that case, the negative impact of FDI on political satisfaction might be more extensive as individuals feel

less protected by the government.

The paper aims to make three theoretical contributions: First, it elaborates on how FDI drives subjective grievance of individuals by introducing the concept of subjectivity. Second, it uses geotropic information to better understand how foreign investments shape people's satisfaction and political grievances with their government. Third, it incorporates arguments from the favoritism and ethnic conflict literature to explain the political attitudes of citizens underrepresented by the national government and exposed to FDI flows.

Aside from its theoretical contribution, this paper also makes three empirical contributions: It examines the effects of local rather than national FDI data, applies individual instead of aggregated survey data, and focuses on African countries. First, many studies look at the aggregated amounts of FDI at the national level (e.g., see Scheve and Slaughter, 2004; Neumayer and de Soysa, 2005; Jude and Silaghi, 2016; Büthe and Milner, 2008, 2014, 2009). However, studies on local and regional developments indicate the necessity to break with aggregated cross-country analyses (see Fortunato, Swift and Williams, 2018; Jensen, Quinn and Weymouth, 2017; Ansolabehere, Meredith and Snowberg, 2014; Owen, 2019). For example, Jensen, Quinn, and Weymouth highlight that macro studies would reduce degrees of freedom to a minimum and lead to biased models (see 2017; p. 5). As shown in the previous Chapter 3, growth and inequality effects are bound to the FDI location as foreign investments allow for limited mobility and spillover potential, especially in developing countries. The heterogeneous consequences from FDI projects are thus especially visible on the local level in proximity to the investment. Without local data, it would be hard to understand how FDI shapes individuals, as those are expected to especially

react to direct exposure to investment projects. Therefore, this paper examines geo-referenced project-level FDI data to understand the mechanisms of FDI and individual grievances.

Second, the paper uses individual-level survey data from the Afrobarometer to identify the effect of FDI. Given that numerous individual characteristics (media consumption, age, socioeconomic status) are relevant, aggregated survey polls would not help answer the research question and explain how frustration develops as an outcome of FDI.

Third, data accessibility determines the case selection: most of the IPE works are centered around Europe and North America (see, e.g. Jensen, Quinn and Weymouth, 2017; Ballard-Rosa et al., 2021; Autor, Dorn and Hanson, 2013; Walter, 2017). However, direct and indirect effects might also become evident in developing countries, as FDI is an integral part of the national capital, and developing countries depend on accessible assets.[5]

As most IPE research, including the literature this paper interacts with, is mainly about developed countries, the examination of developing countries might create different empirical findings: Given that the composition, education, and mobility of workers, the speed of technological spillover, the limited financial infrastructure and other aspects in developing countries are different from those in developed countries, one might expect stronger effects of FDI on the individual economic and political grievances. At the same time, while the different composition of workers' education and the welfare-state provision are likely to lead to other empirical findings between low- and high-income coun-

[5]According to the World Bank, FDI net inflows made up 3% of the national GDP on average in low-income countries since 2000 (The World Bank, 2019).

tries, the theoretical mechanism that speaks to the labor market effects of FDI and the frustration of individuals are expected to be the same. To shed light on developing countries, the paper will follow recent works (see, e.g. Brazys and Kotsadam, 2020) and conduct an analysis based on 36 African countries and highlight the mechanisms for countries of the global south. Data and findings from African countries allow to draw conclusions that are generalizable also to other developing countries as the set of countries represents and combines several characteristics in terms of the political system, degree of ethnic fractionalization, economic development, political tensions, and other historical and economic attributes.

By geo-matching individual survey data from Afrobarometer survey data (2019) between 2003 and 2018 (round 2-7) with local information on FDI projects from the fDi Markets database (The Financial Times, 2018), nighttime light emission (Li et al., 2020), population data (Klein Goldewijk et al., 2017) and other controls, this study examines the effect of FDI on the individual through a difference-in-differences design. Interacting the effects of FDI with ethnic and regional favoritism variables is meant to uncover the mechanism mentioned above.

The paper finds mixed effects of FDI on political satisfaction with the government. The results show that FDI increases the frustration of people. Political under-representation in the form of discrimination of ethnic groups seems to be an effective driver of insecurity for individuals exposed to FDI. The results are robust with different model specifications and estimation strategies but have several limitations. Nonetheless, this study is among the first to analyze the local effect of FDI on an individual's political satisfaction, taking into account ethnic

and regional favoritism in Africa, and can be seen as a starting point for further research to explain the puzzle between FDI and individual political grievance.

5.2 Theory

The paper aims to understand whether individuals exposed to FDI develop economic and political grievances. Before elaborating on the concrete mechanism of how individuals are pressured by FDI and may translate economic uncertainties into dissatisfaction with the government, it is necessary to define critical terms that are being applied:

By *exposure* of individuals to FDI, this paper refers to the degree to which individuals and households experience (in-)direct externalities of a foreign-owned company in their region. The level of exposure varies depending on the distance to a project (see Chapter 3) but can also be influenced by the size or sector of investment and local economic conditions.[6]

There is a wide range of literature on the direct and indirect distributional and economic consequences of globalization, trade, and FDI on economic development and the asymmetrical distribution of wealth.[7] This paper understands

[6]For Walter (2017), "the impact of globalization on the individual thus depends on whether an individual is employed in the tradable or non-tradable sector or, more generally, whether the individual is exposed to international competition or not" (p. 58, see also Ahlquist et al., 2020). While the sector is a relevant factor, I argue that people who work in unrelated sectors can also be affected by FDI.

[7]While most economic studies show growth enhancing (see De Mello, 1999, 1997; Borensztein, De Gregorio and Lee, 1998; Hansen and Rand, 2006; Alfaro et al., 2004; Lumbila, 2005; Nwaogu and Ryan, 2015; Iamsiraroj and Ulubaşoğlu, 2015; Jude and Levieuge, 2017; Markusen and Venables, 1999; Hermes and Lensink, 2003) and spillover effects (see Liu et al., 2000; Liang, 2017; Meyer and Sinani, 2009; Iwasaki and Tokunaga, 2016; Gorodnichenko, Svejnar and Terrell, 2014) some works address distributional consequences for the citizen, e.g., see works on FDI and inequality (Goldberg and Pavcnik, 2007; Palmtag, 2020; Choi, 2006; Lessmann, 2013; Basu and Guariglia, 2007; Herzer, Hühne and Nunnenkamp, 2014; Feenstra and Hanson, 1997),

the *direct* effects of FDI as the change of the immediate employment situation of an individual. It can be positive when individuals gain a job or negative when they lose jobs after an MNC invests in their company. *Indirect* effects are all other externalities of investments that have secondary effects on the individual: Investments can shape the relative consumer power, increase wages, create public infrastructure, and stimulate additional productivity through spillovers, but also lead to negative consequences such as job volatility due to higher competition, inequality, or crowding out of other firms (see Footnote 7).

This study makes four core arguments that shall be explained in length in this section: First, as most exposed individuals in developing countries are lower educated, FDI is expected to create indirect negative effects and a subjective feeling of insecurity for most individuals. Second, individuals assess outcomes of FDI not only through their egotropic situation but also anticipate the geotropic pressure FDI puts on their local community. Third, the economic grievances of vulnerable people translate into frustrations with the government when incumbents do not provide re-distributional measures that cushion rising insecurities or establish input legitimacy by including representatives of all citizens in the decision-making process. This paper argues that due to the limited availability of welfare programs in developing countries, most individuals develop political frustrations due to their economic insecurity driven by FDI. Fourth, if governments decide to discriminate or exclude people in the local community from the political process or maltreat them by not providing re-distributional measures, the overall insecurity and dissatisfaction of those in that region will increase. In what follows, I expect people living in less preferred or discriminated regions

job security (Scheve and Slaughter, 2004), and human rights (Mosley and Uno, 2007).

to feel more insecure and have higher frustration with the government once exposed to FDI compared to individuals who feel more protected because they live in preferred places and have stronger connections to the government.

FDI and Individual Well-Being: Subjectivity

The first core argument of this paper is that while investments only affect a handful of people directly through job gains or dismissals, they can potentially drive indirect effects for many workers. These indirect effects of FDI stimulate individuals to understand their situation in *subjective* terms: In contrast to objective effects that refer to measurable growth and inequality effects at the FDI location, subjective assessments of individuals refer to the feelings, attitudes, sentiments, and social norms as an outcome of FDI. For example, while a location can experience economic development and prosperity driven by investments, the individual can still feel the contrary, develop concerns, and sense vulnerability to the exposure of FDI (Walter, 2017, see also Scheve and Slaughter, 2004; Anderson and Pontusson, 2007; Rehm, 2009; Walter, 2010). Following Scheve and Slaughter (2004), I argue that FDI can increase the elasticity of labor demand, resulting in higher volatility of wages and job fluctuation. This, in the end, might reduce the security of workers indirectly as they are driven by concerns of economic changes and rising disparity.[8]

My argument is not that FDI will make every individual equally concerned: It is known from firm-level new new trade theories developed by Melitz,

[8]While this and other studies focus their empirical analysis on developed countries, the general mechanism of how FDI stimulates labor market effects are presumably similar in the developing context. What may differ is the intensity of FDI effects as people are more vulnerable, and the social welfare system is less present in developing countries.

Helpman, and others (Melitz, 2003; Helpman, Melitz and Yeaple, 2004; Helpman, Itskhoki and Redding, 2010) that only the most competitive firms and high-skilled people working in these companies benefit from FDI. Helpman, Itskhoki, and Redding predict the distributional effects of globalization on the individual level (2010): They argue that because the productivity of foreign companies is higher and manufacturing is considered to require technical know-how, the demand for the local workforce concentrates mainly on skilled workers that were previously employed at less-productive domestic companies and will move to international companies (see Helpman, Itskhoki and Redding, 2010; Helpman et al., 2017). The increasing labor demand will improve the bargaining power of high-skilled workers and lead to increased wages (see Te Velde, 2003; Te Velde and Morrissey, 2004; Pandya, 2010). On the other side, because domestic firms are under pressure from international companies, wages of low-skilled workers stagnate or will decline (see Osgood, 2016; Chen, Ge and Lai, 2011). Simultaneously, according to the firm sorting argument, domestic companies that cannot keep up with the same productivity levels of international competitors are not profitable enough and may need to shut down their businesses (crowding out) and lay off lower-skilled workers. In the end, this results in higher risks of wage pressure, unemployment and uncertainty (Helpman, Melitz and Yeaple, 2004; Melitz, 2003; Helpman, Itskhoki and Redding, 2010; Helpman, 2014) and manifests itself in a structural difference between higher and low-skilled workers as shown by empirical works (Feenstra and Hanson, 1997; Te Velde and Morrissey, 2004; Lipsey and Sjöholm, 2004; Goldberg and Pavcnik, 2007; Baccini et al., 2021; Pandya, 2010).

Given that most people in developing countries have not received many

years of education and vocational training, I argue that while the number of direct winners from FDI is limited, the distributional consequences will drive the insecurity of many individuals living close to the investment site. In the IPE literature, there has been an overwhelming agreement of empirical findings supporting the argument of skill and education divisions.[9] As Table 5.15 in the Appendix shows, this paper also finds that education is essential in explaining economic insecurities and the well-being of exposed individuals. Given the consistency of the results and the broad empirical agreement, it will not be at the core of this paper to test the skill hypothesis, according to which FDI projects affect the economic well-being of unskilled citizens.

FDI and Collective Well-Being: Geotropism

This study argues that FDI makes the majority of exposed individuals develop subjective feelings of insecurity. As this paper focuses on how FDI specifically creates those economic grievances, it is relevant to understand how individuals assess their economic well-being under changed circumstances. I argue that exposed individuals can be affected through three different channels: *Egotropic*, *sociotropic*, and *geotropic* evaluation.

There is a wide range of economic voting literature that postulates that individuals are primarily informed by personal economic circumstances - the so-called pocketbook or *egotropic* approach (see Fiorina, 1981; Key, 1966; Kinder and Kiewiet, 1981). Others argue that individuals will develop economic assess-

[9]For example, see Menéndez González, Owen and Walter (2023); Jensen, Quinn and Weymouth (2017); Autor, Dorn and Hanson (2013); Autor et al. (2020); Mansfield and Mutz (2009); Scheve and Slaughter (2004); Walter (2017); Palmtag, Rommel and Walter (2020); Rommel (2018); Walter (2010).

ments based on how the national economy develops - described under the term *sociotropic* evaluation (see Hansford and Gomez, 2015).[10] Sociotropism expects that individuals will base their economic evaluation not on their situation but on the nation's well-being to evaluate the government's performance. Empirically, the majority of studies have found that evaluations of the country's economy seem to correlate with citizen's voting decision (see also Mansfield and Mutz, 2009; Margalit, 2019; Kiewiet and Rivers, 1984; Lewis-Beck and Paldam, 2000). At the same time, recent studies employing Swedish income statistics and Californian credit data show that individual assessments are affected by their economic situation, which backs up the egotropic hypothesis (Healy, Persson and Snowberg, 2017; Healy and Lenz, 2017).

In an attempt to explain how FDI affects the political satisfaction of individuals, I argue that the insecurity from FDI projects does not only depend on the individual characteristics (egotropic) or national developments (sociotropic) but is also based on the peer group and immediate neighborhood, which inform the subjective assessments of individuals: something that is henceforth called geotropism.

Geotropic[11] evaluation happens at the local level and includes the immediate surrounding of the citizen (see Books and Prysby, 1999; Ansolabehere, Meredith and Snowberg, 2014; Johnston and Pattie, 2001; Broz, Frieden and Weymouth, 2021). According to Reeves and Gimpel - "no one experiences na-

[10]According to Kinder and Kiewiet, "(...) differences between the pocketbook and sociotropic characterizations of citizen politics should be regarded not as one of motivation, but as one of information" (Kinder and Kiewiet, 1981, p. 132).

[11]The concept of geotropism was first introduced by Reeves and Gimpel (2012). Other words for the concept of geotropism are "local sociotropism" (Alkon, 2017) or "mecro-economic voting" (Ansolabehere, Meredith and Snowberg, 2014).

tional conditions" (2012, p. 509). For those authors, it is thus more about the primary element that citizens connect to when assessing economic evaluations. These elements can be neighbors, co-workers, religious group members, the "identification with their local community" (see Alkon, 2017, p. 3), or "everyday experiences" (Reeves and Gimpel, 2012, p. 518) that form drivers of the economy's assessment. Geotropism happens in and to the local economy in everyday life and thus shapes the individual and the peer group to which individuals feel connected.

In the simplest case, geotropism can be understood as an information channel for an individual to assess national circumstances by taking the local community and observing what happens around oneself as a heuristic. It is thus not necessarily a conscious reflection of in-group opinions or adaption of group ideology but rather the nearest point of information: Bisgaard et al. (2016) for example claim that as national trends are hardly observable for the individual, people living nearby are informing an individual about their economy. Daily interaction thus forms an excellent opportunity to inform the security and dissatisfaction of individuals (Baybeck and McClurg, 2005; Bisgaard, Dinesen and Sønderskov, 2016).[12] Building on the literature by social psychologists, geotropism is thus closely connected to the concept of social identity, which can be understood as "the individual's knowledge that he belongs to certain social groups together with some emotional and value significance to him of the group membership" (Tajfel, 1974, p. 72). Ansolabehere, Meredith and Snowberg, for example, show that individuals report higher national rates of unemployment

[12]Reeves & Gimpel (2012) assume that "even when economic circumstances are the same in two locations, however, local perceptions may still differ due to the variation in a human milieu which produces distinctive patterns of socialization and information transmission" (p. 511).

when their social group has a higher degree of unemployment (2014).

While this broad term of "geotropism" comprises several angles of the local economy, it has proven to be an essential factor in shaping the individual's assessment (see Bartels, 2012; Fortunato, Swift and Williams, 2018; Ansolabehere, Meredith and Snowberg, 2014). Especially in developing countries, in which mobility and daily commuting are restricted, and life happens bound to specific places, geotropism could be an important factor as social interactions happen at the same places with the same people.

In their paper, Grossman and Helpman (2021) show that individuals and their policy preferences are not only affected by "their own material self-interests but also concerns for members of those groups in society with whom they identify" (p. 1). This follows Shayo's work on social identity, in which the author further postulates that individuals are primarily concerned about the well-being of their cohort (2009). Returning to how FDI affects individuals, I argue that investments affect neighborhoods and peer groups as much as they shape the personal economic evaluation: People who live close to an FDI project will also have friends and colleagues affected by the distributional consequences of FDI.

To conclude this section, I expect individuals to experience outcomes of FDI through the lenses of their social group and the degree of insecurity that this group feels. As with the skill level in the egotropic channel, groups that feel more vulnerable are likely to feel less secure from FDI influx and thus have greater grievance when exposed to FDI. If the group the individual identifies with is concerned due to FDI, the individual might feel more insecure. If geotropic evaluations exist, this paper would expect the following: Individuals in a group with a higher vulnerability feel even less secure and more frustrated when ex-

posed to FDI projects. This means that even those individuals that are relatively high-skilled and experience positive outcomes of FDI through their egotropic assessment might adapt to the level of insecurity predominant in their social group. As this process does not happen in the absence of the political system and contexts, the following section theorizes how the economic grievance of individuals develops into political dissatisfaction.

Translating Well-Being into Political Satisfaction

This paper argues that exposure of individuals to FDI projects leads to economic grievances that translate into decreased government satisfaction in developing countries. For this to be true, individuals need to understand the responsibilities of the government for their material situation (see Margalit, 2011). This section aims to clarify *if* and *when* individuals develop frustration as an outcome of FDI.

Let us begin with the question of *whether* individuals translate economic into political dissatisfaction: Based on a wide range of empirical studies applied in the economic voting and economic shock literature, I argue that individuals with less economic grievances are more supportive of the current government.[13]

[13]The idea that economic circumstances could shape people's political assessment is not new (see Campbell et al., 1960; Schlozman and Verba, 1979; Fiorina, 1981; Kinder and Kiewiet, 1981; Weatherford, 1983; Kiewiet and Rivers, 1984; Reeves and Gimpel, 2012; Margalit, 2019). Scholars like Key (1966) claimed that "past events, past performance, and past actions" (p. 61) or, to put it differently, the retrospective experience of individuals with their economy might drive people's voting decision (see Hansford and Gomez, 2015). While some works find evidence for incumbency effects from good economic conditions (see Becker, Fetzer and Novy, 2017; Jensen, Quinn and Weymouth, 2017; Healy and Lenz, 2017), Woolley and Quinn show that economic volatility reduces the vote share (2001). Moreover, the economic shock literature shows numerous examples of how trade shocks have polarized people's policy and party preference and affected electoral results (see Jensen, Quinn and Weymouth, 2017; Autor et al., 2020; Che et al., 2016; Malhotra and Margalit, 2010; Algan et al., 2017; Dancygier and Donnelly, 2014; Ahlquist, Copelovitch and Walter, 2020; Frieden, 2019; Foster and Frieden, 2017).

This argument follows what Broz et al. (2021) and Frieden (2019) state about the relevance of the economic decline of local communities and the effect on the polarization of populism: Those who suffer from economic consequences of FDI are expected to show higher frustrations with the governments. Fernández-Albertos and Kuo (2018) claim that economic shocks, such as the one provoked by FDI, could affect the relative perception of citizen's economic standing in society, and Margalit shows that economic backlashes diminish trust in political institutions and drive the support for more social policies (2019, see also Ballard-Rosa et al., 2021). I expect that the more severe the economic changes provoked by FDI projects are, the higher the chances of citizens connecting their economic situation with political grievance toward the government.

An alternative argument to this claim is that individuals need to be aware of the connection between political actors and the attraction of FDI in order to blame incumbents for negative consequences (see Lewis-Beck and Paldam, 2000). As Owen (2019) argues, leaders on the sub-national level are providing incentives to enhance foreign investments (e.g., see Baccini, Li and Mirkina, 2014; Jensen, Malesky and Walsh, 2015; Jensen et al., 2014; Li, 2006; Rodríguez-Pose and Arbix, 2001). Jensen et al. further state that local incumbents "pander" to their voters their success in attracting new projects for their location, which drives the incumbency bonus (2015; 2017). Moreover, governments have room for maneuver when it comes to how to handle and strive for FDI through trade agreements (e.g., see Betz, Pond and Yin, 2021; Büthe and Milner, 2008), establishing investor-friendly environments (see Danzman, 2020), or breaking with firms, which can result in open Investor-State Dispute Settlement cases (e.g., see Peinhardt and Wellhausen, 2016; Wellhausen, 2021,

2016; Hafner-Burton, Steinert-Threlkeld and Victor, 2016). Thus, I argue that voters who suffer from FDI projects are expected to be able to connect changes in their economic situation to the political decisions of incumbents that made the investment possible.

At this point, it is relevant to understand *when* individuals develop political dissatisfaction as an outcome of FDI. I expect that FDI creates a situation of inequality and insecurity among less-skilled people, which increases demands for compensation. According to the literature, those who are poorer and lose their economic status will demand greater redistribution of wealth and government support (see Roemer, 1999; Walter, 2010; Frieden, 2019; Ahlquist, Copelovitch and Walter, 2020; Margalit, 2011). Walter (2010) and Ahlquist et al. (2020) argue that exposed individuals that are losing from globalization will demand higher protection by the government and favor redistributive policies (see Alesina and La Ferrara, 2005). This fits the general argument by Frieden (2019), who states that citizens support those policies that serve their interests.

I argue that if governments cannot address the asymmetrical distribution of economic consequences induced by FDI, concerns and insecurities develop into dissatisfaction pointed at the government. Not addressing economic disparity and inequality will further increase the individuals' vulnerability, which manifests as structural distrust. Broz, Frieden, and Weymouth (2021) assume that governments can counter these tendencies that arise from globalization through better compensation of distributional effects (e.g., labor market institutions and protections) and empowering political institutions (e.g., electoral institutions). Following the same line of argument, Frieden (2019) argues that "hostility to globalization is largely due to failures of compensation, while distrust of polit-

ical institutions is the result of failures of representation" (p. 13). This paper builds on this statement and argues that individuals will translate economic insecurity into political dissatisfaction when governments either fail to *compensate* through re-distributional policies or increase the input legitimacy through the *representation* of all citizens in the political decision-making process.

I expect that given the limited availability of and budget for welfare measures at the local level, governments in developing countries struggle to provide enough re-distributional policies that would compensate for individual vulnerabilities. Thus, FDI will translate an inherent problem of limited welfare provision into an emergent problem as individuals who suffer from greater economic insecurity may become dissatisfied with the government's ability to provide redistribution policies and establish fair representation and protection to all citizens. How individuals experience FDI is thus not only connected by how their own (egotropic) or community (geotropic) situation changes but how the government can create a fair treatment of all citizens independent from their social status or ethnic group. The more people feel disenfranchised by the government, the more vulnerable they might experience economic consequences if FDI and the higher the dissatisfaction with the government. Being financially restricted when it comes to re-distributional policies, it is an active choice of governments to increase accountability and input legitimacy, which might even strengthen the trust of individuals in their leader and improve the satisfaction stemming from foreign investments. The following section sheds light on how governments treat their citizens and under which conditions this creates social tensions as an outcome of FDI.

Regional and Ethnic Favoritism

In the previous section, it has been argued that while some people gain from FDI, the majority of individuals may feel insecure and develop political dissatisfaction with rising FDI if governments do not provide re-distributional policies or increase the representation of people in political processes. If governments do not take action against economic consequences, insecure individuals are expected to feel "left alone" and "left behind" with their problems. Thus, rising tensions among individuals are connected with governments' inability or unwillingness to increase the individuals' protection in previous years. Again, even individuals who are potential investment winners might also develop political dissatisfaction due to the geotropic connection to their local community that does not have "political connections" (Betz and Pond, 2022) with the government. What follows is that exposed individuals living in regions that have not experienced financial and political support from governments might feel more insecure or less protected and show lower satisfaction with the government.

This section will explain how and under which circumstances governments decide to support only specific regions or groups and create asymmetrical levels of protection among their citizens. The systemic discrimination or preference of parts of the society that this paper argues for is subsumed under the term "favoritism".

Favoritism generally describes the circumstance in which the government, in most African countries headed by the president in a semi- or full-presidential system, favors a specific group based on socioeconomic, individual, or group characteristics. Individuals that belong to a preferred group are meant to receive

a different treatment than others (see Burgess et al., 2015). This paper focuses on two prominent ways of favoritism: First, based on the fact that individuals live in the region where the president is born, hereafter called "regional favoritism". Second, ethnic groups and whether individuals have the same or co-ethnic group as the president, hereafter called "ethnic favoritism".

Why Governments Favor Specific Groups According to the literature, the attraction and administration of FDI is a politicized issue driving the policy-making of governments (see previous Chapter 2, Owen, 2019; Jensen et al., 2014). On multiple levels, governments and politicians aim to use international investments for their agenda, for example, to boost their chances of re-election or increase corporate tax income. Representatives are held accountable for their actions through elections. Especially in developing countries, governments highly depend on access to capital and will balance out public demands for redistribution and investor interests for lower taxes and better property rights. To get re-elected, national leaders will either reduce redistributional consequences from FDI through investor regulations or redistribute wealth ex-post (see Pond, 2018).

The existing literature on favoritism argues that due to scarce resources, governments in developing countries have limited capacities to counter the distributional consequences and individual insecurities.[14] Thus, they must decide if they want to treat regions equally or benefit some places that receive more significant re-distributional support.

To increase their chances of re-election or maintaining power, governments can decide to provide financial and political support asymmetrically to a

[14] Albeit a generally low level of public spending, there is a variation of public spending among African countries (see UNDP, 2019*a*,*b*).

specific group of citizens. The ability of governments to implement asymmetrical policies is thus an immediate function of accountability and legitimacy processes within a country. The quality and independence of political institutions discriminate an active choice of the government: Depending on how accountable governments need to be due to higher institutional quality, clientelism, and favoritism become harder. The degree of favoritism in a country is, therefore, always closely connected to the degree of democratic institutions.

The question is, who will benefit from those re-distributional policies if governments decide to benefit some places over others? According to the literature on favoritism, politicians base their decision on regional (Hodler and Raschky, 2014; Bommer, Dreher and Perez-Alvarez, 2018) or ethnic considerations (Franck and Rainer, 2012) and there is much anecdotal evidence for such favoritism (see La Porta et al., 1999; Easterly and Levine, 1997; Kasara, 2007; Franck and Rainer, 2012; De Luca et al., 2018).

This evidence spans from Kenya, where former leader Jomo Kenyatta has benefited his birth region through the avoidance of tariffs on coffee crops, to Cote d'Ivoire, where President Houphouet Boigny was doing the same for cocoa products (Bates and Block, 2009; Bates, 1989). The previous Ivorian president made his hometown, Yamoussoukro, the capital city in 1983. Also, the Zairean President Mobutu Sese-Seko turned his birthplace, Gbadolite, into a prosperous city during his presidency (see Soumahoro, 2015). Those examples show how governments have actively favored one region over others.[15]

[15]La Porta et al. 1999 assume that "in ethnically heterogeneous societies, it has been common for the groups that come to power to fashion government policies that expropriate (or kill) the ethnic losers (...), and limit the production of public goods to prevent those outside the ruling group from also benefiting and getting stronger" (p. 231).

As a meta-analysis of over 150 studies on distributional politics by Golden and Min (2013) shows, many empirical studies find evidence for favoritism in specific policy fields and specific countries. The study by Earle and Gehlbach, for example, indicates that the productivity of firms after the change in power after Ukraine´s 2004 Orange Revolution has changed (2015): Companies in regions that have voted in favor of President Yushchenko were 15% more productive three years after the revolution than firms in regions that did not support the new president. This supports the argument about the importance of regime support for individuals and the local economy.

As the literature on favoritism indicates, ethnic and regional favoritism is an important element in understanding the economic and political development of the African continent. De Luca et al. (2018) therefore call it "the axiom of politics" (p. 1).[16]

While African countries are often thought of as examples of favoritism, there is only a limited amount of empirical studies that focus on favoritism across African countries, leading to mixed findings (see Kaplan, 2021; Franck and Rainer, 2012; Kramon and Posner, 2016). In a study of 140 multi-ethnic countries between 1992 and 2013, De Luca et al. (2018) find that the development measured in nighttime light data is 7 to 10 percent higher in regions that share an ethnic connection to the leader. Moreover, they see no indication that ethnic favoritism is related to the quality of political institutions.

The problem with the existing literature is that most studies focus on how governments provide one public good, such as how favoritism affects education

[16]There is further anecdotal evidence also outside the African continent: For example, in Bolivia, Pakistan, Ukraine (see De Luca et al., 2018).

in regions. As Kramon and Posner point out, the results of the studies often only apply to this specific good or policy (see Kramon and Posner, 2016). The authors emphasize the vulnerability that many articles on public good provision and favoritism have: "namely, that the pattern of favoritism that has been identified with respect to the outcome in question may be counterbalanced by a quite different, even opposite, pattern of favoritism with respect to other outcomes that are not being measured" (ibid., p. 462).

While other works also detect a positive influence of favoritism on taxation (Bates and Block, 2009), road building (Burgess et al., 2015), educational and welfare levels (Kramon and Posner, 2016), and infant mortality (Franck and Rainer, 2012), Kasara finds that co-ethnic farmers are charged the highest taxes by the government (2007). Thus, the author claims that politicians do not need to pay off their ethnic group as they would already be in favor of the leader - an argument that is also called "psychic benefit" (see Franck and Rainer, 2012, p. 296).

Other authors argue for the "quid-pro-quo" hypothesis postulated by Franck and Rainer (2012, p. 313), which states that it is cheaper and less risky for office seekers to convince and benefit their ethnic group and also people that live in the birth region of the leader of re-election. Moreover, the costs of marginalizing smaller, already marginalized groups are lower and can be advertised to the leader's peer group. This fits what Bates has written in his work on ethnic competition in Africa: "Ethnic groups persist largely because of their capacity to (...) satisfy the demands of their members for the components of modernity. Insofar as they provide these benefits to their members, they can gain their support and achieve their loyalty" (1974, p. 471).

A third explanation for why the president could provide goods to one against the other group is "ethnic altruism" (see Franck and Rainer, 2012, p. 296). Following this logic, presidents feel connected to their group and want to benefit them accordingly. It builds on Hegel's "particular" altruism that symbolizes "the willingness to sacrifice material payoffs in order to enhance group status" (Shayo, 2009, p. 148).

While other works on autocratic survival also share alternative theories that expect governments to provide welfare policies, especially to those people that are excluded from securing a stable majority for their political parties (see Rommel, 2018), the empirical studies on favoritism speak for any of the mechanisms mentioned above.

To conclude the fourth argument of this paper, I expect governments that only have limited possibilities to compensate citizens to make an active decision of whom to provide financial and political support. Governments have limited room to discriminate against regions in countries with high accountability and independent political institutions. However, in places with limited accountability and weak institutions, governments might make an active decision on the support of some but not all people in their country. Suppose governments decide to exclude specific groups more than others due to ethnic or other political relations or concentrate support only on particular regions instead of equally distributing wealth to all places in a country. In that case, the feeling of under-representation and insecurity will increase.

Instead of focusing on a single policy or public good, the paper examines individuals' economic and political grievances. Thus, any previous government action - beneficiary or discriminatory - has affected the feeling of insecurity and

level of protection. Suppose individuals have been treated differently in the past. In that case, favoritism presumably explains variation in the degree of individual satisfaction: People who do not live in favored regions or are part of an ethnic group that is discriminated against or underrepresented will even feel more insecure and less satisfied with the government once exposed to FDI. If favoritism exists, co-ethnics will - in the belief of presidential support - feel more protected and less concerned. People that do not have political connections with the president are likely to feel unprotected and fear the lack of support through redistribution and representation. This means that if favoritism affects the individual reporting of satisfaction, one would expect individuals in regions more favored to have lower dissatisfaction with the government once exposed to FDI.

The paper hereby focuses on two kinds of favoritism: The degree of regional favoritism as a result of the birthplace of the political leaders and the degree of ethnic favoritism as a result of ethnic discrimination and marginalization of respective groups. While it can also be argued that there is a theoretical overlap between concepts of ethnic and regional favoritism, De Luca et al., in a cross-country analysis (2018) as well as Ahlerup and Isaksson by using the third round of the Afrobarometer survey data show that these are two, in general, unrelated concepts in a cross-country analysis (2015).

For regional favoritism, this paper argues that national governments will provide social protection measures that absorb economic shocks, especially in those regions where the president is born. Leaders will aim to focus their support on their birth region to support those voters who are expected to be their biggest supporters. In what follows, the negative effect of FDI on the individual's

well-being and political satisfaction are highest in those regions that are not the leader's birthplace.

H1: The negative effect of FDI on the political satisfaction of exposed individuals is bigger among those located in politically unconnected regions.

Focusing on the ethnic favoritism argument, this paper argues that governments will apply redistributive policies to regions with the highest share of ethnically aligned individuals. Moreover, individuals in discriminated regions are excluded from the political process and feel less represented. What follows is that the negative effect of FDI on an individual's well-being and political satisfaction is likely to be highest in those ethically discriminated regions.

H2: The negative effect of FDI on the political satisfaction of exposed individuals is bigger among those that identify with an excluded ethnic group.

5.3 Empirical Strategy

To test how FDI affects individual well-being and satisfaction, I match geo-referenced data on FDI projects with survey data from 36 African countries[17] as well as several other control variables and compare individuals that are exposed by FDI projects with those that are not or will be. The application of geo-referenced data makes it possible to measure effects at the local level while also creating limitations as the paper draws assumptions about an individual based on information on the region or location they live in.

Measuring Economic Well-Being and Satisfaction

The main dependent variables are individual responses from citizens about their political satisfaction measures. The primary source for those variables is the Afrobarometer (2019), which covers over 217,000 individual responses from citizens in 36 countries between 2006 and 2018. Several IPE studies have used the data (e.g., see Brazys and Kotsadam, 2020; Palmtag, 2020) to understand the effects of FDI on the individual. The cross-sectional data is gathered and published in several rounds, and individuals do not appear multiple times. Given inconsistencies along the questionnaires of several rounds, this paper uses rounds 2 to 7. The individuals are clustered in 21806 enumeration areas. Enumeration areas can be understood as the geo-referenced point of up to eight interview respondents (see Afrobarometer, 2019, for more information). Figure 5.3 shows all

[17] Algeria, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Egypt, Gabon, Ghana, Guinea, Ivory Coast, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, São Tomé and Príncipe, Senegal, Sierra Leone, South Africa, Sudan, Swaziland, Tanzania, Togo, Tunisia, Uganda, Zambia, Zimbabwe.

enumeration areas participants by a wave in African countries.

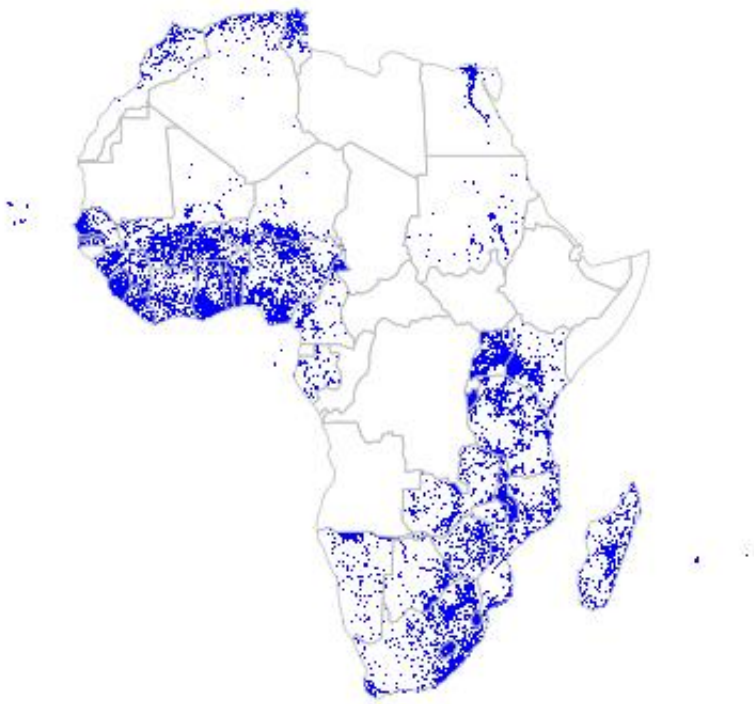

Figure 5.3: Map of enumeration areas included in the Afrobarometer.

There are several ways in which FDI can turn into political grievance or satisfaction: Taking the classification by Norris (1999) about democratic satisfaction, this paper focuses on the performance of and trust in the institutions and political actors (see also Linde and Ekman, 2003). Trust in political institutions, approval rates of governments, and satisfaction with political actors are adequate outcomes that reflect political grievances as a product of FDI.

This paper uses three variables to measure political satisfaction: trust, performance, and handling of the economy. For the trust variable, people have been asked, "how much do you trust each of the following, or haven't you heard enough about them to say". This paper uses the trust question for the "president". Responses that were "not at all" or "just a little" were coded as 0, and those that replied with "somewhat" or "a lot" were coded as 1. Second, people have been asked how high they evaluate the performance "do you approve or disapprove of how the following people have performed their jobs over the past twelve months, or haven't you heard enough about them to say" for the president. People who chose "strongly disapprove" or "disapprove" were coded as 0, and "approve" and "strongly approve" were coded as 1. The last category is a numeric variable that combines questions about the handling of the economy. Respondents needed to answer the following question: "Now let us speak about the present government of this country. How well or badly would you say the current government is handling the following matters, or haven't you heard enough to say:" for "managing the economy," "improving the living standards of the poor," "creating jobs," "keeping prices down," and "narrowing gaps between rich and poor" on a scale from "very badly" (1), "fairly badly" (2), "fairly well" (3), to "very well" (4). To combine those questions into one proxy for the gen-

eral opinion of citizens with the government's handling of economic questions, this paper takes the numerical average of those sub-categories, resulting in an indicator from 1 to 4.[18]

In addition, this paper uses several control variables from the Afrobarometer database to control for individual characteristics that could bias the empirical relationship between FDI and political satisfaction: education level, age, gender, media consumption, job status, if people live in urban or rural regions, as well as the question of whether people have experienced unfair treatment based on their ethnicity.

Independent Variables

To assess the effect of FDI on individuals, it is necessary to have geo-referenced information about any FDI project in previous years. Fortunately, the Financial Times offers the "fDi Markets" database (The Financial Times, 2018). This dataset contains over 200,000 individual FDI projects between 2003 and 2018, their volume, estimated job creation, and the specific time and location. Through its geo-referenced nature, it can be matched with the individual information of survey participants and offers a suitable tool to understand the local effects of FDI (see Owen, 2019; Brazys and Kotsadam, 2020; Palmtag, 2020).

Nonetheless, this data also comes with limitations. For example, it does not capture mergers and acquisitions but only greenfield investments (see Jung, Owen and Shim, 2021). Moreover, some studies claim an over-representation

[18] As all sub-indices are about the government´s overall management of the economy and are measured on the same scale, I believe that taking the numerical average is the appropriate thing to do.

of the investment amount (Brazys and Kotsadam, 2020). In general, the information of FDI data is based on news articles, firm announcements, and not implemented investments, which is a challenge to the empirical design. Finally, the database only collects data from 2003, ignoring projects established before. Despite its limitations, the fDi Markets database is the best local FDI database and has been shown to offer great opportunities for innovative research designs (see Owen, 2019; Brazys and Kotsadam, 2020; Palmtag, 2020). To account for the irregularities and overestimation in reporting FDI flows, this paper will use a dummy variable that indicates if and when an FDI project has been announced. As a robustness check, this paper will also employ the amount of announced FDI in millions of USD.

This paper uses several other geo-referenced datasets as secondary independent variables to test the favoritism hypotheses and control for a region's economic development and population. To assess if people live in places that are preferred or disadvantaged by the government, this paper aims to identify which individuals are connected to a region or ethnic group that is known to be discriminated against or preferred. By doing so, the paper uses two sources from data projects that have done an exemplary job in geo-coding and defining how governments in power have treated ethnic groups and regions in their country in the past.

For the identification of ethnic groups and the degree of discrimination, this paper uses the GeoEPR dataset (Wucherpfennig et al., 2011), which is a geo-coded version of the Ethnic Power Relations dataset and maps all ethnic groups over time (Vogt et al., 2015). This dataset allows us to understand which ethnic group has been included or excluded from power in the past and at which places

in a country those groups are situated. This paper uses this information to generate two variables: The "Geo Status" variable identifies if a survey participant lives in a region in which the majority is part of an ethnic group that serves as a junior or senior partner of the current government (coded as 1) or whether they are living in an area that is mostly populated by a discriminated ethnic group (coded as 0). Neutral or irrelevant groups are excluded from this variable and marked as NA. The caveat of this measure is the dichotomy: Only because the majority in a region is connected to the government does not mean that there are no ethnic groups that are excluded. To account for the fact that ethnic groups are not a dichotomized phenomenon, the second variable, "GEO Size Discriminated," presents the share of ethnically discriminated groups at the region of each survey participant. The relative percentage of discriminated ethnic groups in a region forms the relevant information.

The paper also makes use of the Political Leaders' Affiliation Database (PLAD), which provides information on the birthplace and ethnicity of influential leaders (Dreher, 2020). As both of those datasets are linked through the GeoEPR identifier, I created a dummy variable that indicates if individuals are living in a region in which the current leader was born ("Birthplace") and if the current leader belongs to the same ethnic group as the majority living in this respective region ("Ethnic Group Leader")

Assuming that individuals consider local economic conditions when perceiving their well-being, it is necessary to account for the economic development of a location. Unfortunately, there is no reliable GDP data on sub-national development in non-OECD countries. Thus, this paper uses nighttime light data as a proxy for local development (National Geophysical Data Center, 2012*b*, 2015).

As the standards for creating those nighttime light data have changed over time, this paper uses the combined harmonized nighttime light dataset presented by Li et al. (2020). While nighttime light data has several limitations such as saturation, over-glow, or blooming (see Mellander et al., 2015; Henderson, Storeygard and Weil, 2011; Chen and Nordhaus, 2011), it is the most objective measure for local development over time.[19]

Finally, it is also relevant if individuals live in sparsely inhabited rural spaces or in a highly populated city. For example, labor market effects from one FDI project are different in smaller places with fewer workers than in big cities. Thus, this paper uses the History Database of the Global Environment (HYDE, Klein Goldewijk et al., 2017), which provides geo-referenced information about the population and allows for control of migration and population developments. The variables are summarized in the Appendix (Table 5.6).

Estimation Strategy

To detect the influence of FDI projects on the satisfaction of individuals, this paper geo-matches individuals from the Afrobarometer with information about FDI and other controls. In the first step, I detect which individual is exposed to an FDI project.[20] To do so, I draw a buffer zone around every individual enumeration area with a radius of 15 kilometers clipped to country borders. These buffer zones represent the maximum commuting distance an individual is

[19] See previous Chapters or works by Mellander et al. (2015); Kuhn and Weidmann (2015); Cederman, Weidmann and Bormann (2015); Weidmann and Schutte (2017); Chen and Nordhaus (2011); Proville, Zavala-Araiza and Wagner (2017); Henderson, Storeygard and Weil (2011); Sutton, Elvidge and Ghosh (2007); Doll, Muller and Morley (2006); Ebener et al. (2005).

[20] Geo-Matching describes the process of matching individuals to FDI and other control data based on their living location.

expected to travel to work every day.[21] If FDI projects are within these zones, individuals are counted as treated after the project is announced (active) and to be treated if the project will be in the future (future). A total of 5796 FDI projects between 2003-2018 have been invested in the enumeration areas. In total, 5450 of 21806 enumeration areas have been treated, equivalent to 25%. Figure 5.4 shows such buffers (2513) for Nigeria and flags those enumeration areas that are treated in red (598). Of the complete cases used to estimate the models, there are 15340 unique enumeration areas with 5.88 interviewees per enumeration area, and 3444 of those have been treated, equivalent to 22.5%.

[21]It is impossible to decide the actual commuting distance of individuals. Given the findings in Chapter 3, I believe 15 kilometers to be an appropriate radius for people to experience the direct and indirect effects of FDI. The paper also runs a robustness check with 20 km in the Appendix.

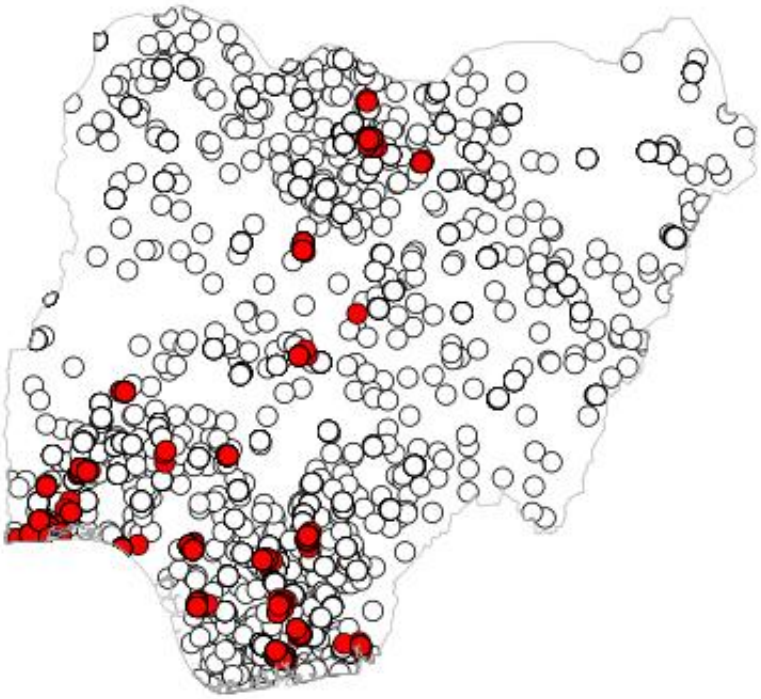

Figure 5.4: Map of 15 km radii around enumeration areas in Nigeria. Enumeration areas that are exposed to FDI projects are highlighted in red.

Second, I add data on economic development, population, and favoritism by using the geo-location of the survey participants.[22] If individuals are living in places that are ethnically discriminated ("Geo Status," "GEO Size Discriminated") measured through the GeoEPR dataset and if they are ethnically aligned to the leader or living in the birthplace of the leader using the PLAD database ("Ethnic Group Leader," "Birthplace").

The limitation of this geo-matching approach is that the actual ethnic group of each individual is unknown. Instead, it is assumed that individuals living in places connected to ethnic groups or are part of a preferred region have a high probability of being part of this group or are affected by the group through geotropic assessments of well-being and frustration. Furthermore, it is unclear if individuals benefited or lost directly or indirectly because of FDI. Instead, geo-matching is a spatial approximation that can lead to an ecological inference problem and cause a misinterpretation of the effects. While there is not much that this paper can do about it, the approximation through geo-referenced datasets seems to be the most appropriate measure of individual effects if the goal is to explain the local effects of FDI on a large scale.

In regards to the estimation model, the paper follows two strategies. At first, a simple logistic regression with regional and year-fixed effects and clustered standard errors on the enumeration area is run. With this, the dichotomous FDI variable creates a quasi-difference-in-differences design comparing treated with untreated individuals. The hypotheses are tested through the inclu-

[22] I calculate the average nighttime emission and population in the 15 km buffer as it is relevant to what happens in the surrounding of the individual. For the matching with the information on favoritism, this paper matches the exact location of the enumeration area as the buffer could lead to inaccuracy.

sion of interaction terms between FDI and the main independent variables: the ethnic discrimination status ("Geo Status"), the share of discrimination ("GEO Size Discriminated"), the leader's birthplace ("Birthplace"), and the leader ethnic dummy ("Ethnic Group Leader").

There are many reasons to be concerned about this method, as there is a high endogeneity behind investors' decisions. Thus, some places are more likely to be treated (again) than others. This is problematic as individuals in a systematically preferred region cannot simply be compared to untreated individuals as the chance for them to be treated is smaller. Thus, this paper applies the quasi-causal geographic difference-in-differences estimator by Brazys and Kotsadam 2020 that compares those individuals that are exposed to FDI (active) with those that will be exposed to FDI (future) (Knutsen et al., 2017; Isaksson and Kotsadam, 2018*a*,*b*; Palmtag, 2020):

$$Y_{ist} = \alpha + \beta_1(active)_{i,t} + \beta_2(future)_{i,t} + \theta_t + \sigma_s + \epsilon_{ist} \tag{5.1}$$

The design is based on the difference between the coefficient for an active and future project ($\beta_1 - \beta_2$). In other words, this article compares individuals that are already exposed with those that will be exposed to an FDI site in the future. The restriction of this design is that over time, the pool of treated units is limited to 1 as - at some point - all future units will be active in 2018. Thus, this paper also runs the above-mentioned cross-sectional difference-in-differences model without differentiating active and future units. As the trust and performance rating variables are ordinal, I also ran an ordered logistic regression in the robustness section. Finally, as the theory section has stated favoritism to be inher-

ently connected with the degree of democratization, the paper also runs a split data regression comparing autocratic versus democratic countries based on data from the V-Dem project (Coppedge et al., 2020; Pemstein et al., 2020, see also Chapter 3).

5.4 Results

Does FDI affect political dissatisfaction? My findings indicate that, in general, foreign direct investment has negative effects on the survey participants' reported political satisfaction. As predicted, ethnic and regional favoritism influences the relationship and drives satisfaction with the national government.

Table 5.1 presents the simple difference-in-differences regression for the effect of FDI on the trust and the performance rating of the president and the evaluation of how the government is handling the economy. The row "Active - Future Significant" represents the information of the second estimation method that compares only active (treated) with future (to be treated) individuals. The row indicates if the main effect of FDI is significant or not, also with the more rigid estimator. The models include region and year-fixed effects clustered around the enumeration area. The coefficients in Table 5.1 indicate that individuals exposed to FDI show lower trust and performance ratings and negatively evaluate the handling of the economy by the government. While the general estimator is significant for two of the three cases, the active versus future estimator is not significant.[23]

[23]The linear hypothesis test of the difference between active and future projects against 0 is not always significant.

Table 5.1: Regression table: FDI and political satisfaction

	Dependent variable:		
	Trust President	Performance President	Handling Economy
	(1)	(2)	(3)
FDI Treatment	-0.010^{*}	-0.010	-0.024^{**}
	(0.006)	(0.006)	(0.010)
Age	0.002^{***}	0.001^{***}	0.0002
	(0.0001)	(0.0001)	(0.0002)
Female	-0.004	0.007^{**}	0.001
	(0.003)	(0.003)	(0.004)
Rural	0.034^{***}	0.007	0.035^{***}
	(0.005)	(0.005)	(0.008)
Media Consumption	-0.001	0.001	0.041^{***}
	(0.002)	(0.002)	(0.003)
Treated Unfair Ethnically	-0.135^{***}	-0.137^{***}	-0.166^{***}
	(0.004)	(0.004)	(0.006)
Employed	0.014^{***}	0.013^{***}	0.023^{***}
	(0.003)	(0.003)	(0.004)
Population Mean 15KM	0.00000004	0.0000001^{**}	0.0000001
	(0.00000004)	(0.00000005)	(0.00000007)
Lights Mean 15KM	-0.001	-0.002^{***}	-0.002^{**}
	(0.001)	(0.001)	(0.001)
Education Level	-0.009^{***}	-0.006^{***}	0.0004
	(0.001)	(0.001)	(0.002)
Active - Future Significant	NO	NO	NO
Observations	94 015	92 270	95 667
R^2	0.136	0.133	0.119
Adjusted R^2	0.130	0.127	0.113

Note: *p<0.1; **p<0.05; ***p<0.01

Regression table: FDI and political satisfaction. Models include controls, regional and year-fixed effects, and clustered standard errors around the enumeration area.

As argued above, I believe that ethnic and regional favoritism can play an essential role in explaining the political satisfaction of people. As the first possible element of favoritism, this paper analyzes the effect of the birthplace of the current president on exposed individuals. In general, as expected, there is a positive effect of the birthplace on the political variables (see Table 5.2 and marginal effects Figure 5.5). However, looking at the interaction term with FDI, the birthplace variable has no significant effect. Only the performance rating of the president shows significant positive interactions for the difference between active and future FDI projects at the 95% confidence interval, which is presented in the “Interaction Active - Future Significant” row.

Table 5.2: Regression table: FDI and political satisfaction (regional favoritism)

	Dependent variable:		
	Trust President	Performance President	Handling Economy
	(1)	(2)	(3)
FDI Treatment	−0.010	−0.010*	−0.026***
	(0.006)	(0.006)	(0.010)
Birthplace	0.060***	0.063***	0.120***
	(0.012)	(0.012)	(0.022)
I(FDI:Birthplace)	−0.003	0.008	0.013
	(0.013)	(0.014)	(0.024)
Active - Future Significant	NO	NO	NO
Interaction Active - Future Significant	NO	YES	NO
Observations	94 015	92 270	95 667
R^2	0.136	0.133	0.120
Adjusted R^2	0.130	0.127	0.114
Note:			*p<0.1; **p<0.05; ***p<0.01

Regression table: FDI and political satisfaction. Models include controls, regional and year-fixed effects, and clustered standard errors around the enumeration area. Adding an interaction term for the birth region of the current President.

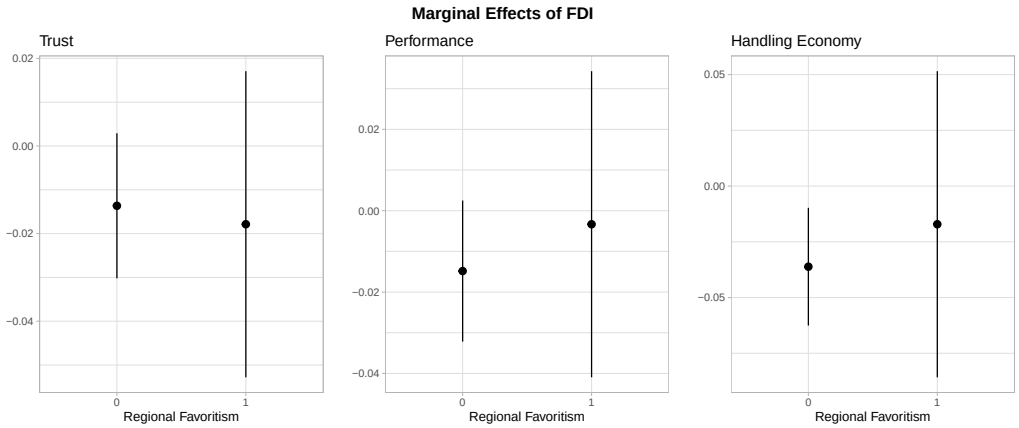

Figure 5.5: Marginal effects plot of FDI on political satisfaction interacting with regional favoritism.

Table 5.3: Regression table: FDI and political satisfaction (geo status).

	Dependent variable:		
	Trust President	Performance President	Handling Economy
	(1)	(2)	(3)
FDI Treatment	-0.080^{***}	-0.097^{***}	-0.129^{*}
	(0.029)	(0.036)	(0.072)
Geo Status	0.297^{***}	0.514^{***}	0.231^{***}
	(0.046)	(0.062)	(0.063)
I(FDI:Geo Status)	0.066^{**}	0.087^{**}	0.137^{*}
	(0.030)	(0.036)	(0.072)
Active - Future Significant	NO	NO	NO
Interaction Active - Future Significant	YES	NO	NO
Observations	40 357	39 883	41 207
R^2	0.143	0.136	0.129
Adjusted R^2	0.138	0.131	0.124

Note: *p<0.1; **p<0.05; ***p<0.01

Regression Table: FDI and political satisfaction. Models include controls, regional and year-fixed effects, and clustered standard errors around the enumeration area. Adding an interaction term for the variable if respondents live in regions that are predominately discriminated against or included (geo status).

Focusing on ethnic favoritism, this paper hypothesizes that exposed people that live in regions predominately inhabited by discriminated groups will have more negative satisfaction values. As Table 5.3 and the marginal effects plot (Figure 5.6) indicate, there is a positive effect on people that live in regions that are dominated by included groups. The interaction terms with FDI projects are positive and significant for the main model. The trust variable's difference between active and future projects is positively significant. This means that individuals living in preferred places have a more positive satisfaction with the government once exposed to FDI than regions that preferred ethnic groups do not predominantly inhabit.

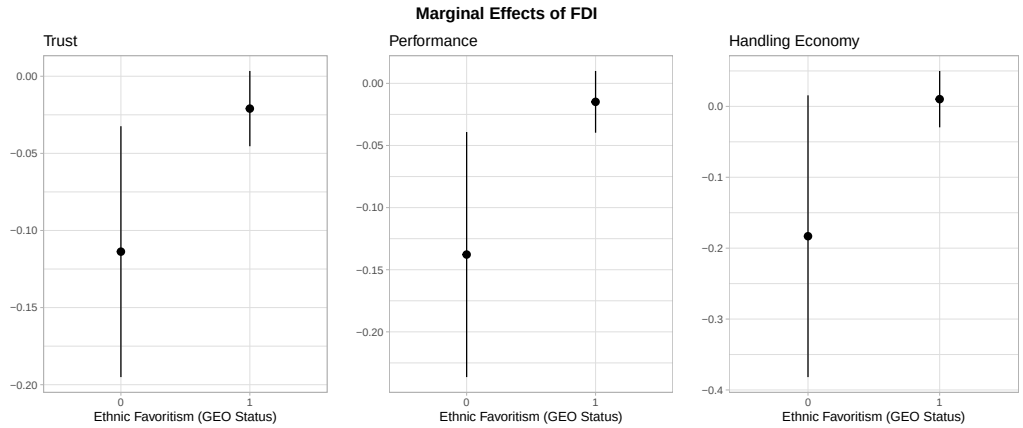

Figure 5.6: Marginal effects plot of FDI on political satisfaction interacting with ethnic favoritism (geo status).

Turning to the second ethnic favoritism indicator, which represents the population share of discriminated groups in a respective region, Table 5.4 and the marginal effects plot (Figure 5.7) indicate that there is a substantial and significant negative effect in general as well as for the interaction effects for both model specifications. The higher the share of discriminated groups in a region, the stronger the negative effect of FDI on the satisfaction of exposed individuals.

Table 5.4: Regression table: FDI and political satisfaction (geo size discriminated)

	Dependent variable:		
	Trust President	Performance President	Handling Economy
	(1)	(2)	(3)
FDI Treatment	-0.010^{*}	-0.010	-0.023^{**}
	(0.006)	(0.006)	(0.010)
Geo Size Discrimination	-2.836^{***}	-4.632^{***}	-1.979^{***}
	(0.409)	(0.547)	(0.603)
I(FDI:Geo Size Discrimination)	-0.751^{*}	-1.007^{**}	-1.431^{*}
	(0.387)	(0.485)	(0.776)
Active - Future Significant	NO	NO	NO
Interaction Active - Future Significant	YES	YES	YES
Observations	94 015	92 270	95 667
R^2	0.136	0.134	0.119
Adjusted R^2	0.130	0.128	0.113
Note:			*p<0.1; **p<0.05; ***p<0.01

Regression Table: FDI and political satisfaction. Models include controls, regional and year-fixed effects, and clustered standard errors around the enumeration area. Adding an interaction term for the share of discriminated ethnic groups in the individual's region.

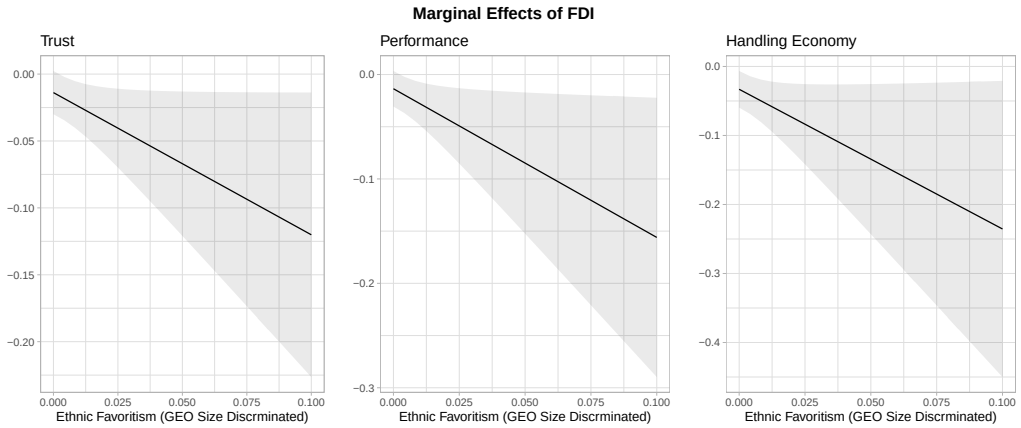

Figure 5.7: Marginal effects plot of FDI on political satisfaction interacting with ethnic favoritism (geo size discriminated).

As the last ethnic favoritism variable, this paper tests whether it is relevant if individuals live in a region that predominantly shares the same ethnic group as the leader. Table 5.5 and the marginal effects plot (Figure 5.8) demonstrate that there is a positive effect of this variable on the political satisfaction variables. Looking at the interaction term, one can observe a significant positive interaction with the trust and performance rating of the president but not for the evaluation of how governments handle their economy. The active versus future indicator, which represents the more rigid estimator, is only significant for the performance rating.

Table 5.5: Regression table: FDI and political satisfaction (ethnic group leader)

	Dependent variable:		
	Trust President	Performance President	Handling Economy
	(1)	(2)	(3)
FDI Treatment	−0.012**	−0.012*	−0.027***
	(0.006)	(0.006)	(0.009)
Ethnic Group Leader	0.141***	0.127***	0.182***
	(0.017)	(0.018)	(0.039)
I(FDI:Ethnic Group Leader)	0.044**	0.065***	0.080
	(0.021)	(0.022)	(0.052)
Active - Future Significant	NO	NO	NO
Interaction Active - Future Significant	NO	YES	NO
Observations	94 015	92 270	95 667
R^2	0.137	0.134	0.120
Adjusted R^2	0.131	0.128	0.114

Note: *p<0.1; **p<0.05; ***p<0.01

Regression table: FDI and political satisfaction. Models include controls, regional and year-fixed effects, and clustered standard errors around the enumeration area. Adding an interaction term for the variable if respondents live in regions where the predominant group has the same ethnic group as the national leader.

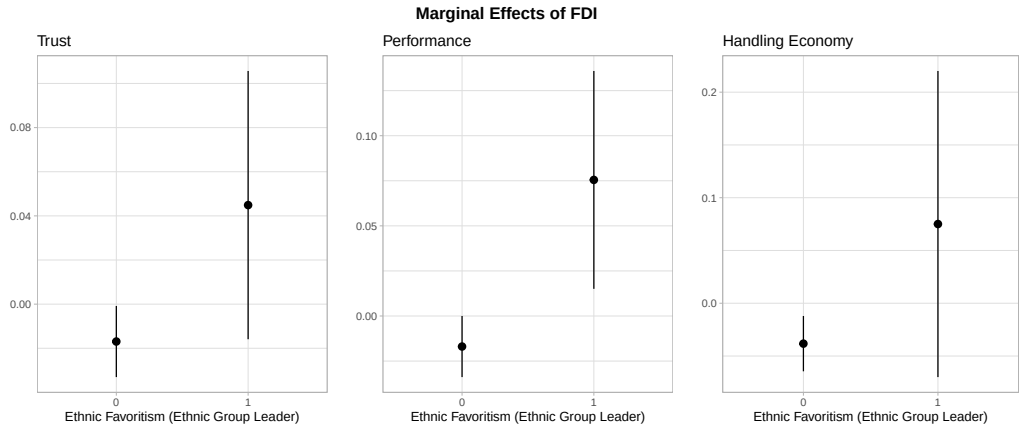

Figure 5.8: Marginal effects plot of FDI on political satisfaction interacting with ethnic favoritism (ethnic group leader).

5.5 Discussion

To summarize the results, FDI negatively affects an individual's political grievance. Especially when adding ethnic but not regional favoritism variables, it becomes observable that the effect of exposure on satisfaction is larger for individuals connected to the leader through their group membership or the region they live in.

As shown in the Appendix, several robustness checks have been run to confirm the general effects: Instead of a dummy variable indicating whether or not a location has been treated, the paper also takes the results for the estimated announced capital in a million USD. Second, I have altered the buffer zone of the radii around any FDI location to 20 kilometers. Furthermore, an ordered logit regression has been run to account for the ordinal satisfaction variables (trust and performance rating). Finally, a split regression comparing democratic

versus autocratic countries accounts for the relevance of institutional quality.

When using the announced FDI in a million USD instead of the dummy variable, the results for the main effect of FDI on satisfaction are mostly significant (see Appendix Tables 5.7, 5.8, 5.9, 5.10). The same patterns are observable when adding the regional favoritism variable (see Appendix Tables 5.7). The same holds for the ethnic favoritism models: The results are similar to those of the FDI dummy variable and show the robustness of the findings (see Appendix Tables 5.8, 5.9, 5.10). This means that both the treatment dummy and the amount of FDI drive the satisfaction of individuals.

As a second robustness check, I extend the buffer radius around an individual to 20 kilometers to account for the string assumption about the commuting distance of individuals. The results presented in the Appendix show similar coefficients for most of the variables (see Appendix Tables 5.11 to 5.14), which speaks for the robustness of findings and justifies the decision to take 15 km as a standard buffer zone.

As another robustness check, I run ordered logistic regressions. They show a significant negative effect of FDI on both dependent variables (see Figures 5.9, 5.10, 5.11, 5.12). Moreover, the results speak for a significant negative interaction of all three ethnic favoritism variables with the effect of FDI on the trust and performance level of the president. In contrast to the other model, the regional favoritism variable interacts positively with the FDI exposure.

Finally, I run a split sample regression dividing the units into democratic versus autocratic countries. I argued that institutional quality increases the burden for governments to discriminate against specific groups or regions. Thus, the interaction terms of favoritism are expected to show higher effects in auto-

cratic than democratic countries.[24] The results are presented in the Appendix (see Figures 5.13, 5.14).

Looking at regional favoritism (Figure 5.13), the split regression shows a significant difference between autocratic and democratic countries. Compared to the effects reported in the main section, regional favoritism seems to drive exposed individuals´ political satisfaction with the government: While individuals in autocratic countries show higher trust and performance rates, this changes for individuals in democratic countries. For the operationalization of the dependent variable as the handling of the economy by the president, the differences are non-existent. This is a remarkable finding as it backs up the argument that governments in autocratic settings seem to find it easier to favor some groups disproportionately. For the ethnic group leader variable (Figure 5.14), there seems to be no difference in individual´s trust and performance rating between autocratic and democratic countries. When it comes to handling the economy, though, individuals of the same ethnic group in democratic countries show a positive interaction. At the same time, exposed individuals in autocratic countries report higher values on satisfaction with the government handling the economy.

It is vital to notice that the underlying study has many limitations that should be taken seriously. The Afrobarometer data used by this paper is suboptimal as it is not in a panel format. Instead, some places have been surveyed in several waves while others have not. Moreover, changing numbers of countries and slightly different questionnaires further bias the measurement reliabil-

[24]Another piece of evidence for the correlation between democracy and favoritism lies in the fact that there are no discriminated groups in democratic countries according to the GeoEPR dataset. Thus, the study can only check the interactions between the birthplace (regional favoritism) and the ethnic group of the leader (ethnic favoritism).

ity. This also brings limitations to the models as they compare active with to be active individuals; thus, data availability over the years is essential. In addition, it was fundamental to this study to account for the endogeneity of all types of political satisfaction variables: Not only do these variables relate to each other (see Margalit, 2019; Larsen et al., 2019; Healy, Persson and Snowberg, 2017; Kramer, 1983; Tilley, Neundorf and Hobolt, 2018), they are also endogenous to external factors shaping the economic perception of individuals and their political behavior (see Hansford and Gomez, 2015). These factors can be socio-demographic[25], political[26] or relate to external influences such as economic shocks[27], or the media[28]. This forms a crucial limitation to our study and requires to control for these aspects thoroughly (see Duch, Palmer and Anderson, 2000; Fernández-Albertos and Kuo, 2018; Holbrook and Garand, 1996). While this paper has aimed to account for many of those parameters, there has not been data on every aspect I would have wished to control.

Another measurement-related limitation is the reliability of individual satisfaction ratings: Political perceptions will never be identical to reality (see Bisgaard, Dinesen and Sønderskov, 2016; Duch and Stevenson, 2011; Stevenson and Duch, 2013; Lewis-Beck and Paldam, 2000). Thus, the political grievance must not necessarily be driven by economic and political changes which make it essential to control for where individuals take their information from (see

[25] e.g., age, gender, race, ethnicity, sophistication (see Reeves and Gimpel, 2012; Mansfield and Mutz, 2009; Hainmueller and Hiscox, 2006).

[26] e.g., partisan bias, identification with a party, ideology, ethnocentric and nationalistic behavior or vote choice (see Duch, Palmer and Anderson, 2000; Duch and Stevenson, 2008, 2011; Fortunato, Swift and Williams, 2018; Margalit, 2019; Autor et al., 2020; Evans and Andersen, 2006; Evans and Pickup, 2010; Erikson, 2004).

[27] see Margalit (2019) for a good literature review.

[28] (e.g., see Mutz, 1994; Ansolabehere, Meredith and Snowberg, 2012; Haller and Norpoth, 1997; Hetherington, 1996).

Mansfield and Mutz, 2009; Stevenson and Duch, 2013). In sum, assessments of individuals are far more complex than these variables would allow for. Nonetheless, these satisfaction responses are an adequate proxy for the general condition of individuals, which are - at least partially - affected by the effects of FDI and drive political behavior.

5.6 Conclusion

Based on subjectivity and geotropism, this paper has argued that individuals exposed to foreign direct investment feel more insecure and show lower ratings of political satisfaction. In addition, this paper has assumed that regional and ethnic favoritism can shape the effect of FDI on economic and political grievances: The more excluded people are, the more they will feel endangered by FDI projects with distributional consequences.

The results indicate that FDI can influence an individual's political satisfaction. Thus, this finding contributes to the general discussion on how globalization can affect individuals. It can be seen that the local economy and FDI effects matter for evaluations of governments. Policymakers need to closely monitor the local distribution of economic consequences stemming from foreign capital investments in order to understand rising tensions in their country. Thus, it can be argued that FDI can potentially worsen individuals' economic and political evaluation but not for every applied measure of political satisfaction.

This paper has further shown that ethnic but not always regional favoritism matters for political grievances stimulated by FDI. Being driven by the inability and unwillingness to provide re-distributional welfare policies and not

allowing for greater representation, individuals that the government discriminates against feel more frustrated by incoming FDI: If people feel excluded, they will feel higher dissatisfaction with the president, especially when exposed to FDI and globalization. For the regional favoritism hypothesis, this paper could only find little evidence for the performance evaluation. It has further been shown that democratic institutions matter: The higher the democratic standards in a country, the less influence regional favoritism has on the satisfaction of individuals.

With some limitations, the paper can conclude from this finding that FDI affects individuals in their subjective feeling of insecurity and that the geotropic component – the identification with a group - is a decisive element that exists aside from egotropic and sociotropic aspects. It makes clear that subjectivity and geotropism matter for how individuals inform their assessment. The paper contributes to the favoritism literature in that it is not focused on providing one public good but rather on the overall effect of government action on the individual.

The paper's findings support the methodological and theoretical need to look at the local and individual rather than the national level when identifying how individuals experience FDI. Due to heterogeneous growth effects stimulated by FDI, people are exposed differently, as are economic and political (dis)satisfaction. Future research should establish a panel study around a few FDI projects to observe how those effects change over time. This would advance the knowledge of how exposed individuals form economic and political grievances over time. As of now, the cross-sectional analysis only compares individuals with each other.

Furthermore, it is interesting if multinational companies participate in the ethnic discrimination of people: It could well be that in contrast to domestic firms, international MNCs do not discriminate as much and have a long-term positive effect on individuals that are members of discriminated groups. In contrast, companies might experience benefits by employing based on regional or ethnic aspects: As the work by Earle and Gehlbach indicates, firms directly benefit from regime support, for example, through increases in domestic product demand by state-owned companies (2015). A study that examines if firms also support the course of the government by favoring individuals of a specific region or social group is highly needed.

Along with the already mentioned limitations of the FDI data this paper relies on, there are several serious problems with the data, such as over-reporting by companies regarding their actual FDI spending. Future research should try to understand if this paper's findings depend on the sector or test if the origin of FDI affects the direction and size of the effects. If this were the case, scholars would need to control the home country of the MNC.

Moreover, future research should focus on applying other outcome variables of political satisfaction and also look at how FDI affects political satisfaction with local or regional governments. Finally, future research should also examine the effects of FDI in other regions. While this paper argues for African countries to be qualified to generalize findings for all developing countries, it can still be the case that individuals in those countries show specific reactions to FDI, favoritism or report their satisfaction with the government differently. For example, the colonial past of many regions could affect how individuals think about the government and their social protection.

To conclude, the results show the need for scholars to focus on less-developed countries: The dynamics of FDI in regions with a high-skilled workforce might differ dramatically from places where only a few people can benefit from FDI projects while others are systemically excluded. It will be interesting to see how increasing globalization and international trade will affect individuals' satisfaction and economic well-being in the future and eventually shape the willingness of citizens to protest, participate in regime change, or change election results.

5.7 Appendix

Summary Statistics

Table 5.6: Summary statistics of the variables

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
FDI Treatment	513 486	0.222	0.416	0.000	0.000	0.000	1.000
Trust President	210 150	0.596	0.491	0.000	0.000	1.000	1.000
Performance President	202 550	0.654	0.476	0.000	0.000	1.000	1.000
Handling Economy	214 696	1.970	0.721	1.000	1.400	2.500	4.000
Geo Size Discrimination	546 762	0.0001	0.003	0	0	0	0.1
Birthplace	531 829	0.096	0.294	0.000	0.000	0.000	1.000
Ethnic Group Leader	546 762	0.010	0.098	0	0	0	1
Geo Status	74 722	0.987	0.112	0.000	1.000	1.000	1.000
Age	217 623	19.900	14.700	1.000	8.000	28.000	87.000
Gender	219 229	1.500	0.500	1.000	1.000	2.000	2.000
Rural	217 942	0.601	0.490	0.000	0.000	1.000	1.000
Media Consumption	219 085	2.750	1.130	1.000	1.800	3.600	5.000
Unfairly Treated	179 253	0.429	0.495	0.000	0.000	1.000	1.000
Employed	138 809	0.562	0.496	0.000	0.000	1.000	1.000
Education Level	218 524	4.330	2.140	1.000	3.000	6.000	10.000
Population Mean 15 KM	501 955	55 844.000	130 115.000	0.000	4 243.000	38 285.000	1 505 012.000
Lights Mean 15 KM	540 237	8.150	13.100	0.000	0.165	9.140	63.000

Robustness Checks with FDI Capex (in Million USD)

Table 5.7: Regression table: FDI (capex in million USD) and political satisfaction (regional favoritism)

	Dependent variable:		
	Trust President	Performance President	Handling Economy
	(1)	(2)	(3)
FDI Capex	−0.010	−0.010*	−0.026***
	(0.006)	(0.006)	(0.010)
Birthplace	0.060***	0.063***	0.120***
	(0.012)	(0.012)	(0.022)
I(FDI:Birthplace)	−0.003	0.008	0.013
	(0.013)	(0.014)	(0.024)
Observations	94 015	92 270	95 667
R^2	0.136	0.133	0.120
Adjusted R^2	0.130	0.127	0.114
Note:			*p<0.1; **p<0.05; ***p<0.01

Regression table: FDI (capex in million USD) and political satisfaction. Models include controls, regional and year-fixed effects, and clustered standard errors around the enumeration area. Adding an interaction term for the birth region of the current President.

Table 5.8: Regression table: FDI (capex in million USD) and political satisfaction (geo status)

	Dependent variable:		
	Trust President	Performance President	Handling Economy
	(1)	(2)	(3)
FDI Capex	-0.080^{***}	-0.097^{***}	-0.129^{*}
	(0.029)	(0.036)	(0.072)
Geo Status	0.297^{***}	0.514^{***}	0.231^{***}
	(0.046)	(0.062)	(0.063)
I(FDI:Geo Status)	0.066^{**}	0.087^{**}	0.137^{*}
	(0.030)	(0.036)	(0.072)
Observations	40 357	39 883	41 207
R^2	0.143	0.136	0.129
Adjusted R^2	0.138	0.131	0.124
Note:			*p<0.1; **p<0.05; ***p<0.01

Regression table: FDI (capex in million USD) and political satisfaction. Models include controls, regional and year-fixed effects, and clustered standard errors around the enumeration area. Add an interaction term for the variable if respondents live in predominately discriminated or included regions (geo status).

Table 5.9: Regression table: FDI (capex in million USD) and political satisfaction (geo size discriminated)

	Dependent variable:		
	Trust President	Performance President	Handling Economy
	(1)	(2)	(3)
FDI Capex	-0.010^{*}	-0.010	-0.023^{**}
	(0.006)	(0.006)	(0.010)
Geo Size Discrimination	-2.836^{***}	-4.632^{***}	-1.979^{***}
	(0.409)	(0.547)	(0.603)
I(FDI:Geo Size Discrimination)	-0.751^{*}	-1.007^{**}	-1.431^{*}
	(0.387)	(0.485)	(0.776)
Observations	94 015	92 270	95 667
R^2	0.136	0.134	0.119
Adjusted R^2	0.130	0.128	0.113
Note:			*p<0.1; **p<0.05; ***p<0.01

Regression Table: FDI (capex in million USD) and political satisfaction. Models include controls, regional and year-fixed effects, and clustered standard errors around the enumeration area. Adding an interaction term for the share of discriminated ethnic groups in the individual's region.

Table 5.10: Regression table: FDI (capex in million USD) and political satisfaction (ethnic group leader)

	Dependent variable:		
	Trust President	Performance President	Handling Economy
	(1)	(2)	(3)
FDI Capex	-0.012^{**}	-0.012^{*}	-0.027^{***}
	(0.006)	(0.006)	(0.009)
Ethnic Group Leader	0.141^{***}	0.127^{***}	0.182^{***}
	(0.017)	(0.018)	(0.039)
I(FDI:Ethnic Group Leader)	0.044^{**}	0.065^{***}	0.080
	(0.021)	(0.022)	(0.052)
Observations	94 015	92 270	95 667
R^2	0.137	0.134	0.120
Adjusted R^2	0.131	0.128	0.114

Note: *p<0.1; **p<0.05; ***p<0.01

Regression table: FDI (capex in million USD) and political satisfaction. Models include controls, regional and year-fixed effects, and clustered standard errors around the enumeration area. Adding an interaction term for the variable if respondents live in regions where the predominant group has the same ethnic group as the national leader.

Robustness Checks with 20 Kilometer Buffer Zones

Table 5.11: Regression table: FDI and political satisfaction (regional favoritism): 20 km Raster

	Dependent variable:		
	Trust President	Performance President	Handling Economy
	(1)	(2)	(3)
FDI Treatment	−0.009	−0.013**	−0.023**
	(0.006)	(0.006)	(0.009)
Birthplace	0.062***	0.064***	0.120***
	(0.012)	(0.012)	(0.021)
I(FDI:Birthplace)	0.005	0.013	0.019
	(0.012)	(0.013)	(0.023)
Active - Future Significant	NO	NO	NO
Interaction Active - Future Significant	NO	YES	YES
Observations	94 334	92 580	95 989
R^2	0.136	0.133	0.120
Adjusted R^2	0.130	0.127	0.115

Note: *p<0.1; **p<0.05; ***p<0.01

Regression table: FDI and political satisfaction in a 20 km buffer. Models include controls, regional and year-fixed effects, and clustered standard errors around the enumeration area. Adding an interaction term for the birth region of the current President.

Table 5.12: Regression table: FDI and political satisfaction (geo status): 20 km Raster

	Dependent variable:		
	Trust President	Performance President	Handling Economy
	(1)	(2)	(3)
FDI Treatment	−0.047	−0.074**	−0.066
	(0.036)	(0.037)	(0.071)
Geo Status	0.282***	0.499***	0.197***
	(0.045)	(0.059)	(0.064)
I(FDI:Geo Status)	0.038	0.062	0.074
	(0.037)	(0.038)	(0.071)
Active - Future Significant	NO	NO	NO
Interaction Active - Future Significant	NO	NO	NO
Observations	40 362	39 888	41 212
R^2	0.143	0.136	0.129
Adjusted R^2	0.138	0.131	0.124

Note: *p<0.1; **p<0.05; ***p<0.01

Regression table: FDI and political satisfaction in a 20 km buffer. Models include controls, regional and year-fixed effects, and clustered standard errors around the enumeration area. Add an interaction term for the variable if respondents live in predominately discriminated or included regions (geo status).

Table 5.13: Regression table: FDI and political satisfaction (geo size discriminated): 20 km Raster

	Dependent variable:		
	Trust President	Performance President	Handling Economy
	(1)	(2)	(3)
FDI Treatment	−0.009	−0.012**	−0.021**
	(0.006)	(0.006)	(0.009)
Geo Size Discrimination	−2.700***	−4.509***	−1.682***
	(0.391)	(0.533)	(0.621)
I(FDI:Geo Size Discrimination)	−0.460	−0.777	−0.895
	(0.424)	(0.535)	(0.799)
Active - Future Significant	NO	NO	NO
Interaction Active - Future Significant	YES	YES	YES
Observations	94 334	92 580	95 989
R^2	0.136	0.134	0.120
Adjusted R^2	0.130	0.128	0.114

Note: *p<0.1; **p<0.05; ***p<0.01

Regression table: FDI and political satisfaction in a 20 km buffer. Models include controls, regional and year-fixed effects, and clustered standard errors around the enumeration area. Adding an interaction term for the share of discriminated ethnic groups in the individual's region.

Table 5.14: Regression table: FDI and political satisfaction (ethnic group leader): 20 km Raster

	Dependent variable:		
	Trust President	Performance President	Handling Economy
	(1)	(2)	(3)
FDI Treatment	-0.011^{*}	-0.014^{**}	-0.024^{***}
	(0.006)	(0.006)	(0.009)
Ethnic Group Leader	0.140^{***}	0.123^{***}	0.170^{***}
	(0.016)	(0.017)	(0.036)
I(FDI:Ethnic Group Leader)	0.046^{**}	0.066^{***}	0.058
	(0.020)	(0.020)	(0.046)
Active - Future Significant	NO	NO	NO
Interaction Active - Future Significant	YES	YES	NO
Observations	94 334	92 580	95 989
R^2	0.137	0.133	0.120
Adjusted R^2	0.131	0.127	0.114

Note: *p<0.1; **p<0.05; ***p<0.01

Regression table: FDI and political satisfaction in a 20 km buffer. Models include controls, regional and year-fixed effects, and clustered standard errors around the enumeration area. Adding an interaction term for the variable if respondents live in regions where the predominant group has the same ethnic group as the national leader.

Robustness Checks with Logistics Ordered Regression

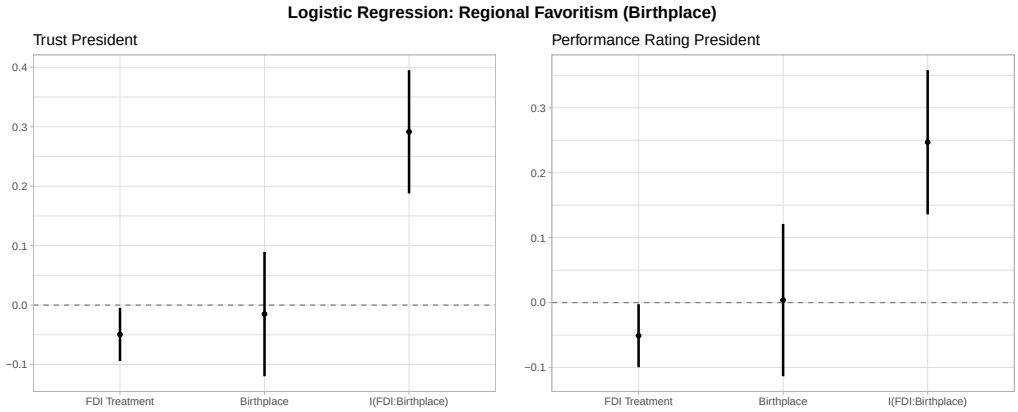

Figure 5.9: Logistics ordered regression table: FDI and political satisfaction. Models include controls, regional and year-fixed effects, and clustered standard errors around the enumeration area. Adding an interaction term for the birth region of the current President.

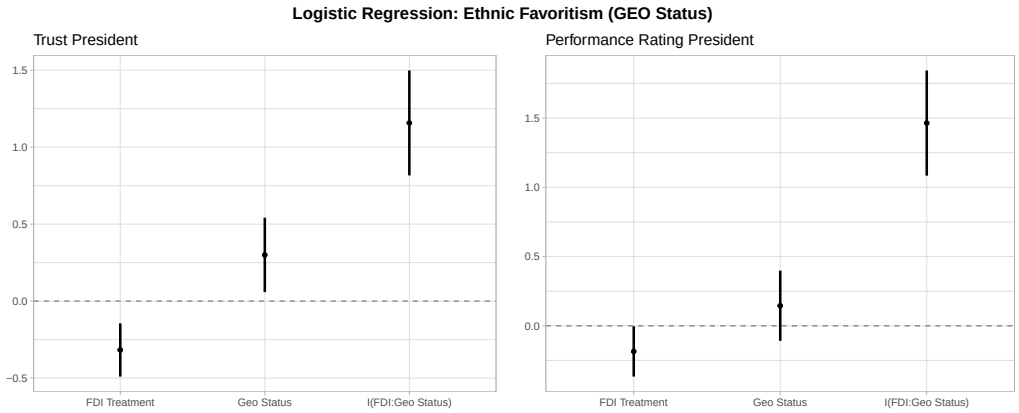

Figure 5.10: Logistics ordered regression table: FDI and political satisfaction. Models include controls, regional and year-fixed effects, and clustered standard errors around the enumeration area. Add an interaction term for the variable if respondents live in predominately discriminated or included regions (geo status).

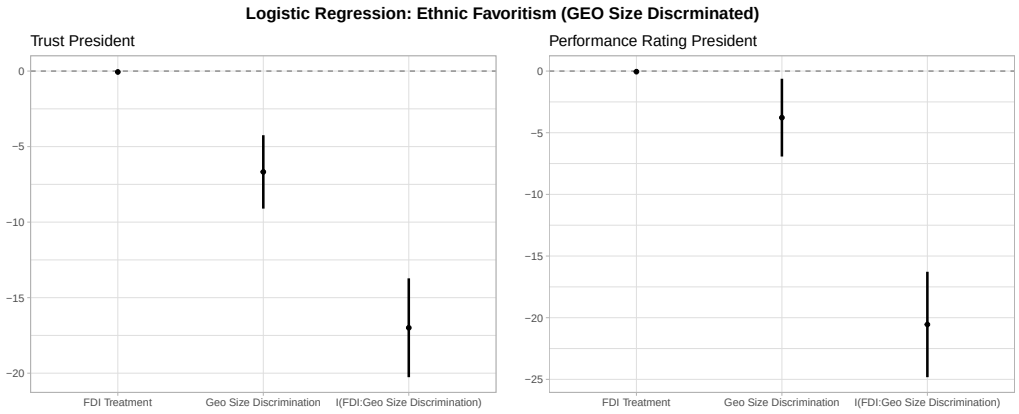

Figure 5.11: Logistics ordered regression table: FDI and political satisfaction. Models include controls, regional and year-fixed effects, and clustered standard errors around the enumeration area. Adding an interaction term for the share of discriminated ethnic groups in the individual's region.

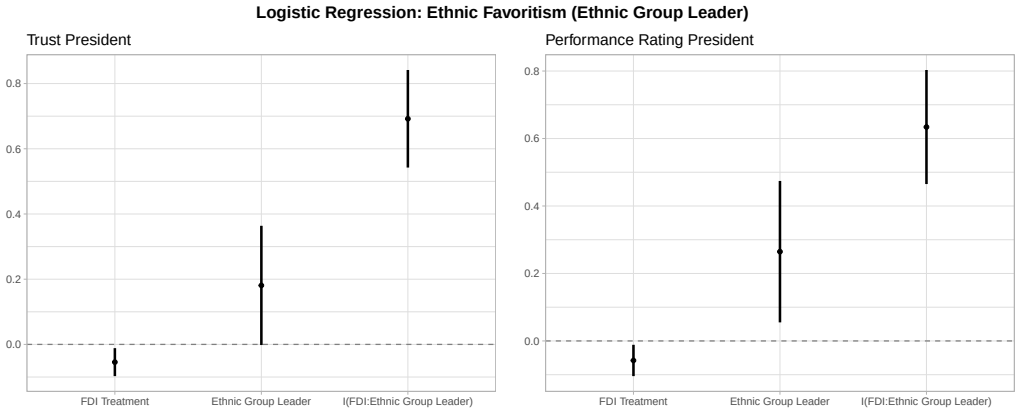

Figure 5.12: Logistics ordered regression table: FDI and political satisfaction. Models include controls, regional and year-fixed effects, and clustered standard errors around the enumeration area. Adding an interaction term for the variable if respondents live in regions where the predominant group has the same ethnic group as the national leader.

Split Regression for Democratic versus Autocratic Countries

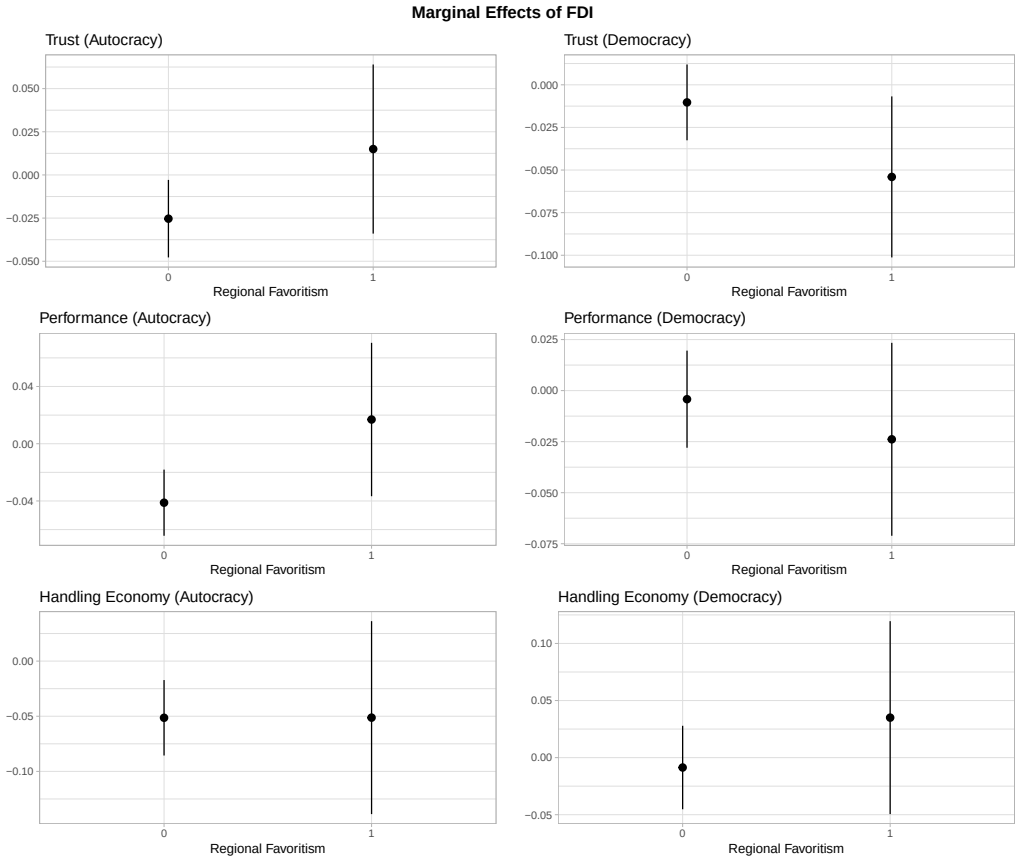

Figure 5.13: Marginal effects plot of FDI on political satisfaction interacting with regional favoritism. The plot presents a split sample regression of democratic versus autocratic countries.

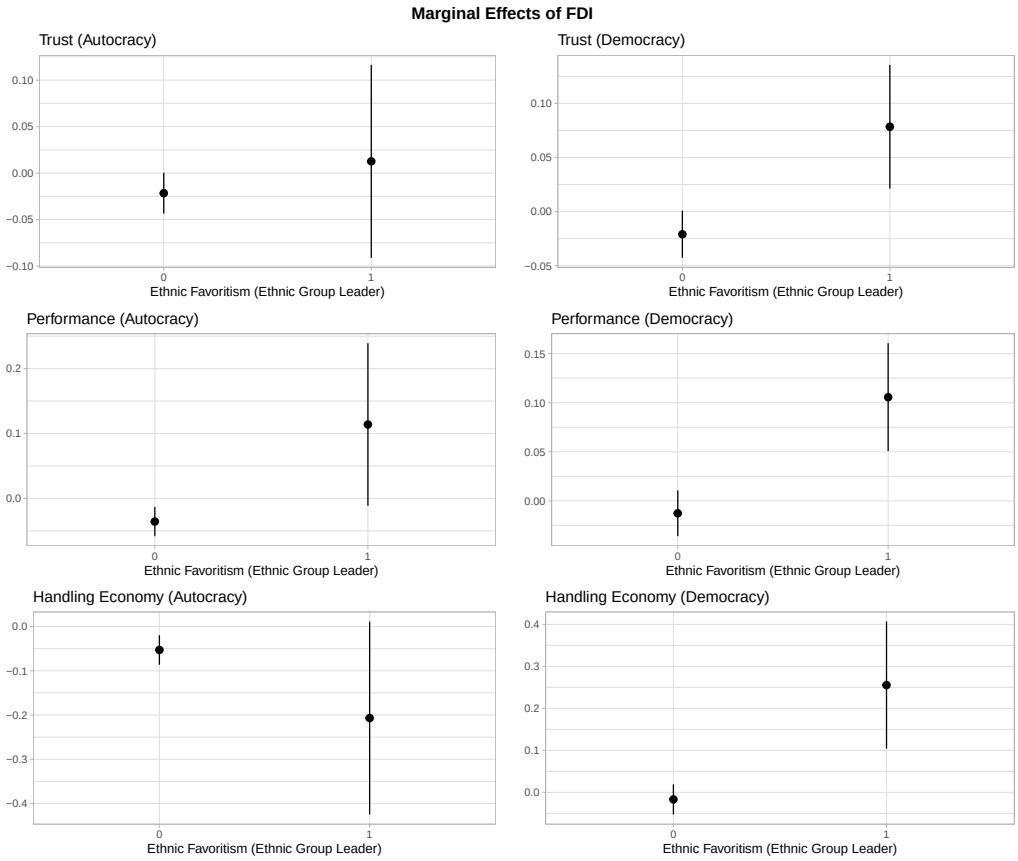

Figure 5.14: Marginal effects plot of FDI on political satisfaction interacting with ethnic favoritism (ethnic group leader). The plot presents a split sample regression of democratic versus autocratic countries.

Robustness Check: The Influence of Education on Reported Well-being and Political Satisfaction

To measure the economic well-being of individuals, the paper uses two questions from the Afrobarometer survey. First, the question about the individual subjective well-being: "In general, how would you describe your own present living conditions?". This variable is called "egotropic evaluation". Second, about the subjective sociotropic assessment of the country's general situation: "In general, how would you describe the present economic condition of this country?". This variable is called "sociotropic evaluation". People who answered "very bad" or "fairly bad" were coded as 0, and those that replied "fairly good" or "very good" were coded as 1.

The results show a positive effect of education on the well-being of individuals exposed to FDI. This effect is significant for the egotropic evaluation but not for the sociotropic evaluation. This makes sense as skill level is expected to especially affect the egotropic assessment of one's capacities. The Table also indicates that education has mixed effects on political satisfaction. While it shows a positive interaction with trust, it has a negative interaction with the assessment of the handling of the economy. Moreover, it has no significant effect on the performance rating of the president. This might be explained by the fact that better-educated people are more aware and critical of government policies and thus report lower satisfaction once exposed to FDI. Explaining and examining this trend is beyond the scope of this paper and should be part of future research.

Table 5.15: Regression table: Interaction of education with FDI, economic well-being and political satisfaction

	Dependent variable:									
	Egotropic Evaluation		Sociotropic Evaluation		Trust President		Performance President		Handling Economy	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FDI Treatment	−0.007	−0.051***	−0.019***	−0.021**	−0.010*	−0.031***	−0.010	−0.005	−0.024**	0.003
	(0.006)	(0.010)	(0.006)	(0.010)	(0.006)	(0.009)	(0.006)	(0.010)	(0.010)	(0.015)
Education	0.021***	0.023***	0.007***	0.007***	−0.009***	−0.008***	−0.006***	−0.006***	0.0004	−0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)
I(FDI:Education)		0.009***		0.0003		0.004***		−0.001		−0.005**
		(0.002)		(0.002)		(0.001)		(0.002)		(0.002)
Active - Future Significant	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO
Interaction Active - Future Significant		NO		NO		NO		NO		YES
Observations	77 367	77 367	81 021	81 021	94 015	94 015	92 270	92 270	95 667	95 667
R^2	0.142	0.143	0.137	0.137	0.136	0.136	0.133	0.133	0.119	0.119
Adjusted R^2	0.135	0.136	0.131	0.131	0.130	0.130	0.127	0.127	0.113	0.113
Note:										*p<0.1; **p<0.05; ***p<0.01

Regression table: FDI and reported economic well-being and political satisfaction. Models include controls, regional and year-fixed effects, and clustered standard errors around the enumeration area. Adding an interaction term for the education level.

Chapter 6

Conclusion

This dissertation has examined the economic and political consequences of FDI for developing countries. Given inconclusive evidence and contradicting findings on this relation in the IPE literature, I aimed to offer additional theoretical explanations and advance the scholarly debate to understand the chances and risks FDI has for people mostly living in the Global South. Specifically, my dissertation answered the following research questions:

- How does FDI stimulate changes in national labor rights standards? (Chapter 2)
- How does FDI affect economic development and disparity on the local level over space and time (Chapters 3 & 4)
- How does FDI change the political satisfaction of people with the government? (Chapter 5)

I have argued that FDI can potentially drive the government's decision to change legislation in the form of labor rights, create economic development and disparity at the local level, and negatively affect citizens' subjective insecurities and political satisfaction with the government. The chapters further contribute to advancing the empirical debate in the IPE literature by using geo-referenced data for FDI project announcements, nighttime light, population, and survey data and applying novel estimation methods for panel data.

6.1 Findings

My findings suggest a pertinent influence of FDI on government decisions, local and regional economic development, and individual political satisfaction:

Chapter 2 has investigated if and in which direction FDI shapes governments in changing de-jure labor rights in a country. It is argued that FDI is a crucial source of capital that governments aim to attract to enhance economic development. In contrast to existing inconclusive studies, we have differentiated labor rights by how expensive they are for the investor. We have suggested that expensive outcome rights such as fair working contracts, adequate working time, and dismissal protections bring higher direct costs for investors, and governments are incentivized to lower those standards accordingly – "race to the bottom". On the other hand, collective rights like worker representation and industrial action rights are less expensive for investors, and those standards should be improved with incoming and existing FDI in a country – "climb to the top". The analysis has shown a robust and positive relation between FDI and collective rights and a negative relation with outcome rights. The findings have been robust with several specifications and have highlighted the need for future research to differentiate labor rights as they are more heterogeneous than expected.

Chapter 3 has examined the distributional economic effects of FDI. In contrast to many other studies that use national data on FDI and growth, it is argued that investments create spatially confined development and inequality effects at the local and regional levels. The chapter has expected economic development at the investment location that diminishes with distance to the project site. At the same time, the economic disparity between the receiving and surrounding locations should increase as growth effects do not travel far from the project site. In addition, the chapter has argued that autocratic countries, which are held less accountable but are simultaneously incentivized to administrate incoming investments faster, could expect higher growth and greater intra-regional

inequality effects. The chapter has found evidence for those claims and has highlighted the need to look at the local instead of national level when analyzing the economic consequences of FDI.

Chapter 4 has followed this argument and empirically tested the relevance of time for those economic consequences. It has been argued that FDI creates distributional consequences that differ over three periods: The announcement-, short- and long-term phases. The empirical evidence of the difference-in-differences estimator has indicated that FDI stimulates growth and inequality effects starting from the second year and reaches a plateau between years five and six. This speaks for the necessity to take the time and duration of FDI projects more seriously when analyzing economic and political consequences.

Chapter 5 has focused on the individual effects of FDI and its political consequences. The chapter has argued that – albeit with net positive effects on local development – individuals would feel subjectively more insecure as FDI creates job and wage volatility and crowding out effects for domestic firms that primarily affect lower-skilled individuals, who are the majority in developing countries. Building on the concept of geotropism, I have argued that FDI would affect individuals differently and not just depending on their skill level. If people are part of or live close to a group that is less connected to the government, they will feel more vulnerable and less protected, translating economic insecurities into political frustration with the government. The chapter has demonstrated empirical evidence for those claims. Exposed individuals feel more insecure and report higher dissatisfaction with the government. In addition, individuals that are part of a discriminated ethnic group or do not feel ethnically connected to the leader have been found to feel less satisfied with the government once exposed

to investments.

The dissertation has uncovered potential mechanisms that help policy-makers and researchers understand the relevance of FDI for economic and political developments, individual frustrations, and changes in labor rights. It has added theoretical explanations and employed sufficient estimation techniques that have supported the arguments.

To conclude, the dissertation highlights nine key findings for the IPE literature.

- It has been shown that FDI creates economic and political consequences for people living at and around the project site. Those effects are not necessarily always direct – such as the gain or loss of jobs - but can also be perceived indirectly, for example, through relative inequality or decreased job security.

- Distributional effects are heterogeneous and cannot always be detected at the national level. This reminds scholars to focus on local and regional effects and to move away from cross-country analyses.

- Scholars need to take the spatiality and temporality of investment projects seriously as effects are not constant over time and space, thus stimulating uneven political consequences.

- It is relevant to differentiate subjective and objective effects. It can well be that individuals living in places that experience economic development from FDI will still feel insecure as distributional consequences affect economic volatility and subjective assessment. Thus, scholars should not equate

net-winning locations with net-winning individuals.

- People perceive their and others' economic and political satisfaction via geotropic channels. Economic voting literature should thus further examine the relevance of geotropic assessments compared to the better-established concepts of ego- and sociotropism.

- Distributional material effects from FDI can translate into political grievance and negative performance assessments by individuals. This helps to understand how economic disparities develop into societal tensions and can spark protests and grievances.

- It has been shown that individuals – independent of their skill level – will feel more insecure when they are not politically connected to the leader. As such, ethnic favoritism has been shown to moderate the effect of FDI on political satisfaction.

- The dissertation has highlighted the need for scholars to disaggregate measures spatially (local FDI projects, nighttime light, population, and survey data) and conceptually (labor rights). Sometimes, it is necessary to look at disaggregated variables to understand inconclusive findings that cause existing debates in the IPE literature.

- This dissertation has applied several estimation strategies for big panel datasets. It has been shown how to work with a grid cell raster that can be geo-merged with other data and has applied several difference-in-differences estimation techniques.

6.2 Limitations

Aside from those contributions to the literature, it is, nonetheless, essential to take the results cautiously as they are based on many assumptions and model specifications that are vulnerable to data quality, availability, and endogeneity.

One source of limitation is the availability and quality of sufficient data. Especially when looking at the nighttime light data, it is hard to assess the correctness and quality of data-generating processes made possible by weather satellites. It is hard to understand if biases are always distributed randomly or whether they are skewed, which could seriously violate model assumptions. At those places that receive a lot of FDI and should, therefore, also have higher values of nighttime light, the sensitivity to bright places (saturation), and the wrong geo-coding of light due to the moving of the earth and the satellite (overglow) can cause severe non-random limitations to the raster. Particularly in small grid cells, such as 10x10 kilometers, saturation could lead to wrongly assumed light development at places that are neighboring FDI locations. While the advantages of using project-level FDI data outweigh the concerns, several limitations exist. As the data only covers announcements, the amount that MNCs realize will often be smaller (e.g., see Brazys and Kotsadam, 2020). To overcome this over-representation, the chapters have applied a treatment dummy instead of the amount of FDI for the main estimations. Moreover, the data does not contain information on mergers and acquisitions, also called brownfield investments (e.g., see Owen, 2019). While the fDi markets data still has many advantages over national FDI data provided by UNCTAD or other organizations, limitations should always lead to treating the findings with higher caution. Moreover, the

survey data provided by the Afrobarometer comes with restraints. The most crucial is that questions and answer options vary over the seven rounds. This has limited the choice of dependent variables to those with the exact wording. Moreover, there is no identification of whether people have already been interviewed in previous rounds. Rounds come in different time gaps and countries, leading to an unbalanced panel. These restrictions are especially pertinent to the estimation strategy and have restricted any identification in chapter 5 to correlational instead of causal analysis.

Besides limitations linked to the quality and availability of data, another source of limitations to this dissertation is other threats to endogeneity within the models. While the PanelMatch package used in chapters 3 and 4 has matched on the observable time trend and thus allowed for a sufficient estimation technique, investor decisions, and their effects stay heavily endogenous and clustered. It is hard to tell with complete certainty that investment decisions and previous light developments before 2003 – the first year of FDI data availability – are always independent. Investors consider how locations are meant to grow in the future when deciding. Thus, the findings might be affected by reverse causality. Moreover, investors can make their decisions based on other investors, which creates a non-random distribution of the treatment.

Another threat to endogeneity is the omitted variable bias. While chapters 2 and 5 control for many variables that could influence governments and individuals, it is not guaranteed that essential aspects that drive governments' decisions and individual frustrations have not been overseen. Given the restricted data availability that led to an unbalanced panel, this dissertation has not been able to establish causal estimations for those two chapters. Instead, the correlational

analysis can only detect relations but not make statements about the directionality of the effect – even if the chapters have employed lagged variables.

Finally, the generalizability of the results is limited. This dissertation has focused on non-OECD countries, which is essential because the primary literature is still biased toward high-income countries. While the empirical results and robustness checks suggest the validity of the findings, the selection of countries for the analysis can always bias the results. For example, the theoretical mechanism could differ depending on the domestic market and consumer income, which are different in each country: Given the absence of domestic markets and the increasing importance of global value chains, FDI in some developing countries may always be more export-oriented than in others. This can drastically change the competition between domestic firms for local markets and generate different labor market effects. I argue that the set of countries used in the analysis varies enough to be an adequate pool of observations. Nevertheless, the results must always be cautiously treated, as generalizability cannot be fully guaranteed.

By clustering standard errors, adding unit- and time-fixed effects, and running several robustness checks, I hope to have convinced the audience of the validity of the findings. Nonetheless, the decision for or against specific estimators always bears the risk of over- or underestimating effects or violating critical model assumptions. While I am confident that I have applied the most rigid model specifications to assure the most conservative estimation and ran several robustness checks, different models might produce different results.

6.3 Future Research

With those limitations in mind, there are several ways in which future research can and should advance the findings of this dissertation.

Many limitations can be tackled by increasing data availability and quality, creating a balanced and complete panel dataset. Individual survey data should be gathered for many more countries in the Global South and conducted annually to create balanced panel data. Moreover, future surveys should cover essential questions for IPE scholars. Survey questions should allow for identifying the channel through which an individual assesses their economic and political well-being. Differentiating ego-, geo-, and sociotropic channels would help answer the long-lasting question of the economic voting literature. How does the economic environment affect political and economic insecurities? This survey data should also measure if individuals recognize existing FDI projects at their location and ask for general sentiments about globalization and the origin of such FDI projects. This could allow us to examine the relevance of ideological and anti-globalization sentiments for insecurities and frustrations. Moreover, survey data could help to understand if individuals see the political responsibility of national and local politicians to attract FDI projects and connect their economic and political frustrations with those politicians.

Future research should also use other FDI data. Aside from the problem of only measuring project announcements and covering greenfield investments, the provider of the fDi markets data, the Financial Times, restricts data access and requires an annual subscription to their data.[1] While this approach might

[1]Other providers of FDI data also restrict data access and require annual subscriptions.

make sense for commercial use, it - based on funding constraints in the academic sphere - severely reduces data access for scholars and creates asymmetries between research institutions. Excluding many scholars will restrict the validation of the findings of this dissertation. An open-access solution that builds on web-scraped investment project announcements and their realization would be heavily needed.

Data-related issues aside, future research should focus more on the dynamics of FDI at the micro level. While there is much research on the national and regional level, local and individual effects are still largely unexplored. The dissertation has shown the importance of subjective and geotropic evaluations. Researchers should focus more on how geotropic evaluations relate to the more established ego- and sociotropic evaluations. It would also be interesting to see how individuals translate economic grievances into political grievances, focusing on the role of the media and local incumbents that aim to attract FDI. There is much to uncover regarding micro-level evaluations, and the dissertation is still too broad to provide a complete picture of what happens in workers' minds.

In addition, future research should focus on concrete government decision-making processes that could provide a better understanding of how governments balance the interests of workers and investors. For example, it would be interesting to see how and when governments are forced to make trade-offs on labor rights between workers and citizens. What is the role of foreign direct investment, given the role of the ILO, investment treaties, and other external factors that can pressure governments to act? Concerning ethnic and regional favoritism, it would be interesting to see how governments decide on compensation policies and what role unions, NGOs, and other stakeholders play in favoring

some regions and not others.

Future research should identify whether findings can be validated when differentiating FDI by sector. Given that the economic consequences of investments should vary over different sectors, one might also see differences in how these sectors moderate the frustrations of individuals. Likewise, the growth and inequality effects should also differ when analyzing mergers and acquisitions. Thus, future research should also consider assessing the differences between those types.

Another angle to understand the consequences of FDI better is to gather data on firm-level decisions. It would be interesting to see how firms interact with the local community and if they undertake any action to compensate for inequality effects. Following the favoritism argument, future research could examine if MNCs employ based on ethnic characteristics. If yes, insecurities and dissatisfaction could be magnified and increase racial and ethnic tensions. If not, this could lead to better positions for formerly marginalized groups and empower those to reach equality. Mapping out drivers of investors' decisions could help to identify if and how companies are actively lobbying for changes in labor rights. Building on the disaggregated labor standards in Chapter 2, future research can examine the concrete relation between investors and specific labor rights.

Future research should also move away from large-n analyses and run case studies. Observing the concrete effects of incoming FDI on growth, inequality, sentiments, and frustrations as an outcome of concrete investment projects could help to understand and validate the mechanism drawn by the New New Trade Theory. By only looking at the large-n analysis, this dissertation might

have missed the opportunity to uncover local elements that affect the relevance and consequence of FDI.

In addition, future research should focus on other factors that drive the relationship between FDI and individuals. It has been shown that the quality of political institutions affects the vulnerability and frustration of exposed individuals. It would be interesting to examine how local authorities and spiritual or ethnic leaders influence individuals. Moreover, focusing on FDI as one element of globalization might ignore the interplay of FDI with other economic flows, such as trade or foreign aid.

Finally, the COVID-19 pandemic has led to dramatic developments everywhere, forcing governments to close their borders, schools, and businesses (Cheng et al., 2020, 2021, 2022). According to UNCTAD, in developing economies, FDI inflows have declined by 12% in 2020 to increase by around 30% in 2021 UNCTAD (2022). This unusual happening will probably also affect how governments and individuals perceive FDI. The COVID-19 pandemic can be seen as an external shock that could support scholars in identifying the effects of FDI on individual and local communities. Moreover, how the investments develop after the pandemic and whether FDI will still be an essential driver for economic development in developing countries remains to be seen.

6.4 Implications for Policymakers

The findings of this dissertation are relevant for policymakers and governments. Given FDI's economic and political consequences, governments must consider distributional effects and disparity at local and regional levels. As shown in

the dissertation, economic insecurities arising from FDI will make most people feel frustrated about their own and others' economic well-being. It has been shown that economic consequences can develop into political grievances and frustrations with the government. Governments are asked to take this trend seriously, as dissatisfaction and tension could affect the regime's stability and support in future elections.

Policymakers need to reflect that aside from promising development and an unrestricted influx of capital at the aggregate level, FDI can also lead to economic tensions that especially affect some parts of society. Governments need to account for the heterogeneity of FDI effects that are restricted in time and space and thus require local public good provision instead of national policies. In response, governments could invest more in the education system and compensate people suffering the most from FDI. By providing additional help at locations that aim to re-distribute asymmetrical growth effects, people might feel less insecure and more supportive of the government. In addition, governments could announce compensation policies through economic and social development programs to expose regions to decrease citizens' vulnerability further. When balancing the interests of workers and investors, governments can assure citizens of higher standards of labor rights and offer further protection. Balancing these interests can also prevent an increase in social tensions and strikes.

Another aspect that policymakers should consider is ethnic fractionalization and their decision to favor one group over others. While it might makes sense for governments to favor their group, this dissertation has shown that FDI will increase social tensions and frustrations with the government. This implies that the relative costs to compensate the disenfranchised citizens become more

expensive. Governments should focus on improving the vulnerability of those disconnected people and social groups that particularly live in places exposed to FDI projects. MNCs might also not be interested in the polarization of ethnic tensions, and ethnic fractionalization could become a reason against their investment decision. Thus, governments must improve the living situation and ethnic tensions in polarized regions to lower the risk for investors and unrest.

This dissertation started with the protest of Indian traders against incoming FDI. Four years later, it explains why and how social tensions and frustration have increased over time. Rising insecurity and frustration due to incoming FDI and domestic market competition have led to open protests demanding greater protection by the government. Given increasing economic developments and FDI flows, individual insecurities and frustrations may increase together with growth and inequalities at the local and regional levels - a key finding of this dissertation. Individuals might feel more insecure with rising investments as previous experiences have already resulted in crowding out effects of domestic market participants. Whether this fear is justified is irrelevant as subjective vulnerability determines people's frustrations and can, according to this dissertation, affect how people think about their government. Governments are thus asked to moderate the interests of investors and workers actively. They could make rules that establish better labor standards, compensate local and regional disparities by providing public goods, and improve the conditions of those who feel excluded and discriminated against. Policymakers need to understand that with the promising arrival of foreign investments, economic and political consequences must be taken seriously. Thus, governments need to find a compromise between different interests to reach sustainable economic development and

guarantee social stability simultaneously.

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Publication List

A version of Chapter 2 of this dissertation has been published in the following journal:

Messerschmidt, Luca, and Nicole Janz. 2023. "Unravelling the 'race to the bottom'argument: Foreign direct investment and different types of labour rights." *World Development* 161:1-24

The following list includes all publications that I substantially contributed to as a co-author and appeared in a peer-reviewed international journal:

Cindy Cheng, Amlie Desvars-Larrive, Bernhard Ebbinghaus, Thomas Hale, Alexandra Howes, Lukas Lehner, Luca Messerschmidt, Angeliki Nika, Steve Penson, Anna Petherick, Hanmeng Xu, Alexander John Zapf, Yuxi Zhang, Sophia Alison Zweig. 2022. "Capturing the COVID-19 Crisis through Public Health and Social Measures Data Science." *Nature Scientific Data* online:1-9

Joan Barcelo, Cindy Cheng, Robert Kubinec, Tiril Hye Rahn, Luca Messerschmidt. 2022. "Suppression and Timing: Using COVID-19 Policies against Political Dissidents?" *Journal of Peace Research* 59(1):73-89

Cindy Cheng, Joan Barcelo, Allison Spencer Hartnett, Robert Kubinec, Luca Messerschmidt. 2020. "COVID-19 Government Response Event Dataset (CoronaNet v.1.0)" *Nature Human Behaviour* 4:756-768