

The Impact of Finance and Political Ideology on Income Inequality: Empirical Analyses

by

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A thesis submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy (Ph.D.) in Human Studies

The Faculty of Graduate Studies
Laurentian University
Sudbury, Ontario, Canada

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THESIS DEFENCE COMMITTEE/COMITÉ DE SOUTENANCE DE THÈSE
Laurentian University/Université Laurentienne
Office of Graduate Studies/Bureau des études supérieures

Title of Thesis Titre de la thèse	The Impact of Finance and Political Ideology on Income Inequality: Empirical Analyses	
Name of Candidate Nom du candidat	Safavi, Mohammad	
Degree Diplôme	Doctor of Philosophy	
Department/Program Département/Programme	Human Studies and Interdisciplinarity	Date of Defence Date de la soutenance November 24, 2022

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Abstract

In order to better understand how finance causes income inequality and to comprehend the ontology of this relationship, I started the ‘minor’ part of this thesis with the fundamental assumption that the knowledge sphere exists independently of our knowledge and regardless of personal subjective experience.

The overall (minor plus major) objective of this thesis is to gain a better understanding of the relationship between finance and income inequality. To achieve this objective, I examine both the theoretical and a large empirical literature on the subject. At the level of theory, the thesis combines the orthodox and heterodox mechanisms through which finance generates income inequality in modern capitalist countries. Empirically, the thesis develops a Dynamic Panel Autoregressive Distributed Lag (ARDL) model that controls for indicators of globalization, rising monopoly power, business cycles, and other variables in an attempt to isolate the unbiased causal effects of financial variables on income inequality.

I estimate the ARDL model against two-panel datasets. I use the first dataset (48 countries from 1993 to 2017) to study how financial development, financial liberalization, and financial structure affect the Gini- measure income inequality across high, middle, and low-income countries. I employ the second dataset (14 OECD countries from 1980 to 2017) to study the long-run effects of financialization and neoliberalism on several alternative measures of income inequality across countries classified as neoliberal (the United States, the United Kingdom, Canada, and Australia); Nordic (Denmark, Finland, Sweden, and Norway) and social-corporatist (France and Germany).

The primary finding of this research is that financial indicator variables exert a significant effect on income inequality in the long run across high, middle, and low-income countries.

Second, countries with a more market-based financial structure promote more equitable income distribution, while countries with faster growth tend to generate greater income disparity. Third, increased trade openness leads to increased income disparity, while lower competition helps to

reduce inequality. Our evidence does not support the inverted “U-shape” theory¹ concerning financial development and income inequality. Finally, neoliberalism and financialization have increased disposable income disparity in the upper-tail and the lower-tail of income distribution within countries.



¹ The inverted U-shape theory suggests that income disparity first increases and then decreases before finally stabilizing. This theory indicates that income disparity rises during the early stages of financial development. More finance aids in the reduction of income inequality once a certain threshold of financial development has been reached.

Acknowledgments

The completion of the thesis would not have been achievable without the help and encouragement of certain special persons. As a result, I'd like to use this opportunity to express my appreciation for individuals who have helped me in various ways.

I am also very grateful to thank Dr. Islam, my thesis advisor, for teaching me the knowledge and research skills. Aside from my advisor, I'd like to thank the remainder of my thesis committee: Dr. MacLean and Dr. Faroque, not only for their insightful comments but also for the direction that encouraged me to broaden my study from several viewpoints.

When I was studying mechanical engineering in Iran, I imagined being an expert in economics. While taking difficult technical classes, I was constantly listening to economists worldwide. I realized I had a long road ahead of me if I wanted to be whom I wanted to be. Despite the hardships of caring for a lovely baby and financial concerns, I chose to begin studying economics as the first step toward achieving all of my ambitions. So, I got two bachelor's degrees in mechanical engineering and economics, as well as a master's degree in my home country, but it was not good enough for me.

So, I moved to Canada with my 12-year-old daughter to pursue my education. We lived in residency and studied together for days and nights. Despite the challenges of being single parents and dealing with migratory complications, we were both ambitious and optimistic; we did not give up. I had always dreamed about writing my Ph.D. thesis acknowledgment, and I was thinking about whom I should thank. Above all those who have shown me love and support, I want to thank my 16-year-old daughter, Sahba, who has assisted me with everything she has: love, patience, and understanding. I will appreciate my only sister, Dr. Roshanak, for her generosity to her niece and me, which always made me feel warm and hopeful. I am grateful to

my parents for their unconditional affection. I thank my love, Monica, a Ph.D. student at my university. She constantly inspired me to pursue my ambitions with love and enthusiasm.

I would not have made it to this point without the assistance of Dr. Serge Demers and Melissa Ouimette. Throughout this lengthy journey, they always supported and solved my problems.

Within the University, I have also had the support of Dr. Simon Laflamme, Dr. Ali Reguigui, Dr. Tammy Eger, and Dr. David Lesbarreres; thank you for your helpful advice and support.

I am sure that this is only the beginning. I am aware that there is no end. I've just completed another step and must continue my journey. I dream of having some positive influence on the world and having a small contribution in some small way to the alleviation of poverty and inequality—a place for a better life, where there is peace and no war.

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Chapter 1

1 Introduction: Rethinking of Finance and Income Inequality.

This thesis investigates how financialization contributes to the rise in income inequality.

Theoretically, it explores the orthodox and heterodox viewpoints on financialization and inequality in modern capitalist economies. Empirically, it comprises a thorough analysis in two chapters. First, three main areas of finance, including financial development, financial liberalization, and financial structure, and their relations with income inequality are examined. Second, the effects of neoliberalism and financialization on income inequality (Gini index), the 90-50 income ratio, the 50-10 income ratio, and the 90-10 income ratio are addressed.

The influence of finance on income inequality is one issue that has attracted a lot of attention. However, there are differing perspectives on the link between finance and income inequality. Before the French Revolution, there was an intuition that inequality was divisive and socially destructive (Wilkinson, 2013). During the previous few decades, income inequality and financial development have increased substantially. Along with the phenomenon, the number of empirical and theoretical studies on the causal effects of economic growth, financial development, and inequality has expanded. Because of expanding financial development and increasing credit and trade opportunities for households and firms, income inequality shows a definite increasing trend

that has resulted in several protests and demonstrations, particularly after the global financial crisis of 2008, in wealthy industrialized countries and several emerging countries. The protests seemed to have been inspired by the Arab Spring uprisings against dictatorial governments in the Middle East. In 2011, public street protests against the government and the financial system dominated front-page news headlines. The 15-M Movement in Madrid aimed against the financial establishment, followed by Occupy Wall Street in New York and various versions such as Occupy Boston, Occupy Los Angeles, Occupy London, Occupy Melbourne, and Occupy Rome. As a result of this observation, there is growing concern about whether financial overdevelopment and malfunction contribute to rising income inequality. To put it another way, financial development influences investment in human and physical capital. As a result, by influencing capital allocation, financial development can affect aggregate output and the unemployment rate, potentially affecting poverty and income distribution.

These concerns reflect those various disciplines that focus on different aspects of inequality and finance. Several articles, for example, look at how financial development affects income inequality, while others look at how financial liberalization affects income inequality. Inequality is a hot topic in public policy discussions. Growing income and wealth disparities, particularly within developed countries, have highlighted worries about their economic and social implications (Piketty, 2014; Atkinson, 2015). Some researchers have explored how growing rent extraction by financiers may contribute to rising income inequality. Korinek and Kreamer

(2014), for example, propose a model in which financial deregulation increases inequality. Some studies focused on how the well-paid become exceedingly well-paid and why the situation appears to be deteriorating.

Some research looked at how financial development affects income disparity through influencing socio-economic structures such as urbanization and geographic mobility, material and immaterial infrastructures, and human capital production (Baum-Snow and Pavan, 2013; Behrens and Robert-Nicoud, 2014a and 2014b). Several studies seek causality from the financial sector to early inequality or initial inequality to financial sector development. Several researchers have examined whether deeper financial structures lead to less poverty and inequality. Several studies have researched whether access to financial services is essential for people's productivity and well-being and whether it may help reduce poverty and inequality (Turegano, and Herrero, 2018). Some papers explore whether financial inclusion aids in the reduction of income inequality (Omar and Inaba, 2020; Turegano and Herrero, 2018). Some studies debate the economic consequences of financialization, while others argue about the effects of financial globalization on income inequality (Khan, Shehzad, and Ahmad, 2021). Several studies consider the influence of financial crises on income inequality (Ranci re and Winant, 2013). Some scholars assess whether the link between finance and income inequality is influenced by institutional quality. Bank-based and market-based intermediation are present in all financial systems. However, the financial structure—the specific mix of the two intermediation

channels—varies across the countries. Some scholars seek to understand the link between financial structure and income inequality (Liu, G., Liu, Y., and Zhang, 2017).

One of the significant issues of modern capitalism's political economy should be rising income disparity. In this thesis, the phenomenon of financialization and its relationship to the idea of financial capitalism will be discussed using theoretical and empirical studies. As a result, the knowledge gap in the present discussion on the finance and income inequality nexus will be identified. Moreover, it is critical to investigate the relationship between neoliberalism and financialization to develop a conceptual and theoretical framework for the interaction of income inequality and finance. Establishing a study hypothesis, research questions, design, and conceptualization of findings will all aid the development of this theoretical and empirical perspective.

1.1 Defining the aim, research questions, and the hypothesis.

Inequality of income has risen in most advanced, emerging markets and developing countries. Finance is a fundamental component in most theories of persistent inequality. Consequently, it is no wonder that economic theory has a variety of predictions for both the impact of finance on inequality and the mechanisms that support it. Yet there is still no consensus on the origins of inequality. The impact of finance on income inequality is one aspect that has gained a lot of

attention in recent literature. However, there are differing perspectives on the link between finance and income inequality.

This thesis argues that the link between financial development and income inequality is a generative process that enables and secures upward income distribution within a neoliberal production mode. Neoliberalism in wealthy countries tends to focus on three primary policy agendas: liberalization, privatization, and stability (Kotz and McDonough, 2010). The thesis's primary postulate adopts neoliberalism as the ideological and political economy framework of the financialization process utilized by the governing classes to promote upward income distribution, which leads to income disparities. The following study hypothesis was developed based on the empirical investigation addressed later in this thesis:

Hypotheses and research questions of Chapter 4:

Upward income distribution is exacerbated by financial development (Stiglitz, 2015), which refers to a rise in the volume of financial activity, and financial liberalization, which entails a reduction in government intervention and an increase in the involvement of financial markets, both of which have similar consequences for income inequality. The financial structure of a country's financial system, which determines whether it is a bank- or market-oriented, does not help us mitigate income disparity (Levine, 2002). In the banking sector, increasing competition is advantageous to income distribution and reduce income inequality.

Finally, A major goal of chapter 4 is to see if financial development and financial liberalization increase income inequality regardless of the country where they take place and if income inequality is influenced by financial structure or the degree to which a country's financial system is bank- or market-oriented. As a result, in chapter 4, this study adds to our understanding of the relationship between three dimensions of finance and income disparities by posing the following question:

- Does financial development increases income inequality? Is it a non-linear relationship (below vs. above a specific threshold)?
- Is there a difference in the finance-inequality relationship depending on the financial structure?
- What is the relationship between financial liberalization and income inequality?
- Is there a link between income inequality and bank competition in the financial sector?

Hypotheses and research questions of Chapter 5:

Economic liberalism increases inequality, particularly in high-income countries (Bergh and Nilsson, 2008). The neoliberal state index, which is comprised of government consumption spending, government transfers and subsidies, government investment, and the top marginal tax rate, will increase disposable income inequality. The neoliberal state will increase the

upper- and lower-tail inequality, measured as the 90-50 and 50-10-income ratios, respectively, and top-bottom inequality, measured as the 90-10 income ratios. The first aspect of financialization is credit expansion or the quantity of credit extended to private-sector enterprises relative to a country's economic production. There have been few studies of the impact of credit expansion on income inequality, and the results have been mixed. According to Beck, Demirgüç-Kunt, and Levine (2004), credit granted to households raised the earnings of the poor, resulting in less income inequality. Flaherty (2015) discovered a positive but insignificant influence on the top 1% of income. Canavire-Bacarreza and Rioja (2008) discovered that in Latin America, credit expansion improved income in the top three quartiles but had no effect on the bottom quartile. Therefore, credit expansion will exacerbate disparities in disposable income, upper-tail inequality, and top-bottom inequality. It is unclear how this will affect lower-tail inequality. The second facet of financialization, the finance, insurance, and real estate (FIRE) employment, focuses on the increasing proportion of workers in the finance, insurance, and real estate industries, as well as secondary workers who supply extra services to these workers in market-based, financialized economies (Lapavistas, 2014). In both cross-national (Van Arnum and Naples, 2013; Assa, 2012) and US-based analyses, FIRE employment is connected with more significant income disparity (Moller, Anderson, and Nielsen, 2009). The proportion of people employed in FIRE industries will raise disposable income disparity, as well as upper-tail, lower-tail, and top-bottom inequality.

Consequently, in chapter 5, this research examines the relationship between neoliberalism, financialization, and four indicators of income inequality by asking:

- Whether the neoliberal state increases the Gini Index of equivalized disposable household Income.
- Whether the neoliberal state increases the upper-tail inequality, lower tail inequality, and top-bottom inequality?
- Whether the percent of workers employed in FIRE industries increase the Gini Index of equivalized disposable household Income?
- Whether the percentage of workers employed in FIRE industries increase the upper-tail inequality, lower-tail inequality, and top-bottom inequality?
- Whether the share of domestic credit provided to the private sector increases the Gini Index of equivalized disposable household Income?
- Whether the share of domestic credit provided to the private sector increases the upper-tail inequality, lower tail inequality, and top-bottom inequality?
- How do the effects of neoliberalism and financialization on income inequality differ in 14 OECD countries, neoliberal countries, Nordic countries, and social-corporatist countries?

1.2 The thesis into context: why income inequality?

1.2.1 Some Definitions.

1.2.1.1 Inequality.

Inequality is an ongoing problem and a major source of worry. Inequality is becoming a hot topic in public policy discussions. Widening income inequality has been named the "defining challenge of our time" by former US President Barack Obama (Dabla-Norris et al., 2015).

Although income inequality has risen in most advanced, emerging markets, and developing countries, there is still no consensus on what is causing it. Inequality is a serious problem on its own and has implications for economics, politics, and demographics. "The outstanding faults of the economic society in which we live are its failure to provide for full employment and its arbitrary and inequitable distribution of wealth and incomes," according to Keynes (1936, p. 372). Growing income/wealth disparities exacerbate concerns about a lack of opportunity and its negative socioeconomic/political consequences (Stiglitz, 2013). On the other hand, Lucas (2004) views the most appealing and, in his opinion, most dangerous of the destructive trends to sound economics as a focus on distributional issues.

Growing income and wealth disparities, particularly within developed countries, have highlighted worries about their economic and social implications (Piketty, 2014; Atkinson,

2015). After years of obscurity, income inequality has emerged as a major concern. The phenomenal success of Thomas Piketty's book in the developed world in 2014 is a vivid example. Unprecedented poverty reduction and a growing middle class co-exist with highly unequal income distributions—as in India or China—or consistently high inequality—as in Latin America. One plausible explanation for these dynamics could be found in a hypothesis that suggests an inverted U relationship between income inequality and GDP per capita, or a Kuznets curve, as it is known. He argued that market forces increase and subsequently decrease economic inequality as an economy develops (Kuznets, 1955). In other words, it is not surprising to see rising inequality in countries in the early stages of development when growth is high and persistent. In the 1950s, this was the case in South Korea, and since the 1990s, it has been the case in China.

Similarly, as most workers enter medium-high productivity industries and a welfare system is implemented, it would be anticipated that countries in the middle-income group will stabilize inequality before beginning to reduce it. This is the case for several Latin American countries, as well as Malaysia and Turkey in Asia (Turegano and Herrero, 2018). Finally, the Kuznets curve predicts that as countries attain high-income levels, income inequality will gradually decrease. This was the case for Western economies from wartime until the 1970s and 1980s. However, recent developments have revealed flaws in Kuznets' argument. In many developed countries, income distribution appears to have worsened in recent decades. When looking at the

relationship between GDP per capita and inequality, some emerging economies like Vietnam or Bangladesh, on the other hand, show considerable deviations from the Kuznets curve (the increase in inequality along with the rise in real per capita GNI) (Turegano and Herrero, 2018).

Table 1 shows the Mean, Max, Min, and Std. Dev. of 48 countries' Gini Index from 1993 to 2017.

COUNTRY	Mean	Max	Min.	Std. Dev.	Obs.
Denmark	23.844	26.2	22	1.402106	25
Finland	24.728	25.9	21.9	1.210207	25
Sweden	24.828	26.3	23	0.962427	25
Norway	24.996	26.4	23.3	0.765114	25
Netherlands	25.972	26.7	24.5	0.614085	25
Luxembourg	27.048	29.7	24.5	1.452905	25
Austria	27.384	28	26.6	0.493018	25
Hungary	27.404	27.9	26.5	0.348186	25
Germany	27.64	29.4	25.7	1.42741	25
France	28.84	30.1	27.9	0.789515	25
Switzerland	29.236	30.2	28	0.672607	25

Poland	30.06	31.9	27.3	1.216553	25
Canada	30.808	31.7	28.9	0.798394	25
Japan	30.987	32.258	28.9	0.92439	25
Korea, Rep.	31.176	33.8	29.3	1.042945	25
Australia	31.844	32.9	29.5	1.007092	25
Spain	31.936	33.9	29.6	1.290633	25
New Zealand	32.432	33	31.9	0.355575	25
Greece	33.196	34.5	31.7	0.7558	25
United Kingdom	33.864	34.4	33.3	0.295635	25
Pakistan	34.192	34.4	34	0.128841	25
Israel	35.24	37	32	1.498332	25
Jordan	37.392	39.2	35.688	1.085941	25
Oman	37.488	38.017	36.915	0.336748	25
United States	37.592	38.5	36.4	0.640911	25
Mauritius	37.94	38.3	37.6	0.282843	25
Singapore	38.708	39.3	37.9	0.385054	25
China	40.188	43	34.5	2.825379	25

Tunisia	40.418	41.5	39.035	0.860945	25
Turkey	40.988	42.4	39.5	1.052109	25
Morocco	41.183	41.3	41	0.116558	25
Egypt, Arab Rep.	41.388	42.8	40.1	0.67843	25
Malaysia	41.744	43.6	40	1.221365	25
Philippines	42.184	43	40.9	0.647868	25
Argentina	42.288	46.4	37.5	3.196263	25
Thailand	42.348	44.5	39.3	1.733763	25
Nigeria	43.532	43.9	42.9	0.283901	25
Indonesia	43.772	46.8	41.7	1.942619	25
India	46.488	50.000	41.3	3.071456	25
Mexico	46.888	49.3	43.1	1.998816	25
Sri Lanka	47.031	48.591	44	1.452396	25
Chile	48.532	50.7	45.6	1.951222	25
Panama	49.228	51.4	46	1.976428	25
Peru	49.684	52.4	44.7	3.02623	25
Brazil	50.316	54.1	46.3	2.849515	25

Saudi Arabia	50.4353	50.805	50.1	0.228934	25
Colombia	51.576	54.3	47.7	1.704719	25
South Africa	62.468	63.6	60.8	0.916842	25
Average of All	37.488	63.6	21.9	8.90801	1200

Table 1: Mean, Max, Min, and Std. Dev. of 48 countries' Gini Index 1993 - 2017

Sources: World Income Inequality Database (WIID); authors' calculations.

1.2.1.2 Neoliberalism and Financialization.

Financialization is a topic that has gotten a lot of attention since the turn of the century because of the growing financial sector and income disparity. Financial development has entered a new stage, especially after the financial crisis of 2008, and the banking sector has become a major and vital sector in most economies. Financialization can be described from a variety of viewpoints, including economics, political science, and sociology (Karwowski, Shabani, and Stockhammer 2017). Financialization is a phrase that has been used to characterize the evolution of financial capitalism from 1980 to the present, during which debt-to-equity ratios have risen, and financial services have become a larger percentage of national income than other sectors. Financialization refers to the rising impact of the financial sector, financial activities, and financial instruments in

macroeconomics and microeconomics. From a macroeconomic perspective, financialization is primarily considered and measured in terms of financial aggregates and financial structures. Microeconomics experts, on the other hand, define financial activity in non-financial firms and individual households (Qi, 2019).

Financialization is an economic process in which exchange is facilitated by using financial instruments as intermediaries. Financialization may make it easier for people to rationalize their assets and income flow by allowing real goods, services, and risks to be easily exchanged for currency. Researchers describe economic financialization at the macroeconomic level primarily from the perspectives of scale activities, income distribution, financial sector and non-financial sector connections, and capital accumulation. Economic financialization refers to the large-scale growth of income in financial services or derivatives markets, the split of income distribution between the financial sector, and the process of gradually surpassing other economic sectors from the standpoint of the income distribution (Anseeuw, Roda, Ducastel, and Kamaruddin, 2017; Palley, 2013). Economic financialization is another form of capital accumulation from the standpoint of capital accumulation. The existing capital accumulation process is slowly shifting to the financial sector. “a pattern of accumulation in which profits accrue primarily through financial channels rather than through trade and commodity production” (Krippner, 2005, p.174). Epstein (2005, p.3) defines it as “the increasing role of financial motives, financial markets,

financial actors, and financial institutions in the operation of the domestic and international economies.”

Palley (2013, p.1) provides a simple definition, "financialization corresponds to financial neoliberalism, which is characterized by the domination of the macroeconomy and economic policy by financial sector interests. According to this definition, financialization is a particular form of neoliberalism. That means neoliberalism is the driving force behind financialization, and the latter cannot be understood without an understanding of the former." Also, Palley (2013, p.2) argues, “Financialization (financial neoliberalism) singles out financial markets and gives them special elevated standing.”

From a historical viewpoint, it will be described how neoliberalism evolved from the intellectual endeavor of the Mont Pèlerin Society, "the Neoliberal Thought Collective." The Mont Pèlerin Society (MPS) is composed of economists, philosophers, historians, intellectuals, and business executives from around the world. Chapter 2 discusses the influence neoliberal financialization has had on income disparity. Neoliberal financialization facilitates unequal capital accumulation and creates conditions that exacerbate income inequality. The lower capital share of national income pushed the ruling classes to implement neoliberal policies, which would eventually evolve into financialization as a new method of capital accumulation. In this regard, it will be necessary to explain the new global financial architecture and the reasons that led to its creation to comprehend the interests of the national and transnational capitalist classes that support it.

1.2.1.3 **Financial Development.**

Often, one side does not have enough information about the other to make the correct decision. Lack of knowledge causes issues in the financial system on two levels: before and after the transaction is completed. As a result of asymmetric information, investors may be exposed to adverse selection and moral hazard concerns. Adverse selection is an issue that arises when asymmetric information is available before a transaction. People with bad credit who are actively looking for a loan are the ones who are most likely to be chosen. Because adverse selection makes it more probable that lenders will offer loans to people with terrible credit, lenders may opt not to issue any loans at all, even if there are good credit risks in the market. A moral hazard is an issue that arises from asymmetric information after a transaction has taken place. In financial markets, "moral hazard" refers to the risk (hazard) that the borrower would engage in behaviors that are undesirable (immoral) to the lender because they reduce the likelihood of the loan being repaid. It is costly to process information about future investments. There are costs involved with transacting commodities, services, and financial instruments, as well as costs associated with writing, interpreting, and administering contracts. These market imperfections in the economy stifle the flow of money from society's savings to those with the right plans and programs, slowing economic growth and lowering living standards. For those with excess funds to lend, transaction costs, or the time and money spent on financial transactions, are a major concern. The nature of these costs—these market imperfections—creates opportunities for

financial contracts, markets, and intermediaries to arise. Because they have established expertise in minimizing transaction costs and their vast size, financial intermediaries can take advantage of economies of scale or the reduction in transaction costs per dollar of transactions as the size (scale) of transactions grows. Because a financial intermediary's transaction costs are low, it may offer liquidity services to its clients, which makes it simpler for them to undertake transactions. Incentivized by profit, financial instruments and institutions are being created to mitigate the consequences of market imperfections. Another advantage of financial institutions' low transaction costs is that they may assist investors in lowering their risk exposure—that is, the uncertainty about the returns they will get on their assets. Financial intermediaries are crucial in the economy because they offer liquidity, encourage risk-sharing, and address information difficulties, allowing small savers and borrowers to profit from financial markets (Mishkin and Eakins, 2006).

Furthermore, governments also offer a wide range of services—from legal and accounting systems to government-owned banks—all with the stated intention of minimizing imperfections and improving resource allocation. As a result, when financial instruments, markets, and intermediaries diminish the impacts of imperfect information, limited enforcement, and transaction costs, financial growth happens. Credit registries, for example, have helped to enhance the acquisition and sharing of information about future borrowers, resulting in better capital allocation and beneficial impacts on economic development. Economies with strong legal

and regulatory frameworks, for example, have encouraged the development of stock and bond markets, allowing investors to maintain more diversified portfolios than they do in the absence of efficient financial markets. Čihá, Demirgüç-Kunt, Feyen & Levine (2012) defined financial development as improvements in the quality of five key financial functions:

“(a) producing and processing information about possible investments and allocating capital based on these assessments; (b) monitoring individuals and firms and exerting corporate governance after allocating capital; (c) facilitating the trading, diversification, and management of risk; (d) mobilizing and pooling savings; and (e) easing the exchange of goods, services, and financial instruments.”

The definition of financial development is summarised by Sahay, Cihak, N'Diaye, Barajas, Ayala Pena, Bi, Gao, Kyobe, Nguyen, Saborowski, Svirydzenka, and Yousefi (2015):

“Financial development increases a country’s resilience and boosts economic growth. It mobilizes savings, promotes information sharing, improves resource allocation, and facilitates diversification and management of risk. It also promotes financial stability to the extent that deep and liquid financial systems with diverse instruments help dampen the impact of shocks.”

1.2.1.4 **Financial inclusion.**

Financial inclusion is a relatively new concept. It refers to a procedure that assures that all participants of an economy have easy access to and use the formal financial system (Sarma, 2008). A financially inclusive system has a number of merits. It allows for more effective use of productive resources, potentially lowering capital costs. Furthermore, having access to qualified financial services can significantly improve finance management on a day-to-day basis. An inclusive financial system is being able to obtain credit when one needs it at a fair cost, being able to obtain insurance of the type that is relevant, and being able to save for a rainy day appropriately. As a result, an all-inclusive financial system improves efficiency and welfare by facilitating a wide range of efficient financial services and providing avenues for secure and safe saving practices (Sarma, 2008). World Bank (2021) defines FI as “Financial inclusion means that individuals and businesses have access to useful and affordable financial products and services that meet their needs – transactions, payments, savings, credit, and insurance – delivered responsibly and sustainably.” Cámara and Tuesta (2014) describe an inclusive financial system as one that “maximizes usage and access while minimizing involuntary financial exclusion.”

Financial systems that work well serve an essential service by providing people with various savings, credit, payment, and risk management options. A well-functioning financial system is one of the most critical aspects of every country's economy. A well-functioning financial system allocates resources based on the project's and entrepreneur's expected success, not on the

entrepreneur's accrued wealth and social ties (Čihák et al., 2012). A well-functioning financial system that overcomes market frictions would be able to offer financial services effectively to a broader spectrum of businesses and families, rather than just big corporations and wealthy people. As a result, moving beyond financial depth by using indices of financial access—the degree to which the general population may access financial services—helps develop valid proxies of financial development. Both financial institutions and financial markets are investigated, as with the other measures (Čihák et al., 2012).

Researchers, governments, and policymakers are concerned about how to evaluate financial inclusion. To date, financial inclusion has been primarily measured through access to and using formal financial services, which has been done using supply-side aggregate data (Honohan, 2007; Sarma, 2008; Chakravarty and Pal, 2010). At the individual level, the study of Demirgüç-Kunt and Klapper (2013), based on demand-side data, focuses on various usage- and barriers-related indicators individually. Financial inclusion research is critical for society since the effects of financial exclusion can be highly detrimental.

Financial exclusion can have a variety of characteristics. Price can lead to some people being shut out of the financial system because they cannot pay back loans or fees. One element also is the access restriction due to risk management measures that may exclude certain individuals. Furthermore, financial institutions can effectively exclude low-income customers through focused marketing primarily on higher-income customers. Lack of documentation is another

possible cause of financial exclusion. Because of their experiences, beliefs, and views, some people may decide not to participate in the financial system. Due to a lack of collateral, many small businesses and low-income individuals have been financially disadvantaged. Due to difficulty obtaining credit or obtaining credit from the informal sector at extremely high-interest rates, financial exclusion may result in lower investment (Beck et al., 2004, Levine, 2005, Galor and Zeira, 1993, Honohan, 2004).

1.2.1.5 Financial Efficiency.

Fostering and maintaining economic growth requires a well-functioning financial system. Since financial intermediaries assist channel funds from lender-savers to those with productive investment possibilities, financial intermediaries play a critical role in promoting economic efficiency (Mishkin and Eakins, 2006). An efficient financial system allows economic resources to be allocated to their greatest use across time and geography without burdening consumers and enterprises with needless expenditures (or 'rents'). An efficient financial system allows savers and borrowers to share risks in a way that benefits rather than hurts the economy. An inefficient financial system, on the other hand, can stifle economic growth by imposing needless expenses on people and firms, distorting decision-making processes, and misallocating resources over time (Wheeler, 2014).

There are several approaches for determining efficiency. Because none of them are entirely satisfactory due to methodological and data collection concerns, it is preferable to consider data from various sources. Efficiency is calculated mainly for intermediaries to determine the cost of credit intermediation. Overhead costs to total assets, net interest margin, lending-deposits spread, non-interest income to total income, and cost-to-income ratio are all efficiency indicators for financial institutions (Čihák et al., 2012). It is possible to calculate efficiency indices based on data envelopment analysis and other more complex measurements for a subset of countries (Angelidis and Lyroudi, 2006).

Regarding financial markets, efficiency measurements are mainly concerned with measuring transactions. The turnover ratio, or the ratio of turnover to capitalization in the stock market, is a basic indicator of efficiency in the stock market. The idea behind employing this variable is that the greater turnover (liquidity), the more efficient the market is. The tightness of the bid-ask spread and the turnover ratio are the bond market's most widely used variables (Čihák et al., 2012). In theory, financial development should boost growth by increasing capital allocation efficiency and easing borrowing restrictions (Levine, 2005). This, however, ignores the question of who benefits from the expansion facilitated by financial development. Furthermore, the relationship between different types of financial development and inequality is poorly understood.

1.2.1.6 Financial Stability.

Financial stability can be defined in a variety of ways. The World Bank (2021) defines financial stability as follows:

“A stable financial system is capable of efficiently allocating resources, assessing and managing financial risks, maintaining employment levels close to the economy’s natural rate, and eliminating relative price movements of real or financial assets that will affect monetary stability or employment levels. A financial system is in a range of stability when it dissipates financial imbalances that arise endogenously or as a result of significant adverse and unforeseen events. In stability, the system will absorb the shocks primarily via self-corrective mechanisms, preventing adverse events from having a disruptive effect on the real economy or other financial systems. Financial stability is paramount for economic growth, as most transactions in the real economy are made through the financial system.”

Financial inclusion can affect financial stability in both positive and negative ways.

Diversification of bank assets, higher deposit base stability, and increased monetary policy transmission are all good influences, while lower loan standards, bank reputation risk, and insufficient regulations are all negative influences (Ratnawati, 2020). According to Neaime and Gaysse (2018), Ahamed and Mallick (2019), and Pham and Doan (2020), increased financial

inclusion leads to financial stability. There is a large body of knowledge on measuring systemic risk, stress tests, and other financial stability instruments. Demirgüç-Kunt, Detragiache, and Tressel (2008); Čihák and Hesse (2010) have all used the z-score to assess the soundness of particular financial institutions. The z-score is calculated as $z \equiv (k+\mu)/\sigma$, where k represents equity capital as a percentage of assets, μ represents return as a percentage of assets, and σ represents the standard deviation of return on assets as a proxy for return volatility (Beck, Demirgüç-Kunt, Levine, 2007).

1.2.1.7 **Financial Depth (Size).**

Gurley and Shaw (1955, 1967) coined the term "financial deepening" to describe a wide range of changes in a financial structure that accompany the economic expansion. Credit constraints are decreasing, external funding is being used more intensively, there are fewer credit market distortions, and overall financial activity is increasing. There is a positive association between financial sector activity and income levels, according to available cross-country evidence (Chakraborty, 2019). As one moves from poorer to richer countries, financial intermediaries tend to grow in size (as measured by total assets or liabilities relative to GDP). The same is true for markets in tradeable instruments such as equities and bonds (Demirgüç-Kunt and Levine, 1996). Bank-finance evolution, on the other hand, varies from market-finance evolution in a significant

way. Firms rely more heavily on bank debt rather than equity in countries with less established financial markets, and equity finance only substitutes for bank finance in adequately developed markets (Demirgüç-Kunt and Maksimovic, 1996).

Conceptually, the term "financial depth" is commonly understood to mean:

- Agents and sectors are able to make decisions for savings and investment using a variety of financial markets, including those with long maturities (access).
- Financial intermediaries and markets are able to deploy larger volumes of capital to manage higher levels of turnover without requiring significant price changes in assets. (market liquidity).
- The financial sector has the ability to develop a diverse portfolio of assets for risk-sharing purposes (hedging or diversification).

To put it another way, deep markets allow savers to invest in a diverse range of high-quality investing and risk-sharing instruments, and borrowers can access a diverse range of lending and risk-management instruments (King and Levine, 1993; Rajan and Zingales, 1998). Private credit, defined as deposit money bank credit to the private sector as a percentage of GDP, is a variable that has gotten a lot of attention in the empirical literature on financial development for financial institutions (Čihák et al., 2012). There is a large body of evidence indicating the link between

financial depth, as measured by private sector credit to GDP, and long-term economic growth and poverty alleviation (see, for example, Demirgüç-Kunt and Levine, 2008).

The difference between use and access is that use refers to the use of resources, while access refers to the provision of financial services at a "reasonable cost." As a result, access will still be greater than usage. As previously stated, financial depth and access will vary. While it is true that deeper financial systems have greater access, this is not always the case. Honohan (2007) and Claessens and Feijen (2006) also suggest that access to financial resources may be highly unequal. More than 90% of households in higher-income countries use financial services. In developing countries, poorer people have lower access to retail banking facilities (Honohan, 2007). Wang, Marsh, Goyal, Raman, & Hannan (2011) argue that financial deepening in emerging markets could have a significant positive impact on these economies. Wang et al. (2011) found that deepening is linked to a lower frequency and expense of crises, as well as a better ability to handle unpredictable capital flows. Sahay et al. (2015) show that most emerging markets will still benefit from more financial progress regarding growth and stability. Deep financial systems do not necessarily have high levels of financial access, and highly efficient financial systems are not necessarily more stable than less efficient ones. Each of these characteristics is linked to aspects of broader socioeconomic growth, and each is, in turn, connected to financial sector policies and other elements of the enabling financial system (Levine, 2005). Cross-country regressions strongly demonstrate a positive and strong

relationship between financial depth and economic growth (King and Levine, 1993). The rate of economic development is closely related to the exchange of ownership claims on companies in a given economy, according to previous research by Levine and Zervos (1998).

1.2.1.8 Financial Liberalization.

The government regulates financial markets for two main reasons: to give investors information and to assure the soundness of the financial system. By raising the quantity of information available to investors, government regulation can lessen adverse selection and moral hazard concerns in financial markets and boost their efficiency. The elements of the soundness of financial intermediaries are restrictions on entry, disclosure, restrictions on assets and activities, deposit insurance, limits on competition, and restrictions on interest rates (Mishkin and Eakins, 2006). The removal of government intervention from financial markets is known as financial liberalization. Financial liberalization indicates that credit allocation is determined by markets rather than governments. Financial liberalization, according to Abiad, Oomes, and Ueda (2008), is associated with lower variation in expected marginal returns since it equalizes access to credit. They use a measure of capital allocation efficiency across firms to demonstrate the "quality effect" of financial liberalization. The measure is essentially the variation in expected investment returns. If financial liberalization improves efficiency, this variation should be reduced when

credit allocation is determined by markets rather than governments. Financial liberalization is summarised by Abiad, Detragiache, and Tressel (2010) as de jure changes in credit controls, interest rate controls, bank entry barriers, regulations, privatization, and restrictions on international financial transactions, whereas financial development is primarily measured by credit to the private sector as a percentage of GDP. Eliminating the restrictions on bank interest rate ceilings, compulsory reserve requirements, barriers to entry, particularly foreign financial intermediaries, and credit allocation decisions decreases the government's interference in financial markets, allows state-owned banks to be privatized, introduces currency convertibility on the capital account, enhances prudential regulation, and boosts local stock markets. Financial liberalization refers to the government's involvement being reduced and the role of financial markets being expanded, whilst financial development refers to the volume of financial activity being increased (Abiad et al., 2008).

1.2.1.9 Financial Structure.

Bank-based and market-based intermediation are present in all financial systems. However, financial structure - the specific mix of the two intermediation channels – differs across countries. Savings are channeled into investment in diverse ways by banks and markets. Intermediation is done mainly on the balance sheets of banks. They often accept money as deposits and especially provide capital in the form of loans through close relations with borrowers. Markets, on the other

hand, keep savers and investors at arm's length by serving as a venue for the issuance and trading of debt and equity instruments.

The relevance of the financial sector for economic development has been established by a growing body of literature. However, differing viewpoints exist on the ideal financial structure for economic development. Financial intermediaries and markets are both vital for economic growth, according to several studies (Boyd and Smith 1998, Levine and Zervos 1998). Others, such as Demirgüç-Kunt and Levine (1996) and Levine (2002), believe that financial structure is irrelevant and that the entire provision of financial services is crucial for growth. Bank-based and capital market-based financial systems are the two primary financial structures discussed in the literature. The impact of various financial arrangements on the economy and growth is a topic of continuous theoretical and empirical discussion. Some scholars believe that the overall level of financial development - the quantity and quality of financial instruments, markets, and intermediaries - is a more essential determinant of growth than the structure of the financial system.

Others prefer arrangements that are based on banks or markets. Figure 1 depicts the mean size of 48 countries' financial structures from 1993 to 2017. It is defined as the log of the ratio of Market Capitalization and Bank Credit as a proxy for the relative importance of banks and markets. It also depicts the size of stock markets in relation to the size of the banking sector. If the ratio is more than 0, the financial structure is market-based, while if it is less than 0, the financial structure is bank-based. More detail is scribed in chapter 4. The highest proxy for the market-based financial structure among the 48 nations is held by South Africa, the United States, and Canada, while the

highest proxy for the bank-based financial system is held by Austria, Tunisia, Panama, and New Zealand.

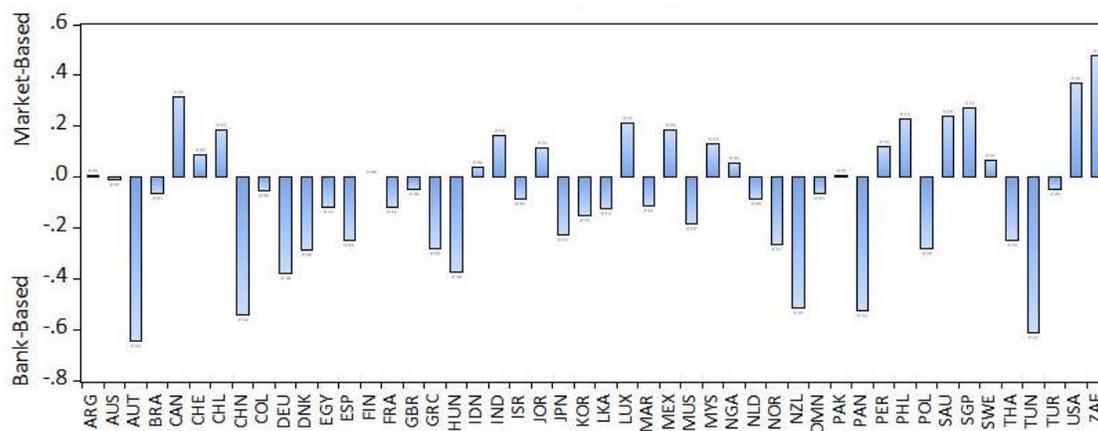


Figure 1: Mean of Structure Size by Country

ARG = Argentina; AUS = Australia; AUT = Austria; BRA = Brazil; CHL =Chile; CHN = China; COL = Colombia; EGY = Egypt, Arab Rep.; FRA = France; DEU = Germany; GRC = Greece; HUN = Hungary; IND = India; IDN = Indonesia; ISR = Israel; JPN = Japan; JOR = Jordan; KOR = Korea, Rep.; LUX = Luxembourg; MYS = Malaysia; MUS =Mauritius; MEX =Mexico; MAR = Morocco; NLD = Netherlands; NZL = New Zealand; NGA = Nigeria; NOR = Norway; OMN = Oman; PAK = Pakistan; PAN = Panama; PER = Peru; PHL = Philippines; POL = Poland; SAU = Saudi Arabia; SGP =

Singapore; ZAF = South Africa; ESP = Spain; LKA = Sri Lanka; CHE = Switzerland; THA = Thailand; TUN = Tunisia; TUR = Turkey; USA = United States; SWE = Sweden; GBR = United Kingdom; FIN = Finland; DNK = Denmark; CAN = Canada

Sources: Beck, Demirgüç-Kunt, & Levine, 2000; World Bank, Global Financial Development Database; authors' calculations.

1.3 Why is inequality so important?

Income inequality and wealth imbalance are widely acknowledged to be major social, political, and economic issues (Wilkinson and Pickett, 2009; Stiglitz, 2013; Atkinson, 2015). A reasonable degree of inequality is thought to stimulate economic progress and general welfare throughout society. While Wade (2004) refutes orthodox economists' claims about the beneficial incentive effects of income inequality on competitiveness, arguing that only moderate, Scandinavian-style levels of income inequality should be accepted. Growing inequities strengthen the rich's advantages while further disadvantaging the poor, resulting in economic disparity in the next generation and producing a "vicious spiral." Inequality is vital because it can offer energy to human society but can also endanger established norms and social and financial stability if allowed to become extreme. When taken to extremes, however, the forces of jealousy and fear it harnesses can destabilize the social norms and sanctions that keep society in check. Income equality even is argued to be more critical for economic development than government corruption, foreign debt, free trade, and foreign investments (Berg and Ostry, 2011). Berg and Ostry (2011) argue that low-income inequality and growth duration have a big and statistically

significant relationship. Inequality is one factor that has the greatest economic impact on expected spell duration. It is also one of the most robust variables, as it is statistically significant across all samples. During the run-up to and especially following the global financial crisis, many scholars and commentators looked into the relationship between income disparity and economic performance. Berg and Ostry (2011) investigated the impact of various factors thought to be beneficial to economic performance on economic growth. They discovered that once a country entered a growth phase, income distribution was by far the most crucial aspect in determining how long that increase lasted. The more equal the country's distribution during its growth phase, the longer the duration of growth.

The 2030 United Nations agenda aims to eliminate income inequality for the first time within the context of internationally agreed development goals. Since 1990, income inequality has risen in most industrialized nations and several middle-income countries, such as China and India (United Nations, 2020). More than two-thirds of the world's population (71%) lives in countries where inequality has increased. However, rising inequality is not a universal phenomenon. Over the previous two decades, the Gini coefficient of income inequality has decreased in most Latin American and Caribbean countries, as well as some African and Asian countries (Figure 11 & 12). Despite development, income and wealth are becoming increasingly concentrated at the top in certain countries. With data from 1990 to 2015, the percentage of global income flowing to the wealthiest 1% of the population grew in 46 of 57 countries and areas. Meanwhile, in all 92

countries with data, the poorest 40% earned less than 25% of total income (Rosa, Dossey, Watson, Beck, and Upvall, 2019).

The effect of economic inequality on institutions is highlighted by Savoia and McKay (2010). They suggest that the level of inequality is an important political economics component in the relationship between political systems and economic growth. Their findings are in line with comparative historical analysis, which shows that inequality hampers the establishment of robust liberal institutions. This occurs due to the emergence of exploitative institutions and the rent-seeking conduct of political and commercial elites interested in skewed income and wealth distribution as well as oligarchic, rather than democratic, politics.

To tackle the problem of reducing inequality by eliminating severe income disparities, it is helpful to understand how the well-paid become exceedingly well-paid and why the situation appears to be deteriorating. Hodgson (2013) draws together different lines of research into the genesis, scope, and spread of extreme income. It considers the following factors influencing income inequality: credit expansion, asset prices, household and corporate debt, remuneration practices in finance and other sectors, peer group pressure, and political interventions. His research lays out a framework for understanding how two potentially self-reinforcing circuits of money and wealth on the one hand, and debt and suffering on the other, are connected to intensify inequality through behavior driven by jealousy and the desire to imitate peers and how the ensuing anxiety and dread must flow through to policy decisions that can either decrease or

exacerbate the problem. The nature of the causal relationship between credit production and asset values, as well as the relevance of social norms impacting remuneration and desirable levels of consumption, are recognized as critical interactions within the process. He explains how the current banking and financial system fosters the perversion of socially desirable behavioral qualities like aspiration and emulation into greed and jealousy, as well as a socially harmful separation of the majority from an ever affluent and powerful few.

Hodgson (2013) explains that because the injection of more money into the markets for financial assets and real estate drives the Money Circuit (Blair, 2010), the prices of these assets rise. Those who invest in these marketplaces get wealthy as prices rise. They are convinced to ascribe their growing riches to the skill of people in charge of their investments and to reward them appropriately. During a prolonged period of rising prices, the incomes of certain financial managers, bolstered by the growing amount of the funds they manage, accelerate away from those of the majority of people. Borrowing to speculate on increasing asset values becomes advantageous as asset prices continue to rise. Banks and other lenders will even accept that the assets purchased with the loans would serve as collateral for the debts. Investment funds that are bolstered (leveraged) with money borrowed appear to regularly deliver greater returns, for which investors are willing to pay large performance incentives, increasing fund managers' incomes even more. The rising value of a company's stock lowers the cost of capital, allowing businesses to make more lucrative investments. Executive directors believe that they should be credited for

their firms' increasing fortunes and paid appropriately. Members of the board of directors point to the means created by high earners in the financial sector.

Compliant pay committees agree, and large amounts of company revenues are set aside for senior executive salaries and incentives. According to Levy and Temin (2007), for the first 35 years following WWII, economic policy in the United States was guided by concerns for social cohesiveness, as seen by government monitoring, collective bargaining, equality and moderation standards, and high tax rates on top incomes. Corporate investment returns can be enhanced (leveraged) by borrowing rather than issuing and selling additional shares. Successful debt-financed investments have a considerably stronger influence on earnings per share and, as a result, on senior executive compensation. The Money Circuit is given a new spin by this "financialization" of corporate CEO compensation. With corporate executives joining fund managers and financial traders in the extreme income bracket, the extremely wealthy are gaining a larger part of the national income.

The growth in severe wealth disparity corresponded with a surge of deregulation and financial innovation, signaling a shift in government views away from social responsibility and moderation and toward individualistic acquisition (Levy and Temin, 2007). The highly wealthy's lifestyles then serve as models for others in their social circles. Others who consider themselves to be their peers will devote more of their earnings to copying them as their wealth grows. To assist fund their increased spending, some will inevitably turn to borrowing, thus boosting the

demand for debt. As the exceedingly wealthy take a larger percentage of national income, there is less left for everyone else, and real incomes for the majority of households begin to stagnate or even decrease. Circuit – Debt is started by this impact (Kumhof and Rancière, 2010). As these families struggle to achieve or sustain their targeted levels of consumption, they borrow to fill the gap. As they get more indebted, a larger part of their residual income is consumed by debt charges and interest. Banks and other lenders utilize a portion of these funds to pay interest to their depositors. Loan interest and fees, on the other hand, provide wages and incentives to bank and finance business employees.

Some of them are extremely well compensated and pay dividends to stockholders, the majority of which are held in managed funds from which managers get their fees. Borrowers' payments of interest and debt charges, therefore, primarily benefit the affluent. The Envy Linkage connects and amplifies the Money and Debt Circuits, putting increasing financial strain on the majority of households. They erect an increasingly visible and worrisome divide between the majority's life prospects and those of the exceptionally well compensated. Fear and worry increase on both sides of the divide (Hodgson, 2013).

Glaeser, Scheinkman, and Shleifer (2003) demonstrate that high inequality is detrimental to property rights and regulatory institutions because the wealth influence of local oligarchs or foreign capital prevails in any court. Economic inequality may be cemented through the following mechanisms: 1) the attainment process, in which income disparities lead to

disadvantages in education, health, and other areas; 2) growing segregation in living areas and social relations; and 3) politics, in which political power is increasingly concentrated among the wealthy (Neckerman and Torche, 2007).

Increased inequality and economic segregation are linked in cross-sectional studies of the effects of inequality on social connections. In other words, the wealthy and the poor prefer to live and work in separate districts, causing metropolitan areas to become more segregated (Massey and Fischer, 2003; Mayer, 2001). Inequality also reduces social capital (Alesina and La Ferrara, 2002), and nations with significant income inequality have lower levels of trust and social cohesiveness (Costa and Kahn, 2003). Peet (2011) claims in his study on finance capitalism that when too much national income is grabbed by too few people, too much wealth is removed from the actual economy and accumulated amongst too few people, which leads to instability, recession, and depression. Furthermore, even in countries that are apparently democracies, great income concentration aids the capitalist elite in buying and controlling the government and the entire state apparatus.

Wilkinson and Pickett (2009) explain in their book *The Spirit Level* that numerous social problems occur even in wealthy countries, where economic growth does not assist in preventing the consequences of unequal income distribution. Inequality is a contributing factor to people living shorter and unhappier lives. Inequality has a negative impact on many elements of human existence, from life expectancy to mental health, educational achievement to violence, and

happiness to social interactions. The authors claim that this is due to a long-held assumption that economic growth should take precedence over equality. Teenage pregnancies, violence and juvenile crimes, obesity, and imprisonment are all greater in more unequal societies. Unequal civilizations are labeled "dysfunctional" and "social failures," notwithstanding their wealth. Inequality is a contributing factor to people living shorter and unhappier lives. Income inequality contributes to feelings of loneliness and anxiety, as well as excessive consumerism, which depletes world resources. The authors show substantial evidence to suggest that the income disparity between the richest and poorest 20% of the population is more important than GDP per capita. They contend that the rise in inequality was a direct cause of both the dysfunctional society and the dysfunctional economy.

To summarise, the literature study reveals that rising income disparity is linked to a slew of socio-economic and political issues. Empirical evidence shows the existence of a link between unequal societies and warped social patterns. Though this link may be indirect in some circumstances, it would be a mistake to underestimate its negative impact on a range of institutional characteristics.

1.4 The thesis's overview.

Distributional issues and associated methodological difficulties have become a fundamental concern in assessing the world's vulnerabilities in the new global economy. This introductory chapter aimed to explain why increasing income disparity is a political-economic concern. The study's goal, hypothesis, and research questions are all defined in this chapter. Moreover, the next chapter gives a quick overview of the scholarly literature on income inequality and explained the key terms used throughout the research. The remainder of the thesis is organized in the following manner:

The study's historical and theoretical basis, as well as its political economy environment, neoliberalism, are presented in chapter two. Various ideas related to financial development, financial structure, financial liberalization, and financial globalization will be discussed, and a knowledge gap in the field of study will be identified. The third chapter discusses the philosophy of the thesis, including ontology, epistemology, methodology, and interdisciplinarity. Chapter 4 examines the first empirical analysis of the impact of financial development, financial structure, and financial liberalization on income inequality using data for 48 countries between 1993 and 2017. Data and resources, as well as the research's analytical framework, methods, and research design, with an emphasis on the econometric results, are elaborated in chapters 4 and 5. Chapter 5 discusses the effects of neoliberalism and financialization on income inequality in 14 OECD countries, which include neoliberal countries, Nordic countries, and social-corporatist countries.

These countries are studied using a data set from 1980 to 2017, a time period during which both neoliberalism and financialization have been the norm. A final discussion is also offered in chapter 5, where the result of the research and its components are developed. Chapter 6 concludes the study.

Chapter 2

2 Literature Review.

2.1.1 Neoliberalism's aspects of political economy.

From the heterodox point of view, the roots of neoliberal ideology, its central doctrinal pillars, and the strategies that made the ideology hegemonic will be discussed in this subsection. The viewpoint is that the rise of neoliberalism is the political-economic framework in which the financialization-income inequality nexus takes shape. Neoliberalism, as a word and an idea, has a lengthy history in twentieth-century political and economic thought. The book *Old and New Economic Liberalism*, written in 1921 by the well-known Swedish economist Eli F. Heckscher, is probably the first venture into a twentieth-century rethinking of the difficulties of securing a free market and adequately redefining the state's function. The last days of August 1938 may be remembered as the birth date of neoliberalism when a group of twenty-five thinkers from Europe and the United States gathered in Paris for a colloquium to discuss American columnist Walter Lippmann's book *The Good Society* (Biebricher, 2018). The back-and-forth discussions of ideas revolving around the potential reformation of capitalism at the time slowly shaped the framework today historians would refer to as neoliberalism. The colloquium was postponed

because of World War II until April 1947, when sixty people convened in Switzerland to create the Mont Pèlerin Society, which had the intention of developing a more polished form of capitalism. Heckscher was among the second group of people invited to join the neoliberal Mont Pèlerin Society in 1947. There were at least two important motivations for the establishment of the Mont Pèlerin Society.

To begin with, the liberals felt alone. Second, some liberalists thought that classical liberalism had failed due to debilitating conceptual defects and that the only way to identify and correct them was to retreat into a closed discussion group of like-minded intellectuals. In 1951, by the time the group had expanded to 172 members, there was an attempt to propose the newly developed ideas of the group's western economists, political scientists, and philosophers. Friedrich Hayek, Frank Knight, Karl Popper, Ludwig von Mises, George Stigler, and Milton Friedman were among its founders. This society promotes freedom of expression, free market economic principles, and open society political values. Furthermore, the community is looking for methods in which free enterprise may take over many of the activities that are currently being performed by government agencies.

Meanwhile, during the great depression, John Maynard Keynes revolutionized economic thinking by challenging neoclassical economics. His ideas were not implemented until the late 1930s, and after World War II, the 30-year Keynesian era began. Dahl and Lindblom (1953), in their book *Politics, Economics, and Welfare*, argued that because both unregulated capitalism

and communism had failed, it was critical to put together the correct mix of state, market, and democratic institutions to ensure peace and well-being. As a result, domestic politics in many advanced capitalist countries began to revolve around establishing institutions and laws to provide a compromise between capital and labor. Mainstream scholars describe Keynes' proposal as the unique combination of "embedded liberalism" (Blyth, 2002) and "Keynesian compromise" (Isaacs, 2011).

Embedded liberalism is defined by mainstream scholars as a compromise between two desirable but somewhat incompatible objectives. The objectives were to re-establish free trade and to provide national governments with the freedom to offer substantial welfare programs and interfere in their economies in order to keep full employment. Keynesian compromise is a term used to describe the capitalist arrangement in which a compromise between capital and labor resulted in the calibration of national fiscal and counter-cyclical monetary policies in order to promote full employment. After the full implementation of Keynesian ideas, the economic growth model that followed can be described as a circle in which wage growth fueled aggregate demand growth. Full employment was a fundamental aspect of the features, as was a wage system that matched wage growth to productivity growth. The reasoning went like this: Wage growth was driven by productivity growth, which stimulated demand growth and resulted in full employment. This offered an incentive for investment, which resulted in increased productivity (Palley, 2013). Without oversimplifying, the Keynesian era years were marked by high growth

rates, sustained technological change, an increase in purchasing power, the development of a welfare system (particularly in health and retirement), and low unemployment rates in industrialized countries—the United States, Canada, Europe, and Japan. The tendency toward more equitable income distribution, where the economic power of the upper class was progressively constrained by the increasing strength of labor, was one of the major results of embedded liberalism in the post-World War II era. For example, in the United States, the top 1%'s share of national income plummeted from 16 percent in the pre-World War II era to less than 8% in the post-war era. It remained at that level for almost three decades, perhaps for the first time in economic history (Harvey, 2005). Despite the overall improvements made during the Keynesian era, in the 1970s, the global economy experienced a "structural crisis" as a result of a drop in the profit rate, reduced growth rates, the breakdown of the Bretton Woods system of fixed exchange rates, and "stagflation" which is characterized by high rates of unemployment and inflation.

This is when neoliberalism, a new social order, was implemented, first in the center (starting with the United Kingdom and the United States) and then progressively spreading to the periphery. When liberal ideas linked with laissez-faire capitalism were on the decline, collectivist ideas had to be resisted in order to rescue capitalism from what thinkers like Hayek saw as an existential threat. To establish a revitalized intellectual tradition capable of competing with mainstream views, liberalism had to be modernized, and its principles and ideas had to be

reinterpreted, recreated, and reoriented. Intellectuals such as Friedrich Hayek, Milton Friedman, and Lionel Robins succeeded in creating a dichotomy between collectivism and liberalism in their books, establishing neoliberalism as a liberal alternative to socialist and interventionist ideas. Classical economic liberalism's anti-collectivist principles were maintained to rescue capitalism and avert totalitarianism and economic disaster, both of which were apparently inevitable results of all kinds of collectivism and interventionism (Turner, 2007). Since the 1970s, a wave of neoliberal policies such as deregulation and privatization has been implemented all over the world (Birch and Mykhnenko, 2010). Such ideas, policies, and reforms were diametrically opposed to the post-World War II politico-economic paradigm. The success of neoliberalism was symbolized by Margaret Thatcher's election victory in the United Kingdom in 1979 and Ronald Reagan's victory in the United States in 1981 (Mirowski and Plehwe 2015). Deregulation, which means the government lessens the amount of regulation placed on economic activities such as bank entry barriers or the imposition of taxes on specific businesses, privatization, which is known as the sale of all state-owned enterprises and businesses to the private sector, free trade, reducing public expenditure and the state's withdrawal from social protection and welfare delivery, has become a common tendency in a variety of countries, ranging from former Soviet republics to high-income social democratic welfare states. These reforms occurred as a result of the prevalence of neoliberal ideology in government, the media, academia, and corporations (Miller, 2010), as well as international organizations such as the International Monetary Fund (IMF), the World Trade Organization (WTO), and the World Bank

(Peet, 2009). The IMF, the WTO, and the World Bank (often through the recruitment of educated bureaucrats from Ivy League schools) advocating "free trade," "floating exchange rates," and transnational businesses' interests. Indeed, throughout the transition from the 1970s to the 1980s, the functioning of capitalism was profoundly altered, both inside and outside developed countries. Palley (2013) argues that "After 1980, the virtuous circle Keynesian growth model was replaced by the neoliberal growth model. The key changes were (1) abandonment of the commitment to full employment, which was replaced by a focus on low inflation, and (2) severing the link between wages and productivity growth. The new growth model made credit and asset price inflation the engines of demand growth, replacing wage growth as the engine of demand growth" (p. 6).

Despite the implementation of neoliberal ideology internationally, some critics analyze neoliberalism as a politically charged movement rather than an economic school of thought. Philip Mirowski, a historian and philosopher of economic thought at the University of Notre Dame, describes Neoliberalism as a political movement that attempted to resurrect pro-market conservatism following World War II. Van Horn and Mirowski (2010) and Mirowski (2014) argue that even though neoliberals promote freedom of expression, free market economic principles, open society political values, and look for methods in which free enterprise may take over many of the activities that are currently being performed by government agencies, in practice the ideologies present themselves differently. Neoliberals are often portrayed as

proponents of laissez-faire, but their actual objective is to gain control of the state and, through that control, create market-friendly institutions and culture. Harvey (2005) acknowledges that the consequence is a neoliberal state whose ultimate purpose is to safeguard market institutions and commercial interests while simultaneously maintaining that one of the key neoliberal principles is the retreat of the state, which should be left with minimum duties. As a result, if required, governmental compulsion can be used to create markets where none previously existed.

Even though neoliberalism was bolstered by neoclassical economics, there are significant differences (Mirowski, 2005, p. 89). Mirowski explains neoclassical economics as “roughly what is taught in modern intermediate microeconomics: the maximization of utility, the definition of equilibrium as the equivalence of marginal utilities, the conception of trade as shifting commodity bundles between holders, and the notion that the market, by its nature, makes everyone better off” (Mirowski, 2005, p. 3). However, by itself, neoclassical economics says nothing about the government or politics in general. Instead, neoliberalism aimed to employ a strong government to extend free market relationships throughout the world (Mirowski 2005).

Despite the dire need for a revised version of liberalism to lead the mainstream, there were still differences in the intellectuals’ ideas. Most neoclassical economists and libertarians are inaccurately associated with the neoliberal position (Bagus, 2015). Even among the three theoretical schools that established the Mont Pèlerin Society: The Austrian school (Ludwig von Mises and Friedrich Hayek), the German variant of economic liberalism (Walter Eucken and

Wilhelm Ropke), and the Chicago school (George Stigler, Frank Knight, and Milton Friedman), there are significant disparities. In essence, the three theoretical traditions still banded together to oppose socialism and egalitarian welfare state ideologies. Some Mont Pèlerin Society founders (Hayek, Knight, and Friedman) also participated in the Free Market Study, organized by Aaron Director, a University of Chicago Law School professor, and sponsored by the right-wing Volker Fund. Emmett (2010) argues that the majority of discussion of the Chicago School in popular literature focuses on its "normative" or "ideological" character. In this sense, Chicago is best known as a proponent of laissez-faire policies and market-based solutions to public policy issues, as well as for its ties to the Reagan, Thatcher, and even Pinochet governments. Unlike some other economic schools, the Chicago School saw economics as an applied policy science. With a few exceptions, it has not been afraid to argue that its scientific findings have policy implications. They did not call this school of thought "neoliberalism," even though the phrase has been used since the end of the nineteenth century. However, neoliberalism's core values—confidence in liberty and liberal economics—brought society members together. The study group's primary objective was "the development of liberal economic policy" (Van Horn and Mirowski, 2010, p. 200), which is nearly identical to Friedman's Chicago school neoliberal doctrine: "economic freedom is an end in itself" (Friedman, 1962, p. 8). Later, Robert Hutchins, the president of the University of Chicago, hired Leo Strauss and established the Committee on Social Thought, a neoconservative intellectual hub. In this sense, the Chicago school played a key role in attempting to integrate the political elements of neoliberal ideals with neoclassical

economics' theoretical presumptions. Academic departments at various institutions (such as the Ivy League schools) gradually became controlled by neoliberals by the 1980s, with the Mont Pèlerin Society at the heart of the neoliberal thought collective.

Van Horn and Mirowski (2010) and Mirowski (2014) argue that the view of neoliberals is that the public should be eclipsed in favor of the private, as well as politics for the market and consumerism for citizenship. "Freedom" is defined as the "freedom of choice" for consumers in the marketplace and the "freedom" of corporations to pursue profit. It emphasizes that "individual freedom" and "human dignity" are linked to market freedom that ensures them. From this viewpoint, these rights are regarded as more important than social justice. At all times, capital should be allowed to move freely across national borders. International initiatives and forms of inter-state governance can be used to hold the nation-state accountable to the neoliberal agenda. Finally, they argue that neoliberals believe that inequality in income and wealth should be treasured because it promotes competition, creativity, and production.

Larner (2000) argues that the neoliberal political economy project establishes a political and socioeconomic framework for capitalism to overcome its internal and inherited flaws while continuing to accumulate capital through the use of specific strategies, most notably the shift from Keynesian welfare to a set of policies that favor markets and unfettered finance. One of the primary explaining factors was that the capital accumulation crisis of the 1970s was viewed as a serious political threat by advanced capitalist countries' economic elites, enterprises, and ruling

classes (Harvey, 2005). This subsection of the thesis reviewed neoliberalism from the heterodox school of thought as a political economy concept. The literature relevant to this assertion about the capital accumulation crisis will be investigated further in the following subsection.

2.1.2 Financialization, Capital Accumulation and Income Inequality.

It is important to describe financialization and its relationship to neoliberalism in detail. Financialization, defined as the expansion of financial markets, institutions, and activities, is one of the most significant economic trends in recent decades (Epstein, 2005; Mader, Mertens, and van der Zwan, 2020; van der Zwan, 2014). The rise of finance has been defined and explained by a variety of scholars. The term "financialization" refers to the expansion of a country's financial sector in relation to its total economy. Although significant research on capitalism's shift towards finance began in the late 1960s with a study by Baran, Sweezy, and Magdoff (1966), the phrase was first used in the early 1990s (Sawyer, 2014). The phrase also refers to the growing presence of the market and financial sector in our lives, as well as the expanding diversity of transactions and market participants, as well as their interaction with other aspects of the economy and society. Financialization, or the increasing importance of financial activities and transactions in the overall economy, moves the economy from the real to the financial sector, expands shareholder control over management and staff, and raises rentier benefit demands. All of these

could intensify companies' dependence on short-term financial activities to achieve revenues rather than long-term market share, revenue, and profitable investment (Van Treeck, 2009).

Whatever definition they select, most academics believe that financialization is more than a quantitative increase in particular indices and that it relates to a more profound historical alteration in the structure of capitalist economies in some way. The economic expansion that followed World War II commonly referred to as "the golden age of capitalism," is the foundation of this transition. This expansion's collapse was seen in the United States in the late 1960s, with slowing growth, a drop in corporate profitability, and rising inflation (Kaldor, 2021). While the origins of financialization can be traced back to the 1950s in the United States, the financial sector indeed took off later in the twentieth century, notably when the Bretton Woods system collapsed because the core of the international financial system was the Bretton Woods exchange rate system (Eatwell and Tylor, 2000; Soederberg, 2004). The Bretton Woods agreement, which anchored the currency to gold and connected other currencies to the US dollar, established stable exchange rates and restricted speculation. As a result, when it fell, a new age of open commerce and capital mobility started. This also resulted in worldwide market volatility, which benefited the financial industry. There were, therefore, institutions on both the international and local levels that permitted governments to pursue expansionary monetary policies in order to preserve redistributive welfare regimes, engage in international commerce, and avoid speculation and arbitrage. The postwar era's boom in the USA, according to post-Keynesian economists, was

driven by the state's active role in controlling aggregated demand through public policies that supported full employment, higher social spending, and growing wages assured. (Crotty, 2000; Minsky, 1986; Palley, 2013). With the high inflation of the 1970s, which limited the US government's capacity to sustain the requisite level of aggregated demand through monetary expansion, these policies came under additional criticism. As a result, the authorities decided to put price stability ahead of full employment. In the new regime that arose as a result of these developments, aggregate demand was sustained by increasing household debt, including home mortgages, home equity loans, auto loans, student loans, and credit cards, rather than rising wages, and inflation was controlled by cutting social spending and implementing restrictive monetary policies (Hein, 2012; Orhangazi, 2008; Palley, 2013).

Marxist sociologist Arrighi (1994) argues that financialization takes place during a period of hegemonic transition. The financial sector's share of GDP in the United States increased from 2.8 percent in 1950 to 22.3 percent in 2020. Financialization studies by sociologists like Arrighi and Krippner complement research by Marxist and post-Keynesian economists who look at the financial industry's importance in the US economy experimentally. Since the 1970s, American corporations have increasingly derived profits from financial activities. Profits from interest, dividends and capital gains for non-financial corporations have outpaced those from productive investment. Non-financial companies are significantly profiting from financial activity. A reversal occurs, with non-financial businesses increasing payments to the financial sector

through interest, dividends, and stock buybacks (Crotty, 2005). This, together with the growth of neoliberalism and Milton Friedman's free-market ideals in the 1980s and beyond, contributed to financialization in the United States. According to this reasoning (Dumenil and Levy, 2005, p. 17), "neoliberalism is the ideological expression of the reasserted power of finance." Indeed, for some commentators, financialization coincided with the neoliberal era, which lasted from the 1980s to the present day (Birch and Mykhnenko, 2010, p. 12).

Lapavitsas (2011, p. 619) defines financialization "as a systemic transformation of the capitalist economy," and modern financialization, according to Lapavitsas (2009), is a new reality. Sawyer (2014) argues that there are two viewpoints on financialization. The first is that financialization is linked to the financial sector's expansion in terms of operations, power, and so on. From the second perspective, financialization is viewed as a stage or period of capitalism that began around 1980. As countries have moved away from industrial capitalism, financialization has happened. Salary, bonuses, and stock options are all examples of today's rents. These definitions reflect the growing economic and political dominance of the rentier class, which Dumenil and Levy (2004a; 2011) describe as a new phase of capitalism. Hilferding (1981) investigated the change of "liberal capitalism" into monopolistic "financial capital" in his book, *Financial Capital*, claiming that it resulted in the unification of various fractions of capital under bank control. One of the reasons for dropping workers' bargaining is financialization; with it, wages and employment are stagnant (Crotty, 2003). In a paper on top shares of income and wages in the

United States, Piketty and Saez (2003) showed that throughout the interwar era, the share of the top 10% of income earners was around 40%-45%. During World War II, it fell below 30%, then stayed steady at approximately 32% until the 1970s, when it began to rise again. By the mid-1990s, this figure had surpassed 40% and was approaching pre-war levels.

Heterodox economists have expanded on the financialization thesis by incorporating empirical findings into a more extensive class analysis of finance-led capitalism. They believe that financialization has given power to those people and institutions who make money from financial assets and transactions: the rentiers. According to some research, the earnings of finance owners and financial institutions rose significantly throughout the 1980s and 1990s (Epstein and Jayadev, 2005). The rentiers' success has come at the expense of wage earners and families, who have seen their real earnings stagnate and their debt levels rise. According to these experts, the growing levels of economic disparity are pretty worrisome. Sweezy and Magdoff (1972), who had previously conducted a systematic examination of financialization, submitted an essay to the monopoly capital school's *Monthly Review* to investigate the ongoing problem of debt growth in the United States. High debt levels, combined with slow economic growth, have produced an inherently unstable system in which a minor drop in income may have far-reaching consequences when people default on their debts (Stockhammer, 2012). Harvey (2010, P. 26, 30) finds "the financialization of capitalism's crisis tendencies" in explaining the reasons for debt growth since the 1970s and ties it to what he calls "the capital surplus absorption problem."

Since 1973, the age of finance capitalism, also known as financialization, has been born out of necessity to address the surplus absorption problem. Banks took advantage of increased leverage—the debt-deposit ratio—by lending to one another to create surplus artificial capital to absorb the surplus. As a result, surplus liquidity grew, and by 2005, the banking sector had become the most indebted, with a leveraging ratio of 30:1.

One approach is to research financialization as the new mode of capital accumulation, which is one of the building elements of a capitalist economy and refers to a rise in assets due to investments or earnings. The purpose is to raise the value of the initial investment through appreciation, rent, capital gains, or interest as a return on investment. Financialization, according to Krippner (2005), is a pattern of accumulation in which profits are generated mainly through financial channels rather than commerce and commodity production. To explain the growth of new financial instruments and trade, Phillips defines "financialization" as "a prolonged split between the divergent real and financial economies" (Phillips, 1994, p.82). Economic financialization is another form of capital accumulation. The existing capital accumulation process is slowly shifting to the financial sector (Krippner, 2005). Hein and van Treeck (2010) use the Kaleckian model to examine the relationship between financialization and expanding shareholder power, as well as its implications for the escalating attack on labor, redistribution at the price of wages (which financialization (and neo-liberalism) are supposed to have affected the wage or the labor income share), and capital accumulation. Fine (2014, p. 55) defines

"financialization as the intensive and extensive accumulation of fictitious capital or, in other words, the increasing scope and prevalence of interest-bearing capital in the accumulation of capital." According to academics like Harvey (2005), the capital accumulation crisis of the 1970s was viewed as a serious political danger by the economic elites, companies, and ruling classes of advanced capitalist countries. In the 1970s, US capitalism suffered a legitimacy crisis as the economy was stuck in high inflation, unemployment, and slower growth. It can be argued, based on the work of Dumenil and Levy (2001; 2004a; 2004b; 2005; 2011) and Harvey (2005; 2007), that the transformations that occurred in the core capitalist countries in the early 1970s and 1980s were primarily initiated by those classes whose interests had been negatively affected by "regulated" capitalism in the postwar period. Wolf (1996) showed that from the early 1950s and the mid-1960s, the wealth of the wealthiest 1% of US families reached about 35% of total national wealth (securities, property, and stocks) before plummeting to 22%. Nonetheless, by 1986, the wealthiest 1% of the population had re-achieved, if not exceeded, the 35% mark.

Considering this, authors who employ the class struggle theory describe neoliberalism as a political project to reorganize favorable conditions for capital accumulation in order to re-confirm the power of economic elites (Harvey, 2005). This project provided a set of ideas and a set of means to restore the class power of these elites (Dumenil and Levy, 2004a). This approach is known as a "socio-spatial transformation project," which means people's movements establish new social spaces while also having the power to change the institutional, economic, and

physical infrastructure that surrounds them because it suggests a new socioeconomic governing system (Peck, Theodore, and Brenner, 2010). The neoliberal project, then, is a concept that arose to provide, first and foremost, an alternative social organization for the ruling classes at a moment when their wealth and income accumulation were in danger of permanent decline. The application of the neoliberal notion ensured the return of class power to the richest strata in numerous national settings (Dumenil and Levy, 2004a, 2004b). However, it would be severely limited if solely perceived in domestic terms. This program was centered on the construction of a new global financial system because mobilizing power resources to permit upward income distribution demanded action at both the national and global levels. To use finance as a weapon for upward wealth distribution, the neoliberal political agenda combines the interests of the global upper class, a set of neoclassical economic principles, and politically conservative values and beliefs.

This section has provided a quick overview of the literature on financialization and accumulation. According to Sawyer (2014), financialization is connected to neoliberalism, which began in the 1970s. Deregulation and increasing financial transactions, for example, have accelerated this trend. Financialization is characterized by the expansion of financial markets, the dominance of finance in society and the economy, credit extension to survive consumption, market policies that underpin inequality and rising income inequality, the dominance of finance over the industry, and deregulation of the economy and financial system. The following

subsection provides findings from a large body of empirical research on income inequality and financial development, including financial structure, financial inclusion, financial depth, capital account liberalization, and financial globalization.

2.2 Discovering a knowledge gap in the link between finance and income inequality: Previous empirical research.

The financial crisis of 2008 is a major reason that scholars have paid increased attention to the correlation between indices of financialization and measures of income inequality at various levels of study and have presented substantial evidence of a significant statistical association between the indicators (Kaldor, 2021). A number of mostly heterodox schools of post-Keynesian economics research have looked into the concept of a new sort of capitalism known as "financialization of capitalism" (Foster, 2007) and focused mainly on a macro-level analysis (Jayadev and Epstein, 2007; Hein and Schoder, 2011; Hein, 2012; Stockhammer, 2012a; Dünhaupt, 2012; Hein and Detzer, 2015). The majority of these studies have either solely focused on financialization or suffer from the fact that, despite explicitly or implicitly claiming increased income inequality during the financialization era, discrete causal factors leading to the alleged upward income distribution remain either too abstract or unknown and unexplained. Other studies have sought to explain how finance transforms social institutions and how these

alterations impact inequality without identifying the instrumental and causal components of the financialization and income disparity nexus (Piketty, 2014; Davis and Kim, 2015).

Neoclassical orthodoxy has conducted several studies on the link between finance and economic inequality. For instance, Clarke, Xu, and Zou (2006) are three researchers who have looked at the link between finance and income inequality within the neoclassical orthodoxy. Using data from 1960 to 1995, the research looked at the influence of financial intermediaries' development on income distribution in 83 high- and low-income countries. The study's findings refute the hypothesis of inequality-widening of financial development and, on balance, do not support the inverted U-shape hypothesis where income disparity first increases and then decreases before finally stabilizing. Milanovic (2016) believes that the research's most significant weakness is that the neoclassical theory, which has monopolized the study of economics, does not examine inequality per se, even though inequality is an essential aspect of the economic model. As a prominent researcher of the inequality phenomenon, Milanovic, explains the mainstream economists' position on that matter, "The reasons are very clear: inequality simply stems from the assumptions of the economic model. Hence it does not need further research. In a model of perfect competition, prices are determined in the market – there is no variable like power in the neo-classical models, and inequalities in income arise simply from differences in the initial endowments with which each agent comes to the market – and these endowments are taken as a given, they are exogenous to the model." (Milanovic, 2016, 18 March, in an interview for Social

Europe). Kaldor (2021) argues that economic sociologists are mainly concerned with the financialization of non-financial companies (NFCs) and their influence on income distribution and employment inside businesses (Tomaskovic-Devey and Lin, 2013; Alvarez, 2015; Jung, 2015; Lin, 2016). The core argument is that the financialization of non-financial companies and the government exacerbates income inequality. Increased income from financial investments is not reinvested in production but in other financial assets, resulting in real wage stagnation and worker indebtedness (Stockhammer, 2004; van der Zwan, 2014).

To be clear, the purpose of this thesis is not to provide a comprehensive historical examination of financialization, its many causes, and diverse effects. Instead, the purpose is to look at the research from both heterodox and orthodox perspectives and fill in the gaps in our knowledge of finance and income inequality. In light of current research, this thesis's contribution is to integrate and synthesize the theories and empirical studies described in the following subsections. After that, empirical research will be tested in various scenarios, in high-, middle- and low-income countries.

2.2.1 Finance and Economic Outcomes.

On the relationship between financial and economic outcomes, there is extensive theoretical and empirical literature. It has mainly concentrated on the relationship between financial

development and growth, using proxies for financial system size. Financial services (such as banks and insurance companies) and financial markets (such as stock markets, bond markets, and derivative markets) are thought to have a significant impact on economic development, poverty alleviation, and economic stability, according to an increasing body of evidence (Levine, 2005). Financial development is defined as a combination of depth (size and liquidity of markets), access (the ability of individuals to access financial services), and efficiency (ability of institutions to provide financial services at low cost and with sustainable revenues, and the level of activity of capital markets). Levine (2005) establishes several indicators of four characteristics of financial institutions and markets to assess and benchmark financial systems. The four characteristics are: (a) financial depth, (b) access, (c) efficiency, and (d) the stability of financial institutions and markets.

2.2.1.1 Financial Development and Growth.

For a long time, economists have been divided on the financial sector's contribution to economic development, with strongly opposing viewpoints. On the one hand, some economists argue that the overwhelming evidence indicates that both financial intermediaries and markets are important for growth. The literature on financial development has mainly concentrated on how the scale of the financial sector affects growth (Levine, 2005) and has given attention to the

distribution of access to finance. A set of models explains how the financial system can affect long-term growth, emphasizing how financial markets allow small savers to pool funds, how these markets then allocate funds to the highest return investment, and how financial intermediaries help to mitigate adverse selection in credit markets. For example, Levine (2005) illuminates the mechanisms by which finance impacts growth—the financial system affects growth primarily by influencing the allocation of society's savings rather than by affecting the aggregate savings rate. As a result, when financial systems do a decent job of finding and supporting the companies with the most excellent prospects rather than those with the highest political ties, capital allocation increases, and economic growth is facilitated. Such financial systems encourage the entrance of young, promising businesses while forcing the exit of inefficient ones. Such financial systems further broaden economic prospects by making credit allocation less dependent on accrued capital and more dependent on the project's social worth. Moreover, well-functioning capital markets and institutions eliminate corruption and fraud by strengthening business governance and allowing more effective use of scarce resources. Such financial structures will make it easier to fund higher-return ventures by promoting risk management, which positively impacts living standards. Furthermore, through pooling society's savings, financial systems enable economies of scale to be realized. Researchers have found that a variety of financial indices for size, depth, and functionality are strongly connected with economic growth based on empirical evidence. Levine (2005), for example, argues that financial

development is linked to subsequent economic growth. Moreover, both theory and evidence suggest that more developed financial systems reduce firms' external financing constraints, indicating one mechanism by which financial development affects economic growth.

In other words, well-functioning financial systems play an independent role in fostering long-term economic growth. Cross-country data suggests that financial sector behavior is positively correlated with income levels: financial intermediaries appear to grow in size (as measured by total assets or liabilities relative to GDP) as one shifts from poorer to richer countries, and markets in tradeable securities such as equities and bonds do as well (Demirgüç-Kunt and Levine, 1996). A broad body of research shows that economies with more developed financial systems grow faster over time, that this effect is causal (Demirgüç-Kunt and Levine, 2008) and that reverse causality alone is not driving this relationship. Many scholars have come to the conclusion that avoiding the finance-growth connection limits our perception of economic growth (Bagehot, 1873; Schumpeter, 1912; McKinnon, 1973).

Robinson (1952), on the other hand, believed that the causality was reversed. Institutions are developed in economies with good growth potential to supply the capital required to support such possibilities. Some argue that finance does not cause economic growth but rather responds to shifting demand, whereas others argue that finance positively impacts economic growth (Robinson, 1952; Miller, 1998). To put it another way, in this view, the economy comes first, and finance comes second. Lucas (1988) similarly questioned the relationship between finance

and economic growth, claiming that academics "badly over-stress" the importance of financial variables in economic growth.

Nonlinearity is also detected. In other words, the impact of financial development on economic growth is bell-shaped, with the effect weakening as financial development increases. This weakening result is caused by financial deepening rather than greater access or higher efficiency. According to Jalilian and Kirkpatrick (2005), at higher levels of per-capita income, the positive impact of financial growth turns negative. Their research suggests that the effect of financial development on economic growth is most significant at lower income levels, implying that poorer developing countries will benefit the most from the financial sector's growth and development.

2.2.1.2 Financial Development and Growth Volatility.

As society's economy and the financial situation grow, rather than standardized contracts, increasing investment initiatives demand tailored financial structures. Instead of easily collateralized capital inputs, more projects rely on intangible assets (Boyd and Smith, 1998). Larger and deeper financial systems, according to a significant body of theoretical and empirical research, help diversify risk and lower the economy's vulnerability to external shocks, thus smoothing output volatility. Countries with huge financial sectors, according to Rancière,

Tornell, and Westermann (2008b), have both higher growth and higher volatility. Raddatz (2006) shows that in financially underdeveloped countries, sectors with higher liquidity demands are more volatile, and their economies encounter more profound crises. Deep financial systems, according to Aghion, Angeletos, Banerjee, and Manova (2010), can help enterprises overcome liquidity limitations and promote long-term investment, decreasing the investment's volatility and growth volatility. Financial depth reduces volatility up to a degree, according to Easterly, Islam, and Stiglitz (2001), but too much private credit might increase volatility. In both advanced and developing economies, Dabla-Norris and Srivisal (2013) study the relationship between volatility and financial development. Access to financial services, according to evidence at the household level, provides for more risk smoothing (i.e., deviations of realized income from mean income). Due to countercyclical borrowing by the financially constrained sector, access to bank funding reduces output volatility at the industrial level (Larrain, 2006).

Furthermore, Dabla-Norris and Srivisal (2013) review the theoretical literature on how financial development affects macroeconomic volatility. Aghion, Caroli, and Garcia-Peñalosa (1999) propose a theoretical model that takes into account financial market imperfections as well as unequal access to investment opportunities. They indicate that economies with underdeveloped financial systems are more volatile because credit demand and supply are cyclical.

2.2.1.3 Economic Growth and Income Inequality.

As was mentioned in Chapter 1, Kuznets (1955) attempted to establish a mechanistic association between economic growth and inequality. Kuznets (1955), who discovered the inverted U-shaped trend of income disparity along with economic development, pioneered the link between inequality and development (Kuznets curve). Mean incomes and their dispersion are lower in rural areas than in urban areas at the industrial take-off, according to Kuznets. In Kuznets (1955) and Williamson's assessments (1965), urbanization and migration play a significant influence. Kuznets (1955) states that migration from low-income to higher-income areas can result in an inverted-U curve. Several recent studies have demonstrated the importance of urban structure in the rise of inequality in industrialized countries, both conceptually and empirically (Baum-Snow and Pavan, 2013; Behrens and Robert-Nicoud, 2014a and 2014b). As a result, urbanization exacerbates inequality.

The others have looked for causal explanations for growth and inequality but have treated each independently. Lundberg and Squire (2003) conducted a study to see whether growth and inequality are mutually reinforcing effects of other factors and processes. These factors include education, M2/GDP, and Civil liberties. They discovered that examining growth and inequality together yields substantially different conclusions and has different policy implications than previous independent research. Considerable work finds that income inequality hurts growth (Clarke, 1995; Easterly, 2002; Perotti, 1996; Person and Tabellini, 1994; Stiglitz, 2013).

According to Forbes (2000), a rise in a country's level of income inequality has a substantial positive association with associated economic growth in the short and medium term. Some models indicate that public policies that redistribute income from the wealthy to the poor would reduce the harmful growth effects of income inequality and improve aggregate growth.

In contrast, the adverse incentive effects of redistributive policies can temper their growth effects, as examined by Aghion, Caroli, and Garcia-Pealosa (1999). Strong economic growth boosts the top percentile income share disproportionately at the expense of the majority of the top decile (Roine, Vlachos, and Waldenstrom, 2009). More prosperous economies tend to have smaller wage differentials and equal distribution of income (Galor and Zeira, 1993; Aghion and Bolton, 1997; Galor and Moav, 2004). Changes in absolute poverty, as determined by the share of the population living below the poverty line of \$1 a day, are also direct functions of average growth and changes in income distribution, according to Kakwani (1993), Datt, and Ravallion (1992). Furthermore, economic development is strongly related to a decrease in the percentage of the population living on less than \$1 per day (Demirgüç-Kunt & Levine, 2007). Kakwani (1993, p. 16) argues that "if inequality deteriorates during the course of a country's economic growth, poverty may even increase with economic growth because poverty measures were found to be considerably more elastic for changes in inequality."

2.2.1.4 **Financial Structure, Growth, Stability and Income Inequality.**

The volatility of economic growth and financial stability are the two main characteristics of the economy. The majority of studies have focused on economic growth volatility or the impact of financial structure on the occurrence of booms and recessions. For example, Denizler, Iyigun, and Owen (2000) discovered that a higher share of equity financing causes more macroeconomic volatility, whereas Huizinga and Zhu (2006) discovered the opposite. Several studies of the relationship between financial structure and income inequality are most closely linked to a larger body of work that looks at the role of financial development in income distribution. In his book *Financial Structure and Development*, Goldsmith (1969) describes the financial structure as "the combination of financial instruments, markets, and institutions working in an economy." He wanted to trace the evolution of the national financial system during the process of economic development, determine whether the overall development of the financial system influences the rate of economic growth, and assess the financial structure's impact on the rate of economic development. Across a vast number of countries, he clearly showed a favorable association between financial and economic development.

On the relationship between financial structure and economic development, Goldsmith was unable to produce much cross-country evidence. Banks play a key role in mobilizing savings, allocating money, regulating corporate managers' investment decisions, and providing risk management vehicles in bank-based financial systems like Germany and Japan. Securities

markets and banks take center stage in market-based financial systems like the United Kingdom and the United States when it comes to getting society's savings to firms, exerting corporate control, and easing risk management. Demirgüç-Kunt and Levine (1999) investigate the link between financial structure and a variety of economic, legal, and regulatory factors. They conclude, among other things, that higher-income countries have more market-oriented financial systems.

Regarding the role of financial structure in economic growth, researchers have found mixed results in determining whether bank-based or market-based financial systems are more conducive to growth. The benefits that banks and other intermediaries have in terms of gaining information and creating relationships are highlighted by Grossman and Hart (1980), Stiglitz (1985), Bhidé (1993), and Allen and Gale (2000). Proponents of market-based systems, on the other hand, say that bank-based systems tend to involve monopolistic intermediaries and are, therefore, more conservative and less flexible (Rajan 1992). According to some observers, markets are more efficient at providing financial services. Some academics believe banks are better at mobilizing savings, finding suitable investments, and exerting sound corporate control, particularly in low-income or institutionally poor countries (Stulz, 2001). Others, on the other hand, stress the value of financial markets in allocating funds, offering risk management tools, and reducing the issues associated with overly dominant banks (Boot & Thakor, 1997). Levine (2002) conducted a comprehensive, cross-country analysis of which view of financial structure is

dominant. The findings show that, while overall financial development is strongly related to economic growth, neither the bank-based nor the market-based views have any support. Still, according to Levine (2002), banks and capital exchanges are complementary; therefore, neither has relative efficacy in providing financial services. Petersen and Rajan (1995) argued that big, creditworthy businesses with strong credibility and tangible assets are better candidates for equity financing. However, due to small and start-up ventures' need for financial flexibility and a relative lack of access to securities markets, bank financing is a common method of funding small and start-up businesses. There are, moreover, counterarguments.

In comparison to delegated bank financing, financial markets, according to Allen and Gale (1999), have the advantage of avoiding diversity of opinion when each investor makes their own investment decision. Investors are more likely to have diverse views on small firms' ventures because they are more informationally ambiguous and have less collateral. In this regard, equity finance is more suitable for small firms.

Others contend that neither form is more effective than the other in generating growth; what matters is the total level of development of the financial system (Rajan and Zingales, 1998).

Levine (2000) finds that the law and finance view of the financial structure has a lot of support.

Levine (2000) demonstrates in a cross-country growth framework that financial structure is not a reliable indicator of real per capita GDP growth; neither bank-based nor market-based financial systems are closely related to economic growth. He also discovered that the financial structure

does not accurately predict capital accumulation, productivity, growth, or savings rates. In a country-industry panel, Maksimovic, Beck, Demirgüç-Kunt, and Levine (2000) find that financially dependent industries do not expand faster in bank-or market-based financial systems. The formation of new businesses is also unrelated to financial structure. They use firm-level data to demonstrate that financial structure is not a reliable predictor of the share of enterprises that grow faster than their internal resources and short-term borrowings suggest. Using cross-country regressions, industry panel estimations, and firm-level studies, they demonstrate that financial structure is not analytically meaningful in classifying financial systems. In either market-or bank-based financial systems, countries do not grow faster, financially reliant industries do not expand at more excellent rates, new firms are not founded more easily, firms' access to external funding is not increased, and firms do not grow faster (Maksimovic et al., 2000). According to Maksimovic et al. (2000), the financial structure is ineffective in explaining economic development, industrial performance, or business expansion. They argue that "financial structure is not an analytically useful way to distinguish financial systems. Financial structure does not help us understand economic growth, industrial performance, or firm expansion. The results are inconsistent with both market-based and bank-based views." The debate is unresolved, which makes it challenging to formulate sound policy recommendations.

Certain scholars have studied the relationship between financial structure and financial stability. Barrell, Philip, Davis, and Iana (2010) and Kato, Kobayashi, and Saita (2010) extend buffer

measures like capital and liquidity to prior work on early warning systems for banking crises. They discovered that larger buffers have a significant negative impact on the likelihood of a banking failure. There are two sorts of liabilities identified in the literature: core and non-core. The term "core liabilities" refers to a bank's obligations to claim holders other than financial intermediaries; in other words, deposits. The non-core liabilities include those held by other financial intermediaries and foreign creditors. According to Lund-Jensen (2012), high levels of financial interconnectivity, as measured by non-core to core bank liabilities, have a positive and substantial impact on the likelihood of a systemic banking crisis. In addition, the Basel Committee on Banking Supervision, BCBS, (2010) paper on the long-term economic impact of tighter capital and liquidity requirements looks at how higher buffers can help to lower the amplitude of normal business cycles.

Most of the existing literature on the possible effects of financial structure has concentrated on either economic development or ease of access to finance, but there is no evidence of its concrete impact on income inequality. Furthermore, the few research studies that have looked into this area are far from finding a consensus. Some theories appear to suggest that any link between increased finance and increased inequality may have an asymmetric basis in the financial structure and income distribution. First, it is possible that market finance, rather than bank finance, is to blame. Second, the higher proportion at the top of the income distribution could be the reason for the resulting increase in inequality.

Using data from a panel of 97 economies from 1989-2012, Brei and Gambacorta (2018) find that the relationship between finance and income inequality is not monotonic. Income inequality rises when finance is expanded via market-based financing, while it does not appear when finance is expanded via bank lending. Gimet and Lagoarde-Segot (2011) estimate the determinants of income distribution for a set of 49 countries over the 1994–2002 period. They discover a chain of cause and effect between the development of the financial sector and income distribution. According to Gimet and Lagoarde-Segot (2011), the banking sector's growth is linked to an expansion of equal income distribution. They indicate that banks play a stronger role than markets in reducing income inequality, and the banking industry seems to have a greater effect on inequalities. They find that the relationship appears to depend on the finance sector's characteristics rather than its scale. They find a significant causality running from financial sector development to income distribution. Furthermore, it appears that the banking sector has a greater impact on inequality than the other sectors.

Aggarwal and Goodell (2009) use panel analysis over an 8-year cycle for 30 countries to show that national preferences for market financing rise with political stability, social transparency, economic inequality, and stock market concentration and fall with regulatory quality and ambiguity aversion. They show that their outcome for regulatory quality is independent of disparities in national wealth and that their result for political stability is independent of both wealth and political legitimacy, using robustness tests. They claim that since large companies

benefit overwhelmingly from stock market development, market-based economies tend to be more unequal.

According to Hau, Li, and Wang (2018), on the other hand, stock market capitalization decreases income inequality relative to total bank credit, while stock market turnover increases income inequality. Liu, Liu, and Zhang (2017) indicate that increasing the relative value of stock markets to banks helps reduce income inequality. However, the impact is weakened by financial deepening and a more market-oriented financial system. In their study, the findings of both cross-country and panel data regressions show that improved loan markets, as well as more developed stock markets, decrease inequalities and poverty. Kappel demonstrates that ethnic diversity and land distribution are important and strong determinants of income inequality and poverty.

Moreover, evidence is found that government investment in high-income countries reduces income inequality, although there is no substantial impact in low-income countries (Kappel, 2010). Liu et al. (2017) studied the relationship between financial development and income inequality, as well as the relationship between financial structure and income inequality, using data from 23 Chinese provinces from 1996 to 2012. They argue that one of the reasons contributing to China's growing income inequality is the country's incomplete financial system, which is built on a bank-based structure. The relevance of these findings suggests that reducing economic inequality necessitates raising the financial markets' relative value to banks.

Blau, (2018) investigates whether stock market liquidity influences the degree of income inequality using a large cross-sectional sample of countries. The findings indicate that stock market liquidity is negatively linked to different indicators of inequality in a region but that this association does not exist in the most developed countries. Instead, their outcomes are more robust in developing and middle-income nations. They also discovered that stock market liquidity is negatively related to poverty rates. They seek to define the process by which liquidity decreases inequalities in their final set of tests. They found strong evidence that liquidity-induced wage growth causes both inequality and poverty to fall. Seven and Coskun (2016) find that neither banks nor stock markets play a significant role in poverty mitigation when it comes to the finance–poverty relationship. Although financial development promotes economic growth, it does not always favor those in developing countries with low incomes.

Financial development has generally been defined as financial deepening, which has been measured in terms of the size of the financial system. Some of the literature suggests a positive association between financial development and economic growth (see, for example, King and Levine 1993; Demetriades and Hussein 1996; Arestis and Demetriades 1997; Levine, Loayza, and Beck 2000; Bell and Rousseau 2001; Ang and McKibbin 2007). In theory, financial development should boost growth by increasing capital allocation efficiency and easing borrowing restrictions (Levine, 2005). As a result, access to and use of credit should aid in the reduction of income inequality. This, however, ignores the question of who benefits from the

expansion facilitated by financial development. However, the theoretical and empirical link between financial development and inequality remains uncertain. Furthermore, the relationship between different types of financial development and inequality is poorly understood. This is addressed in the following subsection.

2.2.1.5 Financial Development and Income Inequality.

Understanding the connection between financial development and income distribution is critical to comprehending the economic development process. Likewise, gaining knowledge of the impact of financial development on income disparity is vital. Even though evidence suggests that financial development accelerates economic growth, economists have yet to address contradictory theoretical predictions regarding financial development's distributional consequences. Income distribution has an impact on saving decisions, resource allocation, innovation incentives, and government policies (Aghion et al., 1999; Bagchi and Svejnar, 2015). Theoretical guidance on whether financial development should enhance or decrease income disparity is ambiguous. According to some theories, financial development overwhelmingly benefits the poor. If poor individuals and entrepreneurs find it more difficult to obtain financial resources due to higher information and transaction costs, financial development that reduces

these frictions will benefit the poor, particularly by improving collateral usage and credit histories. Finance-induced growth might be pro-poor by increasing job opportunities, but it could also benefit entrepreneurs and their profit margins. A growing body of research explores whether deeper financial structures help to reduce poverty and inequality, on which theory makes conflicting projections.

According to some models, financial development boosts productivity and decreases inequality. Financial imperfections, such as information asymmetries and transaction costs, may be especially binding on the poor who lack collateral and credit records. As a result, any easing of these credit limits would disproportionately favor the poor, boosting capital allocation efficiency and reducing income disparity by making it easier for poor people to finance productive investments (Galor and Zeira, 1993; Aghion and Bolton, 1997; Galor and Moav, 2004). From this viewpoint, financial development benefits the poor by improving capital allocation performance, which accelerates aggregate growth, and by easing credit constraints that disproportionately affect the poor, which reduces income inequality. As a result, any financial development that facilitates such limits would benefit the poor disproportionately (Galor and Zeira, 1993; Aghion and Bolton, 1997; Galor and Moav, 2004).

From a different perspective, the concept that financial market inefficiencies, such as information asymmetries and transaction costs, maybe more burdensome on the poor is the foundation for the argument that inequality may rise. Some argue that because the poor rely on informal or familial

connections for capital, advancements in the formal financial sector benefit the rich disproportionately (Greenwood and Jovanovic, 1990). It is worth noting that the positive association between finance and inequality is difficult to discern at very low-income levels. Alternative theoretical arguments have lately been created to aid in understanding the relationship between finance and inequality in more advanced and financially developed societies. According to Stiglitz (2015), the recent growth in inequality observed in a number of developed financial systems may have been caused by excessive management salaries and lenders' rent collection. Furthermore, some theoretical models have recently begun considering how financiers may contribute to rising income inequality by increasing rent extraction. Rent can be collected in a variety of ways. Various models (Gennaioli, Shleifer, and Vishny, 2012; Thakor, 2012; Bolton, Santos, and Scheinkman, 2016) address the issue of detrimental or inefficient financial innovation, which influences rent extraction by agents and leads to more uneven income distribution.

In terms of empirical observations, the literature is a little mixed. Some empirical evidence indicates that financial development reduces inequality. Research has generally found that financial development increases poor people's income, particularly in developing countries (Demirgüç-Kunt and Levine, 2009; Burgess and Pande, 2004). Clarke et al. (2006) and Beck, Demirgüç-Kunt, and Levine (2007) are two articles that corroborate this conclusion. They test the various theories using data from a wide range of countries and confirm the hypothesis of a

linear inequality-reducing influence on financial development. Clarke et al. (2006) find that financial development decreases income inequality in their analysis of income inequality. Beck et al. (2007) also present a comprehensive review of the literature. Financial development, as determined by the ratio of the M2 money supply to GDP, is negatively linked to income inequality, according to Li, Squire, and Zou (1998).

Similar results are found in Hamori and Hashiguchi (2012). Financial development may also affect income distribution by increasing labor demand by businesses rather than by growing impoverished people's access to credit (Beck, Demirgüç-Kun, and Levine, 2010). Jacoby (1994) finds that lack of access to credit perpetuates poverty because low-income families reduce their children's educational opportunities. As households in Indian villages without access to credit markets experience transitory shocks, Jacoby and Skoufias (1997) find that they cut their children's schooling more than households with greater access to financial markets. According to Dehejia and Gatti (2003), child labor ratios are also higher in countries with underdeveloped financial systems. Beegle, Dehejia, and Gatti (2003) demonstrate that in countries with weak financial systems, transitory income shocks result in greater increases in child labor. Although capital market imperfections are often at the heart of theoretical and empirical analyses of the negative relationship between inequality and growth, the majority of scholars have concentrated on redistributive policies to alleviate inequality with positive economic growth consequences (Demirgüç-Kunt & Levine, 2007). Financial sector adjustments that reduce market frictions,

according to Beck et al. (2010), would lower income inequalities and improve growth without the potential incentive issues associated with redistributive policies. Their studies also touch on how financial market imperfections affect child labor and education. Beck et al. (2007) show that shifts in relative and absolute poverty rates are influenced disproportionately by financial development. Clarke, Zou, and Xu (2003) use panel data from both developing and developed countries between 1960 and 1995 to examine the link between income distribution and financial intermediaries' development. They create a non-linear link between the development of the financial sector and income inequality. They seek to account for endogeneity by allowing for causation from the financial sector to initial inequality or from initial inequality to financial sector development. Their empirical investigation can lead to a number of findings. First and foremost, there appears to be a negative correlation between financial sector development and income disparity on average. This is in line with Banerjee and Newman's (1993) and Galor and Zeira's (1993) hypotheses. Second, they find scant evidence to support the Greenwood-Jovanovic hypothesis that inequality and finance have an inverted U-shaped connection. Third, according to Kuznets (1955), the sectoral structure appears to have an influence on how financial intermediaries affect inequality. Financial intermediaries' impact on decreasing inequality is particularly muted in countries with more prominent modern (non-agricultural) industries. Even

when conditioned on average growth and lagged values of income inequality, the degree of financial development lowers the Gini coefficient's growth rate.

Hamori et al. (2012) examine the impact of financial deepening on inequalities using an unbalanced panel data analysis of 126 countries from 1963 to 2002. Also, when the effect of trade openness on inequalities is taken into account in the model, they find that financial deepening decreases inequality. Furthermore, economic growth decreases the equalizing impact of financial deepening, while trade openness raises inequality of income. They conclude that as a country grows, the disequalizing impact of trade openness diminishes and that financial deepening and trade openness have asymmetric effects on inequality. Between 1960 and 1995, Clarke et al. (2006) looked at the relationship between finance and income inequality in 83 countries. Their findings indicate that as financial development increases, inequality decreases in the long run. Although the findings show that inequality may rise as financial sector development rises, this conclusion is not robust at very low levels of financial sector development. They refute the idea that financial development only favors the wealthy. As a result, their findings indicate that financial development, in addition to improving growth, also reduces inequality. Beck et al. (2007) find that financial development raises the incomes of the lowest quintile disproportionately and decreases income inequality. Reduced income inequality accounts for around 40% of the long-run effect of financial development on the lowest quintile's

income rise. In comparison, the impact of financial development on aggregate economic growth accounts for 60%.

There is still a lack of clarity on the socioeconomic dynamics that link finance and inequality. Most studies place a premium on human capital formation, entrepreneurship, and labor demand as the channels via which financial development might influence inequality (Beck et al., 2010). The consequences of financial development on income inequality through its impact on socioeconomic structures like urbanization and geographic mobility, material and immaterial infrastructures, and human capital formation are ambiguous. However, a growing body of evidence suggests that these structural elements can help to reduce income inequality and poverty (Calderon and Serven, 2004; Ferreira, 1995; Lopez, 2003; World Bank, 2003). As we said earlier, Baum-Snow and Pavan (2013) show that urbanization exacerbates inequality. Using rich, unique data from the Italian local credit markets (provinces), D'Onofrio, Minetti, and Murro (2019) find that local banking development has a significant negative influence on the income Gini coefficient after controlling for a battery of province-specific factors and exploiting the varied tightness of the 1936 banking regulation to combat the possible endogeneity of banking development. Their findings also imply that banking development significantly impacts

geographical mobility and urban structure but has minor effects on human capital and material infrastructure building.

Even though theoretical study yields opposing predictions, there is substantial evidence that financial deepening relates to reduced poverty and inequality (Claessens and Perotti, 2007). Banerjee and Newman (1993), Galor and Zeira (1993), and Greenwood and Jovanovic (1990) are three theoretical landmark articles that describe the finance-inequality nexus (1990). Banerjee and Newman (1993) suggest that more developed financial markets will lower income inequality, whereas Greenwood and Jovanovic (1990) predict an inverted U-shaped link between financial development and inequality. According to Townsend and Ueda (2006) and Nikoloski (2012), the relationship between financial sector development and inequality is inverted U-shaped.

On the other hand, new generations of rural people can benefit from urban opportunities when they migrate to cities. Lower-income groups' earnings rise, reducing total inequality. Kuznets' argument for urban opportunities necessitates financial development, allowing formerly impoverished migrants to finance their studies and start their businesses regardless of inherited wealth or lack of it. In the 1990s, a new wave of research began to explicitly model the relationship between finance and inequality. Several studies in this strand suggest that financial development can reduce income inequality and poverty by reducing informational asymmetries and credit enforcement costs, which may be particularly burdensome for poor households and

businesses with limited internal funds and pledge able collateral (Banerjee and Newman, 1993; Galor and Zeira, 1993; Aghion and Bolton, 1997; Galor and Moav, 2004). Different channels through which financial development can lessen inequality are highlighted in the theoretical models. If the poor do not have access to financing, they are unable to invest in education and, as a result, are unable to seek higher-paying jobs. Low-income individuals may be able to invest in education as a result of financial development, which would result in reduced inequality. The ability of the underprivileged to become entrepreneurs is the topic of another channel. Financial development may reduce collateral requirements and borrowing costs by alleviating credit limits and promoting entrepreneurship and business formation (Banerjee and Newman, 1993).

Despite the fact that the majority of theoretical research on the relationship between income inequality and financial development argues that financial deepening may be a viable tool for improving income distribution, according to Kim, D.-H., and Lin, S.-C. (2011), the forecast is highly dependent on the country's threshold level of financial development. In other words, income disparity rises during the early stages of financial development when only a small portion of society benefits. More finance, on the other hand, aids in the reduction of income inequality once a certain threshold of financial development has been reached. Only after a country has achieved a certain stage of financial development will it reap the rewards of financial depth. Financial development counteracts income inequality below this vital value. The opposite result was obtained by Tan and Law (2012). The nonlinear U-shaped relationship between financial

deepening and income distribution is highlighted in this study's empirical findings, which focus on dynamic panel models. It entails a reduction in income inequalities at the early stages of a country's financial development. However, this improvement can only be dynamically sustainable below a certain threshold level. Further deepening past that point would have the opposite consequence, worsening income inequality. If the threshold level is exceeded, financial markets are inefficient in reducing economic inequality. In another study, Law, Tan, and Azman-Saini (2014) found that financial development has no significant impact on income inequality below a minimum threshold level of institutional quality. Kim and Lin (2011) find that the benefits of financial depth only appear once the country has reached a threshold level of financial development, which is consistent with Greenwood and Jovanovic's (1990) theoretical model. According to Kim and Lin (2011), the decrease in inequalities happens only at a threshold level of financial development. Financial development beyond this point continues to exacerbate inequality.

As mentioned above, some theoretical and empirical theories forecast a negative effect of financial development on income inequality. Jauch and Watzka (2016) rejected these theories. Similarly, according to empirical research such as Jaumotte, Lall, and Papageorgiou (2013) and De Haan and Sturm (2017), more finance worsens income inequality. The theory that is growing rapidly is that if a certain threshold is reached, financial progress will disproportionately benefit higher-paying groups.

Jauch and Watzka (2016) found that financial development raises inequalities in certain econometric specifications in a variety of experiments. From 1960 to 2008, they examined the relationship between financial development and income inequality for a large, unbalanced sample of 138 developed and developing countries. Their findings contradict statistical models that forecast a negative effect of financial development on income inequality as calculated by the Gini coefficient when credit-to-GDP is used as a metric of financial development. They find that financial development has a positive impact on income inequality after controlling for country-fixed effects and GDP per capita. The increasing salaries of senior executives, in particular, could cause inequality to rise (Kay, 2015). According to Rajan (2010), wage stagnation and rising income inequality in the United States prior to the Global Financial Crisis pushed low- and middle-income households to expand their debt in order to keep their consumption levels. Higher debt levels resulted in more income transfers from poorer households to the wealthier, i.e., fund providers, worsening inequality.

Some researchers discovered that the relationship between financial development and inequality is responsive to subsamples of countries, the inclusion of various controls, and the method used to calculate financial development. For instance, Denk and Cournede (2015) demonstrate that financial expansion has fueled greater income inequality over the last three decades, using evidence from OECD countries. More inequitable distribution of income is linked to higher levels of credit intermediation and stock markets. The empirical analysis shows that the predicted

variables associated with a measure of civil liberties and the initial level of secondary schooling, as well as a measure of financial depth and the initial distribution of land, are indeed important determinators of intertemporal and international variation in inequality, drawing on political economy and capital market imperfection arguments (Li, Squire, and Zou, 1998).

Acemoglu, Daron, Johnson, and Robinson (2005) argue that inequality impacts financial development, especially access distribution, since unequal access to resources impacts de facto political influence. Rajan and Zingales (2003) maintain that inequality makes it easy for existing interests to manipulate access to finance through direct control or regulatory capture of the financial system, particularly in a weak institutional structure where de facto political influence exceeds de jure political representation. Financial intermediaries, in particular, create knowledge about projects, according to Greenwood and Jovanovic (1990), but joining them comes at a fixed cost. Only the wealthy can afford this fixed cost in the early stages of development. Therefore, financial development exacerbates inequality.

Greenwood and Jovanovic (1990) constructed a model that predicts a nonlinear relationship between financial development and income disparity dependent on economic progress. Financial development, according to their hypothesis, improves capital allocation, produces economic growth, and so benefits the poor regardless of economic development level. Financial development, on the other hand, has a distributional effect that is dependent on the level of economic growth. Only the richer segments of society can afford to access and directly benefit

from financial progress at low levels of prosperity. More people can enter financial markets after reaching a particular level of economic development; consequently, a greater proportion of society benefits from financial deepening. Bahmani-Oskooee and Zhang (2015), in other studies, use time-series data analyses from 17 countries to show that the impact of financial development on income distribution is a short-term phenomenon that does not extend over longer time periods. They find that the short-run impact of financial market growth on income distribution is equal in 10 countries. The results were unequal in five countries. Nevertheless, only three countries, Denmark, Kenya, and Turkey, experienced long-run equalizing results.

2.2.1.6 Inequality in Access to Finance and Its Consequences.

The effect of financial development on the distribution of income and the incomes of the poor is a source of contradictory forecasts in theory. According to some models, financial inclusion boosts growth and decreases inequality. Financial imperfections, such as information and transaction costs, can be more burdensome for the poor, who lack collateral and credit records. Finance has the potential to have a complex effect on income distribution. It has the potential to increase returns for both high and low-skilled workers. The systems are complex, and they have the potential to benefit or harm the vulnerable, as well as decrease or increase income inequality. Theoretical projections about finance's impact on income inequality are debatable. Poor

individuals and disadvantaged groups are more likely to profit from inclusive financial systems that offer broad access to financial services without price or non-price barriers to their use. Components of financial development, such as access, efficiency, and stability, are linked to narrower income distribution, according to Naceur and Zhang (2016). Kappel (2010) and Kim and Lin (2011), on the other hand, found contradictory results. One study suggests that financial development and access to finance will increase indices of economic and social deprivation, such as malnutrition, inadequate health, low schooling, and gender inequality, in terms of human welfare (Claessens and Feijen, 2007).

However, some researchers argue that finance decreases disparity, especially through indirect labor market mechanisms, in addition to the direct benefits of increased access to financial services. Financial development, in particular, accelerates economic growth, intensifies competitiveness, and increases labor demand, according to accumulating research. Importantly, it normally benefits people at the lower end of the income scale rather than those at the higher end (Beck, Demirgüç-Kunt and Levine 2007; Beck, Levine, and Levkov 2010). Turegano and Herrero (2018) conclude that financial inclusion helps to significantly reduce income inequality, while the scale of the financial sector does not. Access to financial services is important for individuals' productivity and well-being in developing countries, and financial development could help reduce inequality and poverty (Banerjee and Duflo, 2005).

Through a wide range of countries and markets, Perotti and Volpin (2007) show that in financially dependent sectors, entry rates and the total number of firms are positively associated with investor protection. They indicate that investor rights and entry costs are better in countries with more transparent governmental and accountable political institutions. Interestingly, they find that while the size of domestic capital markets contributes to explaining entry, it is no longer significant once they introduce effective investor protection. Thus, individual access to finance is more critical for new entries than the general state of financial markets. Despite the understanding of the importance of financial constraints in allowing poorer people's incomes to grow, Turegano and Herrero (2018) suggest that an extensive financial system does not always imply easy access to and use of financial services by those who are most financially disadvantaged, such as households, particularly lower-income households, or small and medium enterprises (SMEs) in comparison to large corporations. Indeed, one of the most significant disadvantages experienced by low-income people is that they are unable to smooth their income-savings route owing to a lack of access to financial instruments. Poor people must rely on their own limited savings to invest in their education or become entrepreneurs without inclusive financial systems. Small businesses must rely on their limited earnings to explore attractive growth possibilities. This could lead to continued income disparity and slower economic development. Finance will form the divide between the rich and the poor, as well as the extent to which that gap continues over decades, in addition to long-run growth (Demirgüç-Kunt and Levine 2009). Financial development can influence whether a person's economic opportunities

are primarily dictated by individual talent and effort or by parental income, social status, and political relations. Who can start a business and who can not, who can afford college and who can not, who can try to achieve their economic goals and who can not, are all influenced by the financial system.

Furthermore, finance will influence both the pace of economic growth and the demand for labor by influencing resource allocation, theoretically having far-reaching consequences for poverty and income distribution. Acemoglu et al. (2005) maintain that financial exclusion has long been known as a major contributor to persistent inequity. This analysis would argue that we must also understand the inverse effect. Poor banking sector outreach, i.e., a small distribution network in the form of branches, kiosks, and other touchpoints, contributes to low usage in lower-income countries, skewing access to the urban, wealthier segments (Beck et al. 2007). Financial development, according to Beck et al. (2007), will influence the poor across two channels: aggregate growth and changes in income distribution. As a result, any easing of credit restrictions would heavily support the poor. Moreover, by obstructing the flow of capital to poor individuals with highly expected return investments, these credit constraints weaken capital allocation efficiency and exacerbate income inequality (Aghion & Bolton, 1997; Galor & Zeira, 1993; Galor & Moav, 2004).

Unequal access to capital can be a major stumbling block to sustainable growth because it inhibits entrepreneurial investment, which is a key determinant of economic development.

Access to finance is one of the top three obstacles to growth, with crime and political uncertainty ranking second and third, respectively, with finance being the most robust of the three (Ayyagari, Demirgüç-Kunt, and Maksimovic, 2006). Having access to financial services and funding by companies and households is also limited in many developing countries. According to research, poor access is induced not only by economic restrictions but also by barriers constructed by insiders. Since inequality affects the distribution of political power, financial regulation in unequal countries is often captured by established interests. Since small elites receive most of the benefits while risks are socialized, reforms that have been captured deepen rather than broaden access. Due to a lack of funding, smaller businesses tend to be hurt worse than their larger rivals. According to Beck, Demirgüç-Kunt, and Maksimovic (2005), the consequences of financing constraints slowed the growth of the small, medium, and large corporations by 10.7%, 8.7%, and 6.0 percent, respectively, from 1996 to 1999. This lower growth means that a lack of access to capital raises inequalities indirectly. Entrepreneurs who are unable to collect capital prefer to work in the informal market, where they generate suboptimal amounts while having high capital expenditure efficiency. As a result, one of the key reasons for the lack of convergence in growth rates between rich and poor countries is argued to be funding restrictions for small businesses (Banerjee and Duflo, 2005).

Investment Climate Assessments (ICA) study, conducted by the World Bank and other multilateral financial agencies, assessed businesses on their access to capital. The challenge in

obtaining external financing is most common in developing countries, with 29 percent of companies claiming that a lack of external financing is a significant or serious impediment to their business activity or development (Claessens, 2006b). According to related reports, SMEs are generally credit-restrained, which means they have an unmet need for external financing. For example, Beck et al. (2005) demonstrate that funding constraints stifle small-business development more than large-business growth (and even more so in underdeveloped financial systems). Beck, Demirgüç-Kunt, Laeven, and Levine (2008) demonstrate that in economies with more developed financial structures, companies that should be comprised of more small firms expand comparatively faster. A variety of country case studies provide further proof that access to financing supports a small number of businesses in developed countries. Many studies suffer, for example, from selection effects, in which the more creative or otherwise well-endowed households that received the loan would have thrived even without it. More research is required to determine if there is a strong and beneficial connection between microcredit use and household welfare, including the ability to escape poverty. Microfinance has grown in popularity and has become a significant component of increasing poor people's access to finance. Simultaneously, rigorous statistical analysis on the impact of expanded microfinance access on welfare, inequality, healthcare, deprivation, and poverty is currently being expanded.

According to some theories, financial development benefits the poor significantly. Due to greater information and transaction costs, poor people and entrepreneurs may find it more difficult to

access financial services. The poor would benefit the most from financial development that alleviates these frictions by improving collateral usage and credit histories (Galor & Zeira, 1993; Aghion & Bolton, 1997; Galor & Moav, 2004). Naceur and Zhang (2016) examined the relationship between financial development and income inequality using multiple aspects of financial development, including financial access, efficiency, stability, and liberalization. They discovered that four of the five dimensions of financial development, with the exception of financial liberalization, would substantially reduce income inequality and poverty. They further contend that the development of the banking sector has a greater effect on alleviating poverty than the development of the stock market. Their results reinforce the view that macroeconomic stability, as well as reforms to improve creditor rights, contract enforcement, and financial institution regulation, are needed to ensure that financial development and liberalization completely support the reduction of poverty and income equality. Some reports, on the other hand, claim that developments in financial services would overwhelmingly benefit the wealthy and politically linked if fixed costs make it difficult for the poor to obtain financial services or if politically biased representation encourages the political elite to secure their rents by restricting financial access through direct control or regulatory capture of the financial sector (Greenwood & Jovanovic, 1990; Rajan & Zingales, 2003; Rajan & Ramcharan, 2011). Claessens and Perotti (2007), who focus on institutional considerations, believe that financial progress can be followed by the building of entry barriers by insiders, resulting in uneven access to finance and contributing to inequality. A growing body of empirical study suggests that, in fact, reforms in

financial contracts, markets, and intermediaries aim to broaden economic opportunities and decrease ongoing income inequality. In this regard, the impact of financial liberalization, financial reforms, and institutional development on income inequality will be discussed in the next subsection.

2.2.1.7 Financialization, Liberalization of the capital account, Financial globalization and Income Inequality.

Abiad et al. (2008) point out that a meaningful distinction between financial liberalization and financial development is often not established in the literature, even though they are separate concepts. Financial liberalization refers to the government's involvement being reduced and the role of financial markets being expanded, while financial development refers to the volume of financial activity being increased (Abiad et al., 2008). To liberalize the financial sector, two options are available: first, lowering reserve requirements; and second, increasing the number of foreign funds that can be used to finance domestic loans. Bumann and Lensink (2016) argue, "The main reason for our finding is that in countries with high financial depth, the interest rate elasticity of loan demand is high. A financial liberalization policy that improves bank efficiency and reduces borrowing costs will lead to a sharp increase in aggregate loan demand, requiring an

increase in the deposit rate to restore equilibrium in the financial market. The increase in the deposit rate improves the income of savers and, hence, income distribution” (2016, p. 144).

The impact of financial liberalization on economic disparity has been discussed in recent theoretical and methodological literature. (Agnello et al., 2012; Delis, Hasan, and Kazakis, 2014; Jaumotte and Osorio Buitron, 2015; and Bumann and Lensink, 2016). Financial liberalization aimed at increasing access could actually increase fragility and inequality, as well as provoke political resistance to reforms. Korinek and Kreamer (2014), for example, propose a model in which financial deregulation increases inequality. Ang, J. B. (2010) uses annual time series data for over half a century to look at how finance affects income inequalities in India. Although financial development appears to help reduce income inequality, financial liberalization appears to increase it, according to the findings. Financial policy is successful in lowering income inequality, according to Li and Yu (2014), and the impact is stronger in countries with higher human resources. They support their theoretical result by using data from 18 Asian countries, including the country with the most promising financial change. Furthermore, among disaggregated financial reforms, tighter credit controls, improved banking regulation, and the development of security markets seem to be substantially linked to lower income inequality. As a result, financial reforms can only succeed if they are accompanied by an increase in oversight institutions. However, a growing body of empirical study suggests that, in fact, reforms in

financial contracts, markets, and intermediaries aim to broaden economic opportunities and decrease ongoing income inequality.

Agnello, Mallick, and Sousa (2012) examine the effect of financial reforms on income inequality using a panel of 62 countries from 1973 to 2005. They find that eliminating directed credit policies and overly high reserve requirements, as well as reforms in the securities industry, decreases inequalities. Using the capital account openness index developed by Chinn and Ito (2008) as a measure of financial globalization, Bumann and Lensink (2016) conclude that financial globalization reduces income inequality. They argue that their finding partly confirms Jaumotte et al. (2013) that trade globalization increases income disparity, but financial globalization reduces income dispersion. Their observational findings confirm this conditional effect. More specifically, the figures indicate that capital account liberalization continues to reduce income inequality only where the degree of financial depth, as calculated by private credit over GDP, is greater than 25%, while Jaumotte et al. (2013) and Furceri and Loungani (2018) show empirical evidence of financial globalization increasing income inequality. Furthermore, Jaumotte et al. (2013) show that aspects of financial growth linked to trade and globalization will exacerbate inequalities.

Though financial liberalization within an economy has received a lot of attention (De Haan and Sturm, 2017), the literature on the distributional effects of financial globalization is not as comprehensive. It still focuses on the wage distribution channel, which is often argued to be

conditional on the essence of financial development. Only a few studies have looked at whether a decrease in labor share due to a loss of bargaining power is driving a rise in income inequality. Delis et al. (2014) use a variable-level study of the Abiad et al. (2010) index of financial reforms to find that financial globalization reduces income inequalities. Delis et al. (2014) show that disparities in income distribution are caused by differences in bank regulatory policies across countries. De Haan and Sturm (2017) look at how financial growth, financial liberalization, and banking crises are linked to income inequality. In contrast to the quality of economic institutions, the quality of political institutions influences the effect of financial liberalization on income inequality.

The general liberalization of financial institutions, in fact, reduces income inequalities substantially. For countries with low levels of economic and institutional development, as well as market-based economies, this impact becomes insignificant. Credit and interest rate controls have the most significant negative impact on inequality among liberalization policies. Privatizations and liberalization of foreign capital flows reduce income inequalities. Liberalization of securities markets, on the other hand, exacerbates income inequality. Income inequality is exacerbated by all financial factors. The effect of financial liberalization on inequality is conditioned by the degree of financial development. Fischer, Huerta, and Valenzuela (2019) propose an overlapping generation model in which the impact of income inequality on private credit is dependent on per capita income and the quality of laws protecting

creditor rights. According to their model, higher levels of inequality result in higher levels of private credit in countries with low per capita incomes and poor legal protection. In contrast, this result is ambiguous or negative in economies with higher aggregate incomes and stronger credit security. Their results point to a credit channel through which economic effects may be influenced by inequalities.

Employing a component level analysis of the Abiad et al. (2010) index of financial reforms, Delis et al. (2014) find an income inequality reduces the impact of financial globalization, while Agnello et al. (2012) find the impact insignificant. Rodriguez-Pose and Tselios (2009) conducted an empirical investigation into the factors that influence income inequalities across EU regions. The results of various static and dynamic panel data studies show a strong association between per capita income and income inequality, as well as good human capital endowment and income inequality. High levels of educational inequality are linked to higher levels of income inequality. Their findings show that demographic aging, female labor force involvement, urbanization, agriculture, and manufacturing are both negatively related to income inequality, while unemployment and the existence of a large financial sector are all positively related. Jaumotte et al. (2013) indicate that unlike trade globalization, which has been linked to a decrease in inequality, financial globalization—particularly foreign direct investment—has been linked to an increase in inequality. According to Furceri and Loungani (2018), where credit markets are not deep and financial inclusion is low, the influence of liberalization on inequality is greater; the

beneficial effects of liberalization on poverty rates often disappear when financial inclusion is low.

Far fewer analyses in the nascent literature look at the shrinking labor share as a reason for the rise in national income inequality. The studies mostly focus on fundamental channels that influence labor's bargaining power in a variety of ways. Furthermore, in opposition to mainstream economic wisdom (Cobb and Douglas, 1928; Kaldor, 1957), which holds that the proportion of labor and capital in production, in the long run, remains stable, and what distributional implications it entails. Recent literature on income and wealth distribution has progressed beyond this controversy to a discussion of how labor contribution is decreasing in production. For example, Furceri and Loungani (2018) argue that financial globalization allows for the reallocation of production internationally, lowering labor's bargaining power and, as a result, the labor share of income. According to them, the relative bargaining power of firms and workers seems to change as a result of capital market liberalization; the labor share of income decreases in the aftermath of capital account liberalization. Some studies have found a link between income inequality and the capital-labor share of income. For example, a lower labor share is linked to a higher Gini coefficient, according to Erauskin (2020). Another study, on the other hand, found no link between the two. Islam and Safavi (2018) use the Standardized World Income Inequality Database to see how income inequality, as calculated by the GINI Index, is related to the labor share of income in the United States and Canada. For the period 1981–2011,

time-series regressions are used. Despite seeming to be associated, regression findings show that decreases in the labor income share have had no significant impact on income inequality.

Three underpinning channels are arguably also operative for the distributional implications of financial globalization in this regard. At both the individual and firm level, recent literature focuses on the rise in economic inequalities caused by the ever-increasing capital share, leading to what is known as Patrimonial Capitalism (Piketty, 2014). In 41 developed and emerging countries and using 15,812 publicly traded companies, Khan, Shehzad, and Burki (2019) find robust empirical evidence that national income inequality has a positive effect on corporate wealth accumulation via firm ownership concentration. They argue that companies' capital accumulation is aided by corporate finance mechanisms, resulting in perpetual income inequality. Using a panel of 105,970 publicly traded companies from 83 countries between 2000 and 2019, Khan, Shehzad, and Chaudry (2020) reveal patrimonial capitalism, in which wealth is handed down from generation to generation. They found that the ratio of corporate capital to labor income positively impacts income inequality in the host country, presumably through the medium of traditional corporate finance. Another body of recent literature calls for the expansion of capital's function in production as a rationale for capital's ever-increasing share of total national income to the point that capital has largely replaced labor. Product market concentration will increase as markets become rapidly dominated by superstar companies with high markups and a low labor share of value-added if globalization or technical advances drive profits to the

most profitable companies in each sector, Autor, Dorn, Katz, Patterson, and Van Reenen (2020). Capital-biased technological progress is one of the factors that play an increasing role. Since the early 1990s, Dao, Das, and Koczan (2019) have recorded a downward trend in the labor share of global income, around half of the cumulative decline in emerging economies can be attributed to technological change and varying exposure to routine jobs, with a greater negative effect on middle-skilled workers. Karabarbounis and Neiman (2014) show that since the early 1980s, the global labor share has decreased significantly, with declines occurring in the vast majority of countries and industries. Firms shifted away from labor toward capital as the relative price of investment goods decreased, owing to advances in information technology and the computer era. In this regard, Brynjolfsson and McAfee (2014) wrote an optimistic book called *The Second Machine Age*, in which, drawing on years of research and up-to-the-minute trends, they identify the best strategies for survival and offer a new path to prosperity. This includes redesigning education to train people for the next economy rather than the previous one, creating innovative alliances that combine brute computing capacity with human creativity, and adopting policies that make sense in a drastically altered world. According to Zhang, Wang, Wan, and Luo (2017), technical progress in the People's Republic of China (PRC) from 1978 to 2012 was mostly capital-driven, leading to the country's rapid rise in income inequality.

A third strand line of argument in the literature claims that rising market concentration has a significant effect on the proportion of capital/labor income share that favors capital owners.

Beyond the simple case of monopoly dominance, Stiglitz (2016) uses the word "exploitation rents" in a broader sense. Rents come in a variety of shapes and sizes. A cursory examination of the richest people on the planet (according to the Forbes 100) indicates that monopoly rents may have played a significant role in wealth inequality. Barkai (2020) draws a distinction between capital costs and pure profits, arguing that recognizing labor share reduction requires this distinction. While financialization has a positive relationship with income inequality in both strong and weak unionized countries, the latter has a stronger relationship. Kus (2012) uses data from 20 OECD countries over 13 years to explore the correlation between financialization and income inequality in industrialized countries from a comparative perspective (1995-2007). They see a close link between many financialization metrics and income inequality, even when controlling for traditional factors such as economic growth rate, unemployment, globalization, left-wing strength, social investment, union density, female labor market penetration, and wage bargaining centralization. The long-term relationship between financial growth and income inequalities in Iran is found by Shahbaz, Loganathan, Tiwari, and Sherafatian-Jahromi (2015). Financial development, they discovered, decreases income inequality. Income inequality is worsened by economic growth, but income distribution is improved by inflation and globalization. In a different light, recent research, especially in the financialization literature, suggests that highly financialized countries have higher income inequality (Zalewski and Whalen, 2010; Lin and Tomaskovic-Devey, 2013; Kohler, Guschanski, and Stockhammer, 2016). Some have argued that the emergence of a modern model of corporate control, distinct

from the managerial capitalism that characterized the mid-twentieth century and governed by rent extraction (engineered through the financial sector) out of the corporate sector, is a defining feature of at least American style capitalism in the twenty-first century. This raises critical questions about the importance of financial globalization in accessing potential markets for patrimonial capital expansion, labor substitution through the aforementioned technical advances, and/or assisting multinational companies in expanding their corporate empires around the world, for example, through foreign direct investment. The use of these channels of patrimonial capitalism, labor replacement, and product market concentration, as well as the historically oriented channel of wage inequalities, for transmitting the effects of financial globalization on the labor share and effectively the distribution of total national income, is critical.

2.3 What are the causal connections involving neoliberalism, financialization, and inequality?

The literature review begins by outlining neoliberalism and its origins, with the problem of capital accumulation at its center. It then goes on to explain how the United States, as the world's hegemonic capitalist power, broke away from the Bretton Woods regime and began abandoning Keynesian macroeconomic management and redistributive welfare mechanisms in favor of a new global institutional architecture that was to "dis-embed" finance capital from national regulations. This, in combination with the broader neoliberal agenda, has aided the

financialization of national and global economies, as well as the tendency toward growing wealth accumulation for the benefit of the ruling classes. Their interconnection, it is argued, aids in the construction of a preliminary model of causal ties between financialization and growing income disparity, which encompasses both the processes of institutionalization and an assessment of their impacts. As the arguments in the literature study imply, neoliberalism and financialization are inexorably connected. As a result, financialization might be viewed as a neoliberal regime of upward income distribution and a mechanism for the ruling classes to accumulate income. This examination of abstract concepts and categories in modern capitalism invites us to ponder more profound and meaningful questions about the ontological and epistemological challenges that come with studying the actual causal relationship between financialization and income inequality, as well as the reasons for its rise. As a result, the financialization-induced income disparity hypothesis is a theory that underpins research topics. It is also worth noting that there has not been a comprehensive empirical investigation of the influence of financialization on income disparity in high-and low-income nations during the past three decades. In the existing literature, the evidence for this relationship is inconclusive.

2.4 Exploring the relative explanatory power of orthodox and heterodox approaches to financialization and inequality.

As can be observed in the heterodox literature, most of them take a critical realism (Bhaskar, 2008) philosophical approach, which they use to convey the intricacies of the financialization-induced income disparity hypothesis in general. This philosophical tradition has several advantages, including its ontological commitment and understanding of reality as an open system, as opposed to the neoclassical orthodoxy's closed system. By exposing social realm causal mechanisms, the critical realism method warns against making an epistemic mistake in the search for the relationship between financialization and income disparity. The second benefit of critical realism theory is that it allows a pluralist approach to the study where different heterodox traditions can be employed in tandem.

The absence of neoclassical theory from the theoretical debate on the growing importance of finance/financialization should be regarded as a failure of the dominant school of thought in economics to recognize the rising importance of such a defining component of capitalism that appeared in the late early 1980s. While orthodox economists are delighted with the exponential growth of finance (PwC, 2014), heterodox economists are skeptical about the development of financial markets and instruments. According to heterodox economics, it will have a negative impact on financial stability, income distribution, poverty, employment, and productive

investment. Thus, the heterodox viewpoint regards finance as an engine of economic growth and contends that a huge financial sector may be a mixed blessing at best. This school of thought contends that financial markets in neoliberal capitalism are primarily speculative, resulting in financial instability (Epstein, 2005; Kiely, 2005, 2018; Orhangazi, 2008; Toporowski, 2009; Stockhammer, 2012b; Lapavistas, 2013; Storm, 2018). According to Milanovic (2016), the biggest flaw in the research of the neoclassical orthodoxy is that inequality per se is not specifically examined by the dominant neoclassical theory, even though it is a critical component of the economic model. “The reasons are obvious: inequality stems from the assumptions of the economic model; hence it does not need further research. In a model of perfect competition, prices are determined in the market – there is no variable like power in the neo-classical models, and inequalities in income arise simply from differences in the initial endowments with which each agent comes to the market – and these endowments are taken as a given, they are exogenous to the model” (Milanovic, 2016).

Another theme across the literature is the rise of inequality in the financialization period. Post-Keynesians attribute rising inequality to a neoliberal policy agenda that has enriched a small minority based on financial profit (Stiglitz, 2013). Stockhammer and Onaran (2012) have extended this argument globally by proposing two growth models: debt-led and export-led. Due to falling or stagnant incomes, households in debt-led growth economies sustain consumption levels through borrowing. In export-led growth countries, wage suppression promotes

international competitiveness, with profits recycled. Marxists, like post-Keynesians, recognize the link between stagnant production on the one hand and the rise of finance on the other in the era of financialization. They disagree, however, on the underlying source of this financial expansion. While Post-Keynesians say that the rise of finance is the result of poor economic policy, Marxists believe it is the result of a diminishing productive sector. Post-Keynesians attribute the growth of financialization to neoliberal policies such as financial market liberalization and deregulation. *The Rise of Finance and the Financialization of Everything* looked at the implications of the transition in financial intermediation from banks and other financial institutions to financial markets. The results of this change include increased financial asset profits and the collateralization of anything that can be collateralized as financial profit rises, capital shifts from the actual economy to financial speculation.

On the other hand, it is worth mentioning that throughout the past three decades, there has not been comprehensive empirical research on the impact of financialization on income disparity in high- and low-income countries among heterodox literature. Therefore, a conceptual research paradigm embodied in the presumed causal relationships between financialization and rising income inequality could be evaluated within the philosophical context of critical realism and a pluralist methodological framework. Employing several heterodox and orthodox theories to escape the limits of heterodox and orthodox epistemological assumptions is one of the study's primary elements. Indeed, it is stated that the political economy of the dynamic between

financialization and income distribution needs to be investigated from a range of perspectives rather than being confined by the neoclassical economic outlook to give objective, substantial, and significant findings.

2.5 Controlling for determinants of inequality other than financialization.

The growing amount of research seems to converge on a few major causative reasons that are boosting income disparity. Technological changes, changes in labor market institutions such as employees' decreased bargaining power, globalization, privatization of state-owned companies, and regulatory reforms in product markets have all been highlighted as common reasons. While the list of potential causation variables is generally agreed upon, different studies give varying relative weights to different elements.

With observational data, it is difficult to determine the causal effect of one variable (financialization) on another variable (income inequality). A researcher cannot manipulate the independent variable in an observational study or other sorts of non-experimental research. This is due to the fact that observational (non-experimental) data are created in a real-world context where all variables might change simultaneously in an uncontrolled environment. In a research study, control variables are exogenous explanatory variables that are kept constant while

changing the explanatory variable of interest (financialization) by one unit (this is the meaning of the estimated coefficient of the explanatory variable of interest (financialization)). This makes identifying the genuine (unbiased) causal influence of one variable (financialization) on another (income inequality) difficult by duplicating the *ceteris paribus* principle of altering only that one variable while holding all other variables of income inequality constant difficult.

In this thesis, I rely on theory to identify all potential economic and social determinants of income inequality. Then I include all observable determinants of income inequality for which I have access to panel data in a multivariate and dynamic ARDL model to try to minimize the potential bias in the estimated effect of financialization on income inequality.

The limitations include the influence of some control variables on income inequality and the data scarcity problem in nations. However, because control variables do not affect the sign of income inequality or the channel variables when the findings are examined alongside the reduced model, more reliable inferences may be formed by considering the faulty control problem.

Several control variables are used in the studies. I include economic growth as a measure of the business cycle. If economic prosperity tends to reward all citizens equally, we should anticipate economic expansion to reduce income disparity. If economic prosperity favors the wealthy over other groups, we may anticipate economic growth exacerbating inequality. The second factor is unemployment, which is expected to exacerbate income inequality since it is linked with a higher supply of employees relative to demand, reducing labor's bargaining power relative to capital.

Log real income per capita accounts for the influence of economic development on distribution and trade. Because the relationship between globalization and income inequality has been extensively studied in the past, a measure of globalization is adjusted. The imports are determined by dividing the value of imports by the country's GDP for each year. According to previous research, import penetration increases income disparity by supplying low-wage countries with products that compete with domestically produced goods (Alderson 1999). Additionally, (log of the) total of exports and imports as a percentage of GDP to account for the impact of trade openness on income inequality is used. This thesis uses one sub-index to measure freedom from government regulations. Reg is a composite index that measures the freedom from government rules and restrictions in the labor market, credit markets, and pricing controls in the products and services sector (Gwartney, Lawson, and Hall, 2021).

2.6 A comparative analysis of the role of financialization and inequality across different groups of countries.

This thesis conducts two separate empirical analyses. In chapter 4, a group of 48 developed and developing countries from 1993 to 2017 are chosen to be analyzed. Three main areas of finance, including financial development, financial liberalization, and financial structure, and their relations with income inequality are examined. In chapter 5, the direct and long-run effects of neoliberalism and financialization on a variety of income inequality metrics ((Gini index), the

90-50 income ratio, the 50-10 income ratio, and the 90-10 income ratio) in 14 OECD capitalist countries are examined. Moreover, this study examines the determinants of income inequality in three sets of nations between 1980 and 2011, known as the neoliberal era, and 1980–2017. Three groups of countries in this study are: neoliberal countries (the United States, the United Kingdom, Canada, and Australia); middle-class welfare states, be they social democratic (as in Scandinavia or Nordic countries (Denmark, Finland, Sweden, and Norway)); or social-corporatist (France and Germany).

2.7 Determining a knowledge gap and the contribution of the thesis to the literature

The primary aim of this chapter was to build a conceptual framework for the research by evaluating several empirical and theoretical viewpoints presented in contemporary debates on neoliberalism, financialization, liberalization, financial development, financial structure, and income inequality.

Some of the studies have either focused solely on financialization or suffer from the fact that, despite explicitly or implicitly claiming increased income inequality during the financialization era, precisely defined causal factors leading to the alleged upward income distribution remain either too abstract or unknown and unexplained (Peet, 2011; Foster, 2007; Piketty, 2014).

Several studies have sought to explain how finance transforms social institutions and how these alterations impact inequality without identifying the instrumental and causal components of the financialization and income disparity relationship (Piketty, 2014; Davis and Kim, 2015).

Despite extensive theorizing on the subject, there are few robust empirical analyses of the consequences of neoliberalism on inequality. On the other hand, empirical research on the effects of neoliberalism and financialization on income disparity in capitalist countries has been limited. In a survey of 80 countries from 1970 to 2005, Bergh and Nilsson (2008) discovered that economic freedom increased inequality, mainly in high-income countries. Furthermore, the link between finance and income inequality results is mixed. Some writers are slightly biased towards heterodox hypotheses, claiming that financial progress primarily benefits the wealthy and the well-connected. According to the empirical literature, it is uncertain how neoliberalism will affect the incomes of the middle and lower classes. However, based on the theoretical explanation above, one might assume that a shift toward a more neoliberal state will result in a drop in social spending, top marginal tax rates, and social programs. These policy changes would diminish redistribution, raise income for the rich after taxes, and presumably reduce income for the middle and lower classes after taxes and transfers. Furthermore, while some studies include a wide variety of nations, they are restricted by the last data year they were conducted. Because this period might affect the primary results, in accordance with the theoretical framework presented above.

The thesis's contribution, in light of existing research, is to combine and synthesize the ideas listed above into two separate empirical models using the Panel Autoregressive Distributed Lag (ARDL) model that have been evaluated in a range of scenarios, including high-, middle-, and low-income countries.

In the first empirical study, this dissertation, using 48 nations from 1993 to 2017, addresses shortcoming of the literature by examining the short-run and long-run effects of financial development and financial liberalization on income inequality regardless of the country where they take place and whether income inequality is influenced by financial structure or the degree to which a country's financial system is a bank- or market-oriented.

In the second empirical study, this research examines the long-run effects of neoliberalism and two aspects of financialization on income inequality indicators in 14 wealthy capitalist countries from 1980 to 2017. Furthermore, the consequences of neoliberalism and financialization on income inequality are discussed in neoliberal countries, Nordic countries, and social-corporatist countries. In addition, this study investigates the relationships between neoliberalism, financialization, and upper-tail, lower-tail, and top-bottom inequality in these countries.

2.8 Conclusion.

The chapter began by defining neoliberalism and its beginnings, emphasizing the importance of the capital accumulation crisis. It went on to explain the emergence of the new global financial order, describing why and how the United States, as the world's hegemonic capitalist power, broke away from the Bretton Woods regime and began abandoning Keynesian macroeconomic management and redistributive welfare mechanisms in favor of a new global institutional architecture that was to "dis-embed" finance capital from national regulations. This, in combination with the larger neoliberal agenda, has aided the financialization of national and global economies, as well as the tendency toward growing wealth accumulation for the benefit of the ruling classes.

Various themes linked to financial development, financial structure, financial liberalization, financial globalization, and economic growth are revisited and discussed in this chapter. As the ideas and empirical evidence from the literature review reveal, finance and income inequality are inextricably linked. This examination of modern capitalism allows us to ponder more deeply and meaningfully the ontological and epistemological issues that follow the investigation of the real causal link between finance and income inequality, as well as the causes for its growth. As a result, the financial development-induced income disparity hypothesis is a theory that underpins research topics. It was also proven that there had been a scarcity of comprehensive empirical

studies on the influence of finance on income inequality in various high- and low-income countries during the previous thirty years.

The philosophical underpinnings, interdisciplinary points of view, methodologies, approaches, and research design employed in this inquiry to address the research questions are described in the next chapter. In particular, the econometrics methodology will be described as a method to investigate the empirical research in this thesis.

Chapter 3

3 Philosophy for the thesis.

This chapter outlines the investigation strategy, which details the approaches and methods used. Moreover, every theory needs to build an ontology, an epistemology, and a methodology to fulfill a philosophical task. Then interdisciplinarity and what makes this thesis interdisciplinary in nature will be addressed.

3.1 Ontology, epistemology, methodology.

First and foremost, the thesis ontology must be described. In philosophy, ontology is the study of what exists in general. Ontology is the doctrine of objective reality as a whole. However, another definition considers ontology as a theoretical construct of the examined reality. The first interpretation of ontology is linked to the concept of substance, whereas the second emphasizes the importance of subject and language in the cognitive process. On the one hand, economic ontology is a picture of economic reality; on the other hand, it is the subjective and objective requirements for such a picture (Tutov and Rogozhnikova, 2018).

Several entities make up the financial world, with a financial entity being defined as one that provides financial services, such as loans, capital investments, and insurance. Banks (brokerage, investment, and savings), insurance firms, central banks, and mutual funds are the most important financial institutions (pension, investment). These bodies, sometimes known as financial institutions, perform a variety of duties, roles, and responsibilities with the goal of establishing a system of checks and balances to guarantee the smooth operation of financial systems. Other elements and connections that form existing financial systems, such as financial assets, are also described by financial ontology. Credit agreements such as bonds, equity such as stocks, and derivatives are examples of financial assets (futures, options, Asset Backed Securities (ABS), swaps, and Collateralized Debt Obligation (CDO)). Ontological disputes regarding finance are impacted by two major philosophical approaches—"instrumentalist" and "realist," as Glen Lehman and Chris Mortensen point out in their study (2021). Their research looks at how these two perspectives lead to divergent interpretations of what constitutes a good society and what constitutes "Nature," as well as how new roles for finance and government are recommended to align human connections with nature and precautionary environmental principles. The report concludes that relying on impersonal market forces will not save the planet. The substance of a theory is shaped by ontological assumptions, but in the financial system, this relationship takes on a unique shape due to performativity. This thesis was built on the known theory of economic performativity and the relationship between ontology and performativity in order to explain the theoretical and empirical connections between finance and

income inequality. This thesis's ontology is a notion of a portion (or aspect) of reality or a notion defining an economic perspective on reality.

The author began the "minor" part of this thesis with the fundamental premise that the knowledge sphere exists independently of our knowledge and regardless of personal subjective experience in order to better understand how finance causes income inequality and search to comprehend the ontology of this relationship. The researcher's mission is to comprehend, analyze, and explain it while taking into account a variety of viewpoints that might lead to alternative interpretations (Lewis, Ritchie, Ormston, and Morrell, 2003). This diversity improves our awareness of an ontologically multifaceted reality while also posing hurdles to our attempts to thoroughly explain it, particularly in terms of epistemological issues such as how to identify, for example, the origins of income inequality. As a result, realism is important to this study's ontological viewpoint, and it refers to the external reality that can be grasped through socially formed meanings and the human mind (Blaikie, 2007). However, Roy Bhaskar advises against conflating the two, the actual world, i.e., reality (ontology), and our knowledge (epistemology) of it in his book, *A Realist Theory of Science* (Bhaskar, 2008). Epistemology is a branch of philosophy concerned with (the study of) knowledge and how to obtain it. It might be said that it encompasses knowledge ontology. Epistemology (from the Greek episteme, which means knowledge) is the study of the theoretical foundations on which humans construct our knowledge of the world. This includes theories about knowledge's origins and boundaries. It explains how

we may learn about the world and what it means to genuinely understand something. The pluralist approach to the study was based on the study's epistemological and ontological viewpoints, which were founded on a positivist philosophy and economics' inductivist methodologies. Inductivism is a logical approach in which scientific laws are inferred from specific facts or empirical evidence. The field of economics concerned with the description, quantification, and explanation of economic phenomena is known as "positive economics" (as opposed to normative economics). It emphasizes facts and cause-and-effect behavioral links, as well as the need for economic theories to be compatible with available data.

The unity of science refers to the methods used in studying and learning from facts and experience. Regardless of whether the subject matter field is economics, history, physics, or something else entirely, the methods for evaluating and learning from data are essentially the same (Pearson, 1938). As expressed by Jeffreys (1957,1967), regardless of the subject, there must be a uniform standard of validity for all hypotheses. Different rules may apply to other issues, but they must be examined using the same means; otherwise, we have no way of knowing if our conclusions are justified by the evidence or are just the consequence of poor analysis or believing what we want to think. One of science's key goals is to learn from our past experiences and data. Such knowledge can be pursued for its own sake to satisfy our curiosity about economic phenomena and/or policy and other decision-making objectives. One part of our knowledge is simply describing what we have seen; the essential portion is generalization or

induction or forming inferences from previous experience to anticipate future or, as yet, undiscovered experiences. Our knowledge has at least two components: description and generalization or induction. While generalization and induction are commonly seen as more essential, description is crucial in research, including economics. To estimate parameters, compute partial effects of interest in nonlinear models, quantify dynamic linkages, and perform reliable inference, this thesis uses descriptive statistics, correlation, and panel data approaches as econometric tools. For example, in a study of 121 countries from 1975 to 2005, De Haan and Sturm (2017) used a panel fixed effects model to look at how financial growth, financial liberalization, and banking crises are linked to income inequality. These methods will be described and conducted in the next chapter.

In parallel with becoming more empirically based, economics is becoming more interdisciplinary. It is "less outward-looking than sociology and political science, but not distinctly or irredeemably more insular" than those disciplines (Angrist et al., 2020, p. 10). Rising inequality is widely seen as one of our most pressing social problems and a focal point for social science research. Identifying and exploring relations between economic, social, psychological, political, and cultural aspects of inequality holds great promise at a time when communities are struggling to cope effectively with inequalities. To improve our understanding of inequality, we need an interdisciplinary agenda that includes economic, cultural, spatial, and political dimensions.

The author believes that studying income inequality as a scope in modern economic science is vital and fascinating and that scholars from finance, sociology, politics, and law should participate. It is also a clearly interdisciplinary topic of study. Philosophy and the methodology of interdisciplinarity have an advantage in the study of all these fields because they allow a holistic approach to them. Interdisciplinarity and what makes this thesis an interdisciplinary topic will be discussed in the next subsection.

3.2 Interdisciplinarity.

3.2.1 What is the difference between interdisciplinary and monodisciplinary research?

A thundering call for interdisciplinary research has come from practically every corner of academia and beyond in the last several years. This request is based on the belief that interdisciplinary study produces more complex and robust understandings of the social and natural world than information generated by traditional disciplines, as well as more inventive solutions (Frickel, Albert, Prainsack, and Nowotny, 2017). Complicated issues are challenging to solve, yet they may be solved using rules and recipes. They can also be resolved via the use of systems and processes. However, the answers to complex issues do not work as effectively with complicated problems. There are far too many unknowns and interconnected aspects in complex issues to simplify rules and methods. Living and working in this world has brought us many

complexities. For instance, an academic discipline is insufficient to address the intricacies of environmental challenges on its own, presenting us with a problem. Disciplinary methods are an essential and consistent aspect of any problem-solving strategy, but they are unable to address issues entirely without integration (Clark and Wallace, 2015).

The definition and nature of disciplinarity are the critical initial steps in elucidating the meanings, understandings, and disputes around interdisciplinarity. Disciplines can be traced back to the ideas of ancient philosophers. Aristotle, for example, arranged various disciplines into a hierarchy in terms of theoretical and practical organization (Moran, 2010). The word's origin is dated to the Middle Ages, according to the Oxford English Dictionary. Since the Middle Ages, when universities first appeared in the western world in Paris and Bologna, the term has been used (Aram, 2004; Turner, 2006; Hearn, 2003).

The pressures of data collection and the challenges of information overload created the conditions for discipline distinction after the eighteenth century. Disciplines and academic societies evolved into internal specialization because of internal development and the significant rise of knowledge (Weingart, 2010). Weingart explains disciplines as a way to categorize information based on a historical evaluation. According to Boisot (1972), the creation of disciplines is based on two trends. The first, he claims, is from man's innate desire to categorize, classify, and conceptualize his surroundings. The second stems from science's obligation to fully use the collected information. The creation of disciplines symbolized an advanced force in the

history of knowledge generation (at least in the European setting), and the borders between them generated order out of chaos. Disciplinary specialization is a step forward that is required because our collective knowledge grows faster than we can keep up (Hu, 2020). Following Lattuca (2001), Aram (2004) states that the rise of disciplinary education in the United States resulted not just from a dedication to science but also from the notion that individuals need to be educated in specialized disciplines in order to participate in the country's economic life.

The phrase discipline refers to a specific field of study or body of information inside a university, such as physics, psychology, or history (Moran, 2002). A variety of researchers have looked at the definitions of disciplines. The division of modern science into various intellectual subjects or disciplines, such as physics, chemistry, biology, psychology, sociology, and economics, is one of its most defining features. Disciplines have served as a knowledge-production engine for many years. Academic disciplines are only one example of the kinds of information systems that shape our perceptions of the world. They are regarded as beneficial to learning and intellectual development because they protect information from becoming too abstract or overwhelming (Abbott, 2010). Disciplines engage in and contribute to controversies over political, economic, legal, and ethical decisions, as well as the allocation of resources and life chances, as social organizations (Shailer, 2005). Discipline is the way of imposing order on otherwise disjointed practices; it organizes and inculcates schemes of interpretation, appreciation, and action as tools of cognition and communication (Lenoir, 1993).

Aram (2004) argues that disciplines are "thought domains—quasi-stable, partially integrated, semi-autonomous intellectual conveniences—consisting of problems, theories, and methods of investigation" (p. 380). Many general features of disciplines are highlighted by Chettiparamb (2007). Even when they overlap, these qualities may be classified as belonging to one of three viewpoints, each focusing on a different feature. The first feature is based on a scientific epistemological perspective, explaining the analytical characteristics of what may be considered a discipline. The second emphasizes and connects the discipline to society, while the third emphasizes the discipline's institutional/organizational aspects. The first is based on a scientific-epistemological approach and distinguishes between discipline-specific concepts, techniques, and ways of knowing. The second examines how disciplines become socially rooted and practically realized in relation to wider external society. The third takes a more organizational approach, concentrating on how information is organized and structured institutionally. Repko defines discipline as "a particular branch of learning or body of knowledge whose defining elements—i.e., phenomena, assumptions, epistemology, concepts, theories, and methods—distinguish it from other knowledge formations" (2008, p. 4).

In the normative discussion Finkenthal (2001) claims that several disciplines are engaged in the creation of conceptions that are far distant from direct sensory experience. According to Turner (2000), the primary role of discipline is to offer what he refers to as "market discipline." This is the process of educating individuals in "fundamentally the same way" (P. 52). As professional

institutions, disciplines, and specialties carve out distinct niches for themselves, they develop arguments and exemplars that demonstrate their intellectual property is uniquely and irreducibly theirs (Fuchs, 2001). Disciplines are social systems made up of humans with vested interests based on time commitments, earned reputations, and established social networks that shape and skew their viewpoints on the relative worth of their knowledge. More disciplinary knowledge production will, without a doubt, not solve problems like climate change but will reveal further areas of ignorance, necessitating more study (Huutoniemi, 2016). A more critical attitude between disciplines, including scholarly criticism and response in general, is likely to boost the reliability of knowledge.

A primary difference between interdisciplinary and monodisciplinary can be understood from Aboelela's definition of interdisciplinary: "Any study or group of studies undertaken by scholars from two or more distinct academic fields, based on a conceptual model that links or integrates theoretical frameworks from those disciplines, using study design and methodology that is not limited to any one field, and requiring the use of perspectives and skills of the involved disciplines in all phases from study design through data collection, data analysis, specifying conclusions and preparing manuscripts and other reports of work completed" (Aboelela, Larson, Bakken, Carrasquillo, Formicola, Glied and Gebbie, 2007). Linkages between phenomena studied across disciplines often cause instability in stability systems studied and theorized by those within specific disciplines. Interdisciplinary scholars

would be able to have more valuable and innovative insights. If they recognize the relationship between discipline-based structures of stability and cross-disciplinary linkages that often produce uncertainty – and the consequences of this interaction for both disciplinary and interdisciplinary theory and practice – they may be more persuasive in extolling these advantages understandings to disciplinary scholars (Szostak, 2017). Mansilla and Gardner (2003) assert that interdisciplinary study advances our knowledge by explaining complex phenomena, developing systematic solutions, and posing new questions in ways that would not have been possible using single disciplinary methods. Interdisciplinarity embraces disciplinarity and necessarily requires a strong disciplinary foundation. In addition, disciplinary experience and procedures are the components that this strategy incorporates (Clark and Wallace, 2015). Interdisciplinary integration's ability to promote scientific advancement and creativity, as well as economic and technological innovation, is also being increasingly recognized (Bruce, Lyall, Tait, and Williams, 2004; Stefik and Stefik, 2004).

Interdisciplinarity differs from disciplinarity and multidisciplinarity in that it emphasizes cooperation and collaborative work, bringing the arguments and conventions of various disciplines into contact with one another, resulting in new framings of research problems. This can result in a variety of outcomes, such as the addition or reinterpretation of data and observations, the transfer of methods and strategies, cross-fertilization of models and agendas, and even the development of new sub-disciplines (Lowe and Phillipson, 2006). The key point is

that interdisciplinarity's attention is focused on the problem, issue, or intellectual question each discipline addresses, not on the disciplines themselves. The disciplines are merely tools to achieve that goal (Repko and Szostak, 2017). Interdisciplinarity challenges disciplines by encouraging them to rethink their accountability relationships with one another.

Interdisciplinarity may be used as a criterion for academic knowledge, even though interdisciplinary study defies current disciplinary categories and requirements (Huutoniemi, 2016). Selecting acceptable members of the group, creating foundation norms, explicating and bridging epistemological and methodological distinctions, and providing infrastructural support are some of the approaches provided for improving the interdisciplinary endeavor.

Interdisciplinarity is an implicit evaluation of the success of disciplines in expressing their messages (Strathern, 2004). Interdisciplinarity, in this view, is a nexus of interacting disciplinary principles and forces rather than a discrete entity (Huutoniemi, 2016).

Interdisciplinary accountability is thus embedded in a tumultuous web of disciplinary relationships, reflecting the contested and transitory nature of knowledge in general.

Interdisciplinary transparency emphasizes the vital role of intellectual interaction between disciplines as a counterweight to disciplinary authority (Huutoniemi, 2016). Interdisciplinary quality control, on the other hand, emphasizes an ecological or horizontal constitution of reliable knowledge, while disciplinary quality control works for cumulative advances of knowledge within the confines of its niche. Interdisciplinary accountability recognizes that what is reliable

in one context might not be so in another; more systematic scientific operation often necessitates lateral accountability, which includes oversight and obligation throughout disciplinary contexts. Many areas of applied science, such as sustainability studies, are currently showing lateral transparency (Huutoniemi, 2016).

The interdisciplinary study incorporates perspectives from several disciplines to synthesize a more comprehensive understanding; as a result, it must provide nonlinear interactions within the broader collection of variables linked together (Newell, Wentworth, and Sebberson, 2001).

Interdisciplinary funding programs, institutes, and other science policy incentives to integrate expertise within and outside academic disciplines indicate an effort to meet this need (Frodeman and Mitcham, 2007; Klein, 1990; Klein, 1996).

Interdisciplinary collaboration is essential, as demonstrated by Repko, Szostak, and Buchberger (2019). The complexity of nature, culture, and ourselves is the first catalyst of interdisciplinary studies. When several disciplines are required to research a subject or problem, it is said to be complex. These components interact in significant ways, but the disciplines do not study these interactions by their very nature. The complexity of the globalized workplace, where successful communication necessitates cultural sensitivity, is the second force of interdisciplinary studies.

The need to comprehend this complexity is more pressing than ever before, particularly now that the human population has surpassed 7 billion, putting additional pressure on our planet's limited resources. The world economy has changed dramatically in the last decade, posing the question

of what knowledge university graduates will need in the current globalized workplace. The need for systems analysis and contextual thinking is a third driver of interdisciplinary studies. The ability to break down a problem into its constituent parts to expose internal and external causes, find out how each of these parts relates to the others and the problem as a whole, and determine which parts various disciplines address is known as systems thinking. Understanding how complex systems work and how their different components interact is important for understanding how they impact our lives. We will need to consider how complex processes work in order to determine which public policies to endorse.

The changing nature of university studies is the fourth driver of interdisciplinary studies. Gardner's description of a rapidly evolving workplace emphasizes the importance of interdisciplinary research. People who are trained in several disciplines, know how to collect and incorporate information from those disciplines, and know how to apply that knowledge to complex problems are in high demand in the workplace. Since the rate of job destruction and creation is rising, students joining the workforce today will not only need to change jobs several times during their careers but will also need to change careers (Repko, Szostak, and Buchberger, 2019). The contrast between an external-problem-driven science and an inner-logic-driven science is often depicted as the interdisciplinary vs. disciplinary viewpoint (Lowe and Phillipson, 2006).

Defenders of disciplines contend that social concerns are not self-defining and that disciplines are what transform them into tractable scientific problems. As a result, scientific issue framing is still a disciplinary prerogative. This seems compelling, implying that disciplinary-based issue characterizations are the most important step in developing a research agenda (Shove and Wouters, 2005). On the other hand, interdisciplinarity proponents claim that scientific disciplines cannot be left to decide research goals because the disciplinary authority in research agenda setting has a significant flaw. Different disciplines will present their unique perspectives on a subject, but extra-disciplinary judgments will be required to resolve their mutually exclusive knowledge statements (Lowe and Phillipson, 2006).

3.2.1.1 Interdisciplinary Definition.

Interdisciplinary is made up of two words: inter and disciplinary. "Between, among, in the midst" is the meaning of the prefix inter. Disciplinary refers to something that is "of or relating to a specific field of study" or specialization. As a result, "between fields of study" is a good place to start when defining interdisciplinary (Stember, 1991, p. 4). "Derived from two or more" is another definition of inter. The core of interdisciplinary studies is interdisciplinarity, which is embodied in studies involving two or more knowledge domains (Repko, 2008). The insights (i.e., academic writing on a topic) into a given problem created by concerned disciplines are

something derived from areas of study. Interdisciplinary actions based on these insights are referred to as integration. Integration is a step in the interdisciplinary research process that aims to bring disparate disciplinary viewpoints together. The consequence of integration—another component of the prefix inter—is something entirely new, separate, outside of, and beyond any discipline's bounds, hence adding to knowledge. The prefix inter has three important aspects:

- The tumultuous inter-discipline relationship
- Integration, which is the action taken as a result of these insights,
- Something entirely new that emerges from integration and adds to knowledge (Repko, 2008).

Interdisciplinarity has been a major subject in academic and policy-oriented knowledge production and research funding since the 1960s. As a result of the widespread adoption of interdisciplinary projects, new research has emerged that examines the defining characteristics and challenges of these activities. Interdisciplinarity is thus best understood as a variety of different ways of bridging and addressing the prevailing disciplinary approaches rather than as a single entity (Huutoniemi, Klein, Bruun, and Hukkinen, 2010). Based on Repko and Szostak (2017, p. 12): “Interdisciplinary studies is a process of answering a question, solving a problem, or addressing a topic that is too broad or complex to be dealt with adequately by a single

discipline and draws on disciplinary perspectives and integrates their insights to produce a more comprehensive understanding or cognitive advancement.”

Aboelela et al. (2007) have a similar idea about the interdisciplinary definition: "Interdisciplinary research is any study... undertaken by scholars from two or more... disciplines. The research is based upon a conceptual model that links or integrates theoretical frameworks from those disciplines, uses study design and methodology that is not limited to any one field, and requires the use of perspectives and skills from the involved disciplines throughout multiple phases" (p. 341). Interdisciplinarity is a term that refers to the combination of two or more academic fields of study (Raento, 2009). Interdisciplinary refers to when two or more disciplines come together to study a common subject, phenomenon, or occurrence, integrating different points of view in a given context in order to achieve more fruitful outcomes (Bilgi, 2018). Interdisciplinarity is a form of disciplinary reconfiguration that makes integration easier (Klein, 1990).

Interdisciplinarity is characterized as the combining of two or more disciplines for a research project, educational program, or experience. In practice, interdisciplinarity integrates information, techniques, tools, and/or principles from different disciplines to solve complex problems using a variety of disciplines (Mansilla, 2010). Interdisciplinarity provides for strategic investment in research to be driven and coordinated through a variety of stakeholders, including research councils, universities, government agencies, and industry, as funders, manufacturers, and potential users of science (Lowe and Phillipson, 2006).

Interdisciplinarity can be based on the metaphor of bridge building or restructuring. Bridge building involves making links between two or more disciplines, while a restructuring takes parts of several disciplines to create a new whole (Klein, 2010). Any study or group of studies conducted by researchers from two or more different scientific disciplines is called interdisciplinary research. The analysis is based on a conceptual model that connects or incorporates theoretical constructs from those disciplines, employs study design and methodology that is not limited to any one area, and involves the use of perspectives and skills from the involved disciplines at multiple phases of the research process (Aboelela et al. (2007). Interdisciplinary is associated with innovation, growth, change, and modernization, as well as being diverse, flexible, and liberal (Weingart, 2000). It is also referred to as boundary crossing, bridge construction, mapping, bilingualism (Repko and Szostak, 2017), and the new frontier (Weingart, 2000). When the convergence and interaction of disciplines are constructive and deliberate, it is called interdisciplinarity (Klein, 2010).

Based on Repko and Szostak (2017), interdisciplinarity involves a procedure-based research project, advanced disciplines or bodies of expertise, integration of disciplinary perspectives, and improvements in cognition. Repko (2008) also expresses that interdisciplinary research is a "process" rather than a "method" since the process allows for more methodological flexibility, which is especially important when working in the humanities. To illustrate what interdisciplinary study is, Repko and Szostak (2017) express what interdisciplinary is not:

Interdisciplinary studies are not multidisciplinary studies. "multidisciplinarity" refers to the juxtaposition of ideas from two or more disciplines. For instance, in a course where instructors from various departments are invited to clarify their discipline's perspective on the course topic serially, no attempt is made to incorporate the insights provided by these perspectives into an interdisciplinary understanding of the topic. Moreover, interdisciplinary research is not the same as transdisciplinary research. Transdisciplinarity complements interdisciplinarity and entails the integration of outside-the-academic perspectives, a team approach to research, active participation of non-academic participants in research design, and a "case study" methodology. Jensenius (2012) defines different types of disciplinarity: "Intradisciplinary: working within a single discipline. Cross-disciplinary: viewing one discipline from the perspective of another. Multidisciplinary: people from different disciplines working together, each drawing on their disciplinary knowledge. Interdisciplinary: integrating knowledge and methods from different disciplines, using a real synthesis of approaches. Transdisciplinary: creating a unity of intellectual frameworks beyond the disciplinary perspectives."

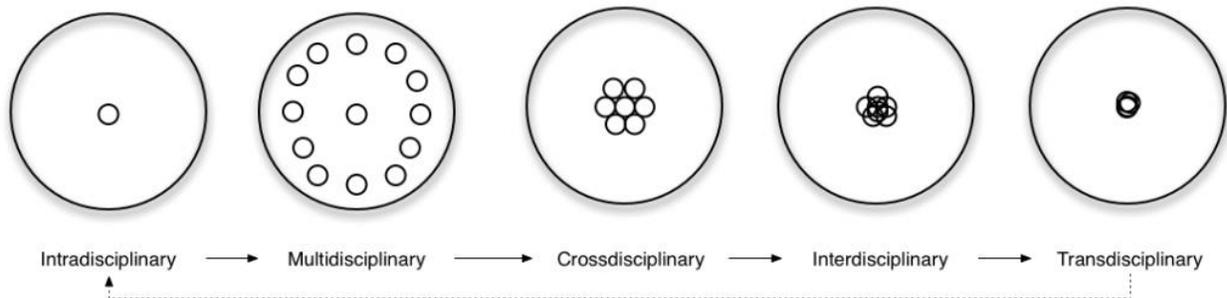


Figure 2: Disciplinarity: intra, cross, multi, inter, trans

Sources: (Jensenius, 2012)

Interdisciplinarity can be classified into a variety of categories, including:

- Narrow interdisciplinarity is between disciplines that are near on the spectrum of disciplines, such as two sciences or two humanities disciplines, with similar topics, methods, and perspectives (Duncan, 2016).
- Broad or wide interdisciplinarity refers to the collaboration between disciplines that are far apart and have nothing in common, such as science and a humanities discipline (Klein, 2010).
- Methodological interdisciplinarity occurs when methods are borrowed from other disciplines (Duncan, 2016).

- Theoretical interdisciplinarity occurs when there is an emphasis on synthesis and a comprehensive overarching view of the problem (Salter and Hearn, 1997; Klein, 2010).

Repko (2008) defines interdisciplinary forms into three types:

- An instrumental interdisciplinarity is a pragmatic approach to science, methodological borrowing, and practical problem solving that responds to societal demands.
- Conceptual interdisciplinarity emphasizes the importance of integrating expertise and asking questions that are not limited to a single discipline (Salter & Hearn, 1997).
- Critical interdisciplinarity seeks to challenge current expertise and education systems, posing questions of meaning and intent (Klein, 2005).

3.2.1.2 The Work of Integrating Knowledge.

Based on Mansilla and Gardner (2003), integrating knowledge and modes of thought from two or more disciplines is the main task of interdisciplinary studies. Integrating knowledge entails defining and combining knowledge from relevant disciplines to provide an interdisciplinary understanding of a specific issue or intellectual challenge that is limited in time and context and would not be possible if a single disciplinary approach were used alone (Repko and Szostak, 2017). According to Klein (2018), the idea of integration entails knowing how to synthesize

different perspectives and comprehend modern global challenges. Integrating knowledge often entails problem-solving on a realistic level (Mansilla and Gardner 2003). Interdisciplinary work often results in the rise of new areas. Ecology, environmental sciences, resource management, landscape development, industrial ecology, medical ecology, human ecology, social ecology, public health, cancer research, biotechnology, sociology of knowledge, discourse studies, science, technology, and society studies, future studies, conflict studies, cultural studies, and media studies are just a few examples of the growing number of such fields. (Klein, 2002).

Burgess and Slonaker (1978, p. 2) claim that interdisciplinarity facilitates integration by providing "ways and means for blending wisdom and science, for balancing free association and intellectual discipline, for expanding and refining knowledge, and for building a problem-solving culture that mixes "permanent" and "transient" membership, while remaining open to new membership and fresh ideas." Unification via reduction, a global level of theory, an overarching abstract model such as general systems, alternative theories that may be integrated locally, links across fields, and micro-level integrations are among the techniques for integration.

3.2.1.3 Reasons for interdisciplinarity.

Interdisciplinarity is "needed to answer complex questions, solve complex problems, and gain a coherent understanding of complex issues that are increasingly beyond the ability of any single

discipline to address comprehensively or resolve adequately" (Repko, 2008, p. 3). The inherent complexity of society and nature, according to the National Research Council of the United States (2005), is the first of four drivers of interdisciplinarity today, along with problems and questions that are not limited to one societal discipline challenges and the power of new technologies. According to Krohn (2010), the most complex problems are those that must be dealt with on a daily basis outside of the academic community. Morin (2008) defines complexity as "uncertainty, indetermination, and random phenomena" in addition to the number of units and interactions of information (p. 20). Because of the mismatch between "the environment that our sciences represent and the world that we would like to live in," interdisciplinarity is needed. Interdisciplinary research, according to Klein (2018), comprises integrating disciplinary perspectives in order to better detect and comprehend multifaceted phenomena in a complex system. An excellent interdisciplinary has reliability, flexibility, patience, resilience, sensitivity to others, risk-taking, thick skin, a preference for variety, tolerance for uncertainty, a willingness to learn, divergent thought, bravery, modesty, and the capacity to delegate one's views, according to Bromme (2000). Although many of these skills are already expected of a disciplinary researcher, others, such as the ability to delegate one's disciplinary views to those of another discipline, must be refined. Klein and Newell (1997) described several motivations for interdisciplinary research: education (both general and liberal), solving social, economic, and technological problems, criticism of social, political, and epistemological issues, faculty development, financial necessity, and generating new knowledge.

There have been concurrent demands for research decision-making and policy setting to be more open and sensitive to public concerns and expectations, partly in response to the appropriation of science into the information economy and the fact that research is increasingly performed in collaborations involving the public and private sectors. To ensure that scientific and technical opportunities and limitations are recognized in their relevant social and environmental contexts, the field of interdisciplinarity is expanded to include both the social and natural sciences. Interdisciplinary research thus meets increasing demands from public interest groups, policy-makers, and stakeholders for more integrated perspectives (Lowe and Phillipson, 2006).

These are some of the reasons why interdisciplinary integration is essential. However, because of conflicting lexicons, epistemological demands, and varied views, Clark and Wallace (2015) claim that the idea of integration is perplexing. They went on to say that there is no consensus on how to conduct integration, that the literature is disorganized, and that comprehension is hampered by “a surplus of pseudo-integrative academic offerings” (2015, pp. 239, 242).

3.2.1.4 Interdisciplinary pros and risks.

According to Raento (2009), the pros of doing interdisciplinary research can be summarized as follows:

- It improves communication and allows for a more open exchange of ideas.
- It broadens a study's theoretical framework.
- It broadens the scope of research by providing new viewpoints and insights.
- It helps in the opening of competitive channels not only within a discipline but also across disciplines.
- Interdisciplinary programs allow for collaborative teaching.

The use of an interdisciplinary approach is not without risk. The following are some of the risks to be aware of:

- Funding can be difficult due to a lack of disciplinary orientation.
- Discipline's core values can disappear.
- It is not always easy to adopt new ideas. (Bilgi, 2018).

Interdisciplinarity, according to Shailer (2005), provides the following benefits and drawbacks based on personal experience. Benefits:

- Broad-based liberal arts and sciences are learning as a solid foundation for advanced learning (possibly the origins of interdisciplinary studies).

- In addressing major social and political problems, a synergy of multiple viewpoints and discipline-specific methodologies is needed.
- A significant division between practical and theoretical learning.
- Interaction with real-world issues, cultures, and environments.

Pitfalls:

- "Pidgin minds" (Long/Cerroni-Long), a lack of knowledge depth, and a lack of program coherence.
- Career risks for young scholars who pursue interdisciplinary research topics during their doctoral studies or who begin interdisciplinary research before receiving tenure (Sperber, 2003).
- Committees adjudicating interdisciplinary grant applications lack interdisciplinary expertise and knowledge (Sperber, 2003).
- Assessing the quality of interdisciplinary programs and projects is difficult (Mansilla and Gardner, 2003).
- The difficulty for a department and faculty member to earn "credit" for supervising interdisciplinary graduate students and for faculty members with cross-departmental appointments to fulfill the service demands of two departments within the university's incentive

systems (or for the departments, especially small ones, to get the service they feel they need) (Shailer, 2005).

3.2.1.5 Interdisciplinarity challenges.

In the arts, social sciences, and professional education sectors, I-D practitioners face three major challenges:

1. The difficulties and opportunities presented by diversity challenges.
2. Globalization challenges.
3. Challenges faced by a world influenced by information technology (hereafter IT), including the influence of new generations who "grew up digital" (Vickers, 2003).

Furthermore, the logic or "interdisciplinarity program" provides insights into areas of research that are not featured or known as single disciplinary entities (Bird, 2001; Feltham, 2001).

3.2.1.6 How to Do Interdisciplinarity?

Szostak (2002) describes the interdisciplinary process:

1. Start by asking an interdisciplinary question.
2. Identify the key as well as secondary phenomena involved.
3. Determine which theories and methods are most applicable to the problem at hand. Be careful not to dismiss theories and methods that might shed some light on the issue, just as you would not dismiss phenomena.
4. Perform a thorough review of the literature.
5. Determine the disciplines and viewpoints that are applicable.
6. If any of the related phenomena (or connections between them), hypotheses, or methods described in (2) and (3) have received little or no attention in the literature, the researcher should attempt to conduct or promote such a study.
7. Evaluate the findings of previous studies.
8. Compare and contrast previous disciplinary or interdisciplinary research findings.
9. Develop a more thorough/integrative review.
10. Examine the integration's results.
11. Put the integration findings to the test.

12. communicate the findings.

3.2.1.7 Economics as an interdisciplinary field.

Any discipline must identify its domain – its core interests and questions (its subject of interest and theoretical problem) – as well as its conceptual and methodological foundations in order to become defined. This necessitates the establishment of boundaries in relation to other disciplinary discourses. It suggests some kind of “interdisciplinary isolations,” to a greater or lesser extent (Neves, 2017). The isolations may be theoretical (“thought experiments”) or physical (“experimental isolations” or, less often, “spontaneous isolations”). The operation of (intellectually) isolating a structure, relationship, mechanism, or function from other potential factors in the creation of a concept, model, or principle is known as “theoretical isolation.” Interdisciplinary isolations thus describe (and demarcate) the domain (and boundaries) of a particular disciplinary discourse in relation to other disciplinary domains. Naturally, various isolation techniques exist, each of which determines what is isolated (Mäki 1992, 2004). Within each discipline, various interdisciplinary isolation strategies can be observed – and economics is no exception (Neves, 2017). The field of economics has a long and varied history, with many actors and a wide range of theoretical and methodological contributions (Neves, 2017). The formation of economics as modern science can be described as a long process of defining and

autonomizing a particular field of study, complete with a well-defined theoretical object, conceptual structure, and research methodology (Robbins, 2007). Robbins transforms economics into a way of thought and a system of study. As a consequence of the aggregation of individual agents' behaviors viewed in an atomistic manner, the economy is analyzed in terms of (efficient) equilibrium solutions for problems of rational choice of allocation of limited resources with alternative uses (optimization) (the model of rational choice).

Moreover, from some scholars' points of view, economics is an interdisciplinary field. A growing number of economic research studies are incorporating ideas from other disciplines to help them better understand a variety of issues (Lamont and Pierson, 2019). This trend shows that economists in the field of analysis agree that the benefits of interdisciplinary assessment outweigh the costs. A variety of examples will help to highlight the scope of interdisciplinary research that economists are doing, as well as serve as a signal that integrating ideas from other disciplines benefits economics teaching and that the benefits will certainly outweigh the costs.

According to Coase (1977), economists may research other social systems, such as legal and political systems, not because they want to contribute to law or political science but because they need to understand how the economic system works. Parts of these other social structures are so intertwined with the economic system that they are just as much a part of it as sociological, political, or legal systems (Coase, 1977). Neves (2017) believe that social scientists who are unfamiliar with the economic system will do it effectively. Such work may be conducted in

conjunction with other social scientists, but it is unlikely to be done well if economists are not involved. As a result, he believes that the application of economics will continue to be expanded to include studies of other social structures. However, the aim would be to help us better understand how the economic system works. In other words, there is no sufficient knowledge of the economic system without interdisciplinarity. As Coase (1977) argued, studying the economy (or any other research field for that matter) necessitates familiarity with the subject of study. Economists have amassed an extraordinarily diverse wealth of knowledge on facets of social reality on which they have based their attention over the last two and a half centuries, thanks to the diversity of methods that have defined the discipline in the previous two half centuries. To be contained within a discipline, the “economic” is far too complex and intertwined with all else (from ecosystems to value and belief systems). The economy can be segmented into subsystems and evaluated as if they were closed systems since it is an open system. However, any such segmentation should still be considered partial and provisional (Neves, 2017).

3.2.2 How is my topic interdisciplinary in nature?

We live now in an interdisciplinary and even further post-disciplinary age, which means that discipline boundaries are being wiped, and there are no fixed, static and unchangeable boundaries (Bilgi, 2018). Closer collaboration between academic and commercial interests is

seen as facilitating the development of new fields of research and application by combining various elements of established and emerging expertise. The various forms of interdisciplinarity in higher education institutions are discussed, as well as the various ways in which it has been used to advance curricular changes (Mayville, 1978).

Research on the linkage between finance and inequality needs to result from the integration of various distinct sciences, including economics, history, sociology, and political science. Finance as a discipline arose primarily from economics, and economics remains a central source of interdisciplinary expertise in terms of combining concepts, knowledge, and theories from disciplines other than finance (Anderson and Chang, 2019). The exchange of ideas across disciplines is essential for the development of new insights and processes. Some researchers note in their analysis of the literature on interdisciplinary research that it is credited with scientific breakthroughs, social problems, promoting creativity, energizing new research avenues, as well as revitalizing disciplines. Despite the overwhelming evidence in favor of interdisciplinary research, they demonstrate that top-tier business and management journals (including finance) are consistently biased towards it in favor of mono-disciplinary research (Anderson and Chang, 2019).

According to certain researchers' identification, the interdisciplinary aspect of inequality has been underlined, as have the significance and characteristics of interdisciplinary study. The study of inequality varies from anthropological studies of hunter-gatherer communities (Smith, Hill,

Marlowe, Nolin, Wiessner, Gurven, ... and Bell, 2010) to historical analyses of the nineteenth-century "Great Divergence" among nation-states and the modern economics and social consequences of what experts refer to as patrimonial capitalism (Piketty, 2014). The study of inequality, on the other hand, is truly interdisciplinary research that encompasses a) empirical social and political measures of disparity's dimensions and degrees, b) an interdisciplinary examination of the various bases of power in status, political, and economic systems, c) the creation of several statistical indexes for measuring inequality, d) the transmission and perilous reproduction of disparities, e) the examination of historical efforts for legal equality, f) the philosophical distinctions between formal and substantive equality, as well as the political and theoretical rationales for equality and inequality, and g) the debate over taxation and other governmental initiatives addressing inequality. The interdisciplinary study can help discover and explain a variety of economic, political, social, cultural, and psychological elements that appear to perpetuate or intensify inequality in its different manifestations. Collaboration between psychologists, sociologists, and political economists enables a more comprehensive and precise understanding of the interface between individual behavior, cultural repertoires and structures, and larger social forces, all of which contribute to the development and reproduction of inequality.

In terms of complexity, inequality has become a hot topic in recent years. It is a complex topic with many difficult and challenging questions. These include defining the notion itself, sorting

through data to acquire a clear picture of various types of inequality, and identifying what can be done to alleviate rising inequality and its influence on modern society. When discussing global inequality, the major focus is often on widening income disparities. While the poor may not be getting poorer, one striking characteristic of inequality is that even standing still feels like falling behind if everyone else is moving ahead. As the upper classes grew wealthy, the middle class and those living in poverty felt poorer and poorer in contrast. This, however, is not an illusion. It has potentially fatal implications.

According to Temkin (2001), equality is a subtopic of the larger and even more complex topic of fairness. Worrying about inequality, in particular, is that aspect of our concern about justice that focuses on how people fare compared to others. As a result, our concern for equality is inextricably linked to our concern for a certain feature of justice; they are inseparably linked. Certain inequalities are disagreeable because they are unfair; nonetheless, there is a certain form of unfairness in being worse off than another due to no fault or choice of one's own.

Some academics feel that the wealth of the rich influences how middle-class people live. Feeling poor deducts the same number of years from your life as really being poor. Your stress hormones are affected by the size of your neighbor's house. Financial insecurity causes us to make self-defeating decisions that exacerbate our predicament. Because of your financial success, you see people who disagree with you as idiots and morons rather than people with different points of view. Understanding the significance of these facts will assist in taking any action to modify

income distribution, and this research adds to that by examining certain reasons for income disparity in order to strengthen Social Security. It will provide something significant. It is critical to analyze the macro-level causes and economic repercussions of inequality. Several disciplines should join to discuss these issues, which may allow us to make efforts to eliminate inequality.

In order to understand how changed economic conditions are related to other social, psychological, political, and cultural processes that can either counteract or reinforce the probability of inequalities being permanent, we need to look at how other social, psychological, political, and cultural processes can either counteract or reinforce the likelihood of inequalities becoming lasting. Such shifts and interconnections can only be understood by drawing on a diverse set of social science knowledge. Interdisciplinary research may aid in identifying and explaining a range of economic, political, social, cultural, and psychological factors that appear to intensify or exacerbate inequality in its various forms. Collaboration among psychologists, sociologists, and political economists allows for a more comprehensive and precise understanding of the interface between individual behavior, cultural repertoires and structures, and wider social forces, which all contribute to the development and reproduction of inequality.

In summary, three reasons exist why this study should use an interdisciplinary approach. The first justification flows from the complexity of inequality.

As Temkin (2001) said, equality is a subtopic of the more complex topic of fairness. Worrying about inequality is that aspect of our concern about justice that focuses on how people fare

compared to others. As a result, our respect for equality is linked to our concern for a certain feature of justice. There are too many unknowns in complex issues. One is defining the notion itself. Two, sorting through data to acquire a clear picture of various types of inequality. Three, identifying what can be done to alleviate rising inequality and its influence on modern society.

A second justification typically used for an interdisciplinary approach occurs when essential phenomena, which are part of the research problem, are examined by more than one discipline.

Inequality refers to the phenomenon of unequal and/or unjust distribution of resources and opportunities among members of a given society. This phenomenon is examined in several disciplines, such as Sociology, Economics, History, Political Science, etc.

The third justification for an interdisciplinary approach occurs when the problem requires the researcher to draw upon an interdisciplinary field. These items use in inequality research, and each of them should be addressed by one discipline. For example, the examination of historical efforts for legal equality is examined by historians. or the creation of several statistical indexes for measuring inequality is examined by statisticians, and so on. As Repko and Szostak (2017) argue, interdisciplinary studies have a research process to produce knowledge but freely borrow methods from the disciplines when appropriate. Thus, this research picked the econometric method to carry out the research. To sum it up, income inequality is an important and exciting topic in current economic science, and scientists from finance, sociology, political science, and the law should engage. Philosophy and interdisciplinarity methodology offer an advantage in

studying all of these subjects since they allow for a comprehensive approach. All of the debates regarding this research that have occurred here and above are closely tied to Besselaar and Heimeriks' interdisciplinary idea (2001, p. 706), "An interdisciplinary approach, on the other hand, creates its own theoretical, conceptual, and methodological identity. Consequently, the results of an interdisciplinary study of a certain problem are more coherent and integrated."

3.2.3 Why is economic history relevant to social science research?

Economic history is an interdisciplinary field that integrates economics and history, two fields that frequently misunderstand one another (Blum and Colvin, 2018). Although disciplinary boundaries were non-existent in the eighteenth century and permeable in the nineteenth and early twentieth centuries, the contemporary social sciences had developed as autonomous discourses with their own identities by 1945 (Rutherford and Morgan, 1998). Many historians working in the history or sociology of science could be impacted by economists' perspectives on what is important to the field and where its boundaries are drawn. The importance of considering economics as a social science is because the identities of economics and other social sciences are the results of an ever-evolving process directly linked to their exchanges. Moreover, the social sciences as a whole were shaped by shared political, social, and intellectual contexts, and thus there are important parallels between their development. The existence of sub-identities that correlate to the separation of disciplines into sub-disciplines, such as economic psychology,

economic sociology, economic geography, or economic anthropology, is another important feature of the links between economics and other social fields (Backhouse and Fontaine, 2010).

One of the most influential economists of the twentieth century, Schumpeter (2006), believed that economics had to be considered a social science and could write of "the 'fundamental field' of Economic Sociology in which neither economists nor sociologists can get very far without treading on one another's toes." He also added, "psychology is really the basis from which any social science must start and in terms of which all fundamental explanation must run." He argues that the modal economist and modal sociologist have little knowledge of and little interest in what the other does, preferring to accept each other's professional results using their primitive sociology and primitive economics, respectively (Backhouse and Fontaine, 2010). Economists, according to Schumpeter, make whatever psychological assumptions they like, ignoring expert psychologists. Three articles look at the postwar interaction between economics and other social sciences. The most prominent example is Philip Mirowski's (2000) introduction to an economic anthropology symposium, in which the primary article (Pearson, 2000) deals with the prewar period.

Another example is an article on recent behavioral economics by Sent (2004), which includes a section on the relationship between psychology and economics. This is merely a simple summary of the historical links between economics and psychology. Medema (2000)'s final piece explores the emergence of public choice in economics and political science. Backhouse (2002) discusses

the interest of historians (as opposed to science historians) in economics at the above-mentioned symposium, "The Future of the History of Economics."

Donald Winch presented Adam Smith's *Politics*, his first step into intellectual history, acknowledging the impact of his Sussex colleagues in influencing his idea of history. The history of eighteenth- and nineteenth-century economics needs to be approached as intellectual history, setting aside conventional views of disciplinary boundaries (Winch, 1978, 1996, 2009). The ability to explain the economy is the most important aspect of economics. And the economy can only be understood by thinking about causal links and underlying social processes using economic theory. Untested theory, on the other hand, is nonsense. Economic history is one approach to putting theory to the test; it is also necessary for sound economic theory to be developed. As a result, economic history is required (Colvin, 2019, May 16). Economic history deals with some of the most important questions in social science. Thus, it should appeal to aspiring economists.

Many researchers strive to investigate issues that have the potential to change their perceptions about the modern world's origins and development. Even if their queries are minor, the answers they provide have the potential to change their understanding of the forces that drive human interaction. They tend to be agnostic (or secular) with respect to theory and methodology, adopting (and adapting) the most applicable framework to the topic, and situation, under study, rather than being theoretically or methodologically limited in their approach. Researchers are not

microeconomists, macroeconomists, or econometricians; they are not orthodox or heterodox—they are empirical social scientists who want to know what happened in the past; they are economic historians (Blum and Colvin, 2018). Getting knowledge from our prior experiences and data is one of science's main objectives. We can pursue such information for its own sake to satisfy our curiosity about economic phenomena and for policy and other decision-making purposes. One aspect of our knowledge is just recounting what we have observed. Still, the more crucial aspect is generalization, induction, or concluding the past to foresee the future or previously unknown experiences. Lucas (2004) argues, “I will set out what I see as the main facts of the economic history of the recent past, with a minimum of theoretical interpretation, and try to see what they suggest about the future of the world economy. I do not think we can understand the contemporary world without understanding the events that have given rise to it.”

3.2.4 Why is the history of thought and knowledge relevant to social science research?

According to Tarascio (1975, p. 1), “Intellectual history is often viewed from the perspective of a particular discipline, and accordingly, theories or ideas reflect specific orientations. Philosophers of science tend to emphasize the procedures of science rather than those of a particular science. Sociologists of science view the scientific enterprise as a process involving a structurally related group, whereas psychologists tend to stress motivational and personality factors. Essentially the problem is one of scope reflecting the fragmentation of knowledge resulting from specialized

disciplines. As concerns the problem of scope, the situation is similar to that of the social sciences, in general: specialized studies have contributed to the depth of understanding, but the resulting fragmentation of knowledge has been costly in terms of breadth of understanding.” As a result, on the matter of scope, intellectual history (including the history of science) and the social sciences are in the same position.

Scientific endeavor is an aspect of social activity, and social scientists have been interested in ideas as a class of social phenomena. Given that both intellectual historians (including historians of science) and social scientists are interested in social phenomena, one would expect their research methodologies to be similar. Of course, this is not the case. The methodology of empirical science is reflected in the social sciences in general. Studies in intellectual history and the history of science, on the other hand, show a variety of methodological approaches. The methodologies of intellectual history and the social sciences differ in more subtle ways. The procedures of history, in contrast to the procedures of empirical sciences, are a clear distinction (Tarascio, 1975).

Popper (2005) exhibits an extreme naturalistic. He shares many philosophical viewpoints with Hempel (1965). However, there are also key theoretical disagreements. Popper, on the other hand, rules out sociological, psychological, or historical approaches to science as regressions, while Hempel attempts to reconcile the seeming differences between the methodologies of the

natural and social sciences. Although the premise for Popper's critique of these approaches to science study appears to be obvious, if not acceptable, when considered in a more rigorous context, it makes less sense.

To begin with, it is unclear whether Popper's argument is one of scope or one of methods.

According to Popper (1959), sociology and psychology of science are concerned with a part of scientific behavior in the same way that social sciences are concerned with a part of social behavior. Popper's critique does not appear to be founded on disciplinary specialization.

Sociological, psychological, and historical methods, on the other hand, emphasize the subjective components of scientific activity, and this appears to be their only common ground. History and social science methodologies are unquestionably different. As Hempel argues, there is no logical reason why sociological and psychological approaches to scientific behavior should not fall under the purview of empirical science. Popper's view of scientific behavior appears to be at odds with conceptions in domains that emphasize subjective components of scientific behavior.

The Hempel and Popper methods all take a "rationalistic" perspective on science and its history. Science has its "scientific man," just as economics has its (rational) "economic man." As a result, economic historians should be familiar with the latter concept: its behavior is very mechanistic. Indeed, Hempel and Nagel's preference for emphasizing the logical aspects of science resulted in a mechanistic picture. Whereas some economists were willing to regard "economic man" as a

theoretical notion or abstraction, others went on to treat it as a normative principle—a guideline for how real men should behave.

To sum, studies in intellectual history and science history indicate that they are in the same position in terms of scope but encompass a diversity of methodological methods. Intellectual history and social science methodologies differ in more subtle ways.

3.2.5 What is the relevance of methodology of science to the use of econometrics in social science research?

Scientists adopted Newton's laws of motion as a paradigm for conducting any other field of inquiry that claimed to be a science in the late 18th and early 19th centuries. This early version of a Standard Model later served as the foundation for parallels for the mathematical expression of phenomena such as cohesion, affinity, heat, light, electricity, and magnetism, which had previously been explored qualitatively (Heilbron, 1993). James Clerk Maxwell is well-known for employing a codified version of this analogy method in lectures, teaching, and experiment design (Turner, 1955). His electromagnetic theory, in turn, became the “prototype for all the great triumphs of twentieth-century physics...and for the unified theory of fields and particles that is known as the Standard Model of particle physics” (Fisher, 2010, p. 1). The Standard Model was used by economists to convey physics skills, especially when Maxwell established the value of understanding it in abstract mathematics rather than as a physical and literal mechanical analog.

The statistical approach to the Standard Model was brought to bear on the Standard Model by Haavelmo's probability approach in econometrics and R. Fisher's *Statistical Methods for Research Workers*, silently turning the perspective of economics and the social sciences relative to that of physics (Fisher, 2010). The existence of mathematical models and results in the social sciences that are structurally identical to those in the natural sciences suggests a foundation for a fundamental reorientation and reprioritization of methods in psychosocial research, as well as in any field where ordinal counts, ratings, or rankings are the form of observations that must be evaluated and transformed into linearly invariant measures (Andrich, 1988).

Discussions of econometric methodology have largely been 'local' affairs (Granger, 1990; Hendry, 2000; Pagan, 1987), with no concerted effort to integrate the discussions into broader philosophical science discussions about empirical modeling; notable recent exceptions include Hoover (2002), Keuzenkamp (2000), and Stigum (2003). Other social sciences, such as psychology, sociology, and even political science, have been more aware of philosophical/methodological difficulties related to statistical inference and modeling in some ways (Morrison and Henkel, 2017; Harlow, Mulaik, and Steiger, 2013).

Econometrics can be defined generally as “the application of mathematics and statistical methods to the analysis of economic data,” or more precisely, in the words of Samuelson, Koopmans, and Stone (1954, p. 142), “as the quantitative analysis of actual economic phenomena based on the concurrent development of theory and observation, related by appropriate methods of inference.”

Once it is recognized that the costs prevent us from conducting the "ideal" social experiment on a regular basis, there are numerous options for reducing costs. Some of them keep the experimental design but reduce the generalizability of the observed decision-making by moving from larger to smaller social trials and then down to laboratory experiments. Alternatively, we can use the nonexperimental research design to move away from the experiment while retaining some of the comprehensiveness of the time, place, and population examined. Both sorts of research efforts can be considered with the same (and relatively cheap) costs. The extent of artificiality in the experiment must be weighed against the quality and scope of the data provided for the non-experimental design. Because each method has its own set of strengths and shortcomings, it is helpful to know if the results are consistent across them when possible. That is, researchers believe that completing both types of research yields more information than focusing on one of the two ways in most circumstances.

The trade-off between experimental and non-experimental methods for analyzing social policies is as follows: a significant shift toward more experimental research will result in better evidence in some dimensions. However, there is significantly less evidence overall because fewer studies can be supported. Internal validity (confidence about the treatment effect) is a benefit of an experiment, but external validity and uncertainty about how to replicate the treatment have often disadvantages. Because the strengths and weaknesses of econometrics methodologies are opposites, combining the two approaches is preferable to relying solely on one. Nonetheless,

researchers' primary objective is to ensure that this premise is understood to maximize the value of social science research with any given budget; a significant percentage of the research portfolio must continue to be committed to non-experimental research methodologies such as econometrics. Because econometrics equations are a generally cost-effective research strategy and because they offer complementary benefits and disadvantages relative to the experiment, econometrics studies are widely used in the education sector, the marketplace, and by the government.

The most important thing to grasp is how tightly sound econometrics must be related to theory. The theory usually directs the model's basic specification, offers inspiration for what will be evaluated, and aids in the evaluation of the outcomes. Once you have a theoretical model and a dataset, there is a lot of additional definition and empirical diagnostic to undertake before you can get solid estimates. The model's application for hypothesis testing or prediction must thus be made with caution. Even the best econometrics model can not guarantee that its conclusions are correct. As a result, many policy applications of econometrics work require a comparison of numerous independent studies or, at the very least independent expert assessment. A better explanation of the study's implications and generalizability can result from some sensitivity to the potential policy uses of an econometrics study. Internal validity and the ability to construct treatments precisely are the strengths of the experiment, but budget constraints can severely limit

external validity or the ability to generalize beyond the experimental context (Ogunyinka and Tang, 2013).

Chapter 4

4 First Empirical analysis: Financial development, Financial structure, Financial liberalization, and Income Inequality.

This thesis employs panel data methods as econometric tools. When data on repeated cross sections are available, panel data methods are used to estimate parameters, compute partial effects of interest in nonlinear models, quantify dynamic linkages, and perform reliable inference. There are several advantages to using panel data: 1- Panel data can be used to represent both group behavior and individual behavior. 2- Compared to cross-sectional data, panel data typically has more degrees of freedom and sample heterogeneity. 3- Pure time series or cross-sectional data cannot detect or measure statistical effects, but panel data can. 4- Panel data can help to reduce estimation biases that might occur when groups are merged into a single time series (Clower, 2019). 5- Pure time series or cross-sectional data has less information, variability, and efficiency than panel data. 6- Controlling the impact of variables that have been left out (Hsiao, 2007). Data, variables, and summary statistics will be shown in the next subsection, followed by detailed methods, models, and data analysis.

4.1 Data, variables, and summary statistics.

A Group of 48 developed and developing countries from 1993 to 2017 were chosen for this research. The data is balanced, and the countries chosen are based on available data, notably income disparity and stock markets.

4.1.1 Income Inequality.

Stiglitz (2006, p. 8) argues: "59 percent of the world's people are living in countries with growing inequality, with only 5 percent in countries with declining inequality." Even in most developed countries, the rich are getting richer while the poor are often not holding their own. "

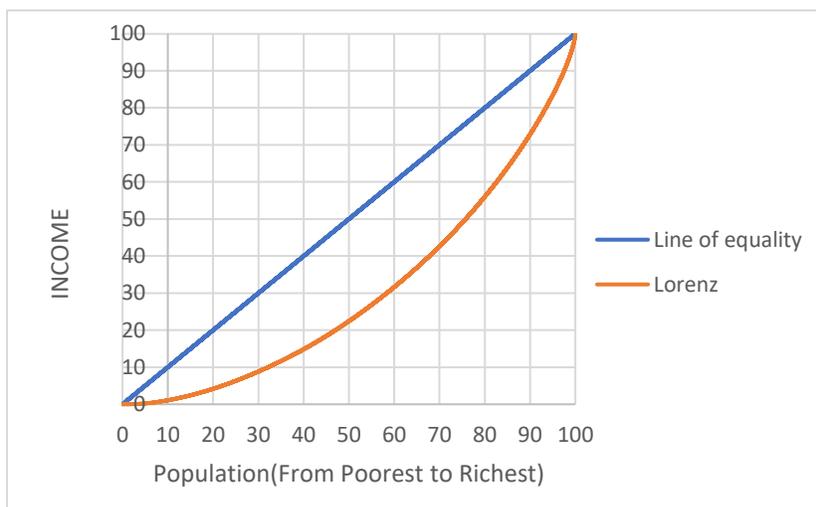
Inequality measures must possess specific characteristics and behave in a particular manner in reaction to specific occurrences. Inequality measures are often functions that provide a value for certain income distribution in a way that allows for direct and objective comparisons between distributions. Moving \$1 from a wealthy person to a poorer person, for example, should result in less inequality. Because no measure can satisfy all qualities, choosing one over the other entails trade-offs. The rates they meet and the information they convey differ in the following measures.

Lorenz curve

It is one of the most basic ways to express inequity. The cumulative number of income beneficiaries is listed from the lowest to the richest individual or household on the horizontal

axis. The cumulative proportion of total income is shown on the vertical axis. The Lorenz curve shows what percentage of the population accounts for what percentage of the total income. It is commonly depicted about a 45-degree line that shows perfect equality, in which each x percentile of the population has the same amount of income. As a result, the farther the Lorenz curve is from the 45-degree line, the more unequal the income distribution is.

Figure 3 Lorenz curve



The Lorenz Curve, which depicts the real distribution of income in a country, demonstrates that the poorest 20% of the population earns just 5% of the national income. In an ideal world, the poorest 20% of the population would earn 20% of the total income. The more bowed out a Lorenz Curve is, the greater the country's economic disparity.

Sources: Author

Gini index

It is the most often used measure of inequality; it determines how much an economy's distribution deviates from a completely equal distribution. The index is calculated as the ratio of the area beneath the 45-degree line to the area between the two curves (Lorenz curve and 45-degree line). Area A = (Between Lorenz curve and Line of equality). It is the same as $A/(A+B)$. A higher Gini coefficient indicates that the distribution is more unequal. The Gini runs from 0 (perfect equality) to 1 (perfect inequality). According to World Bank data, the Gini index fluctuated between 0.3 and 0.6 globally between 1981 and 2013 (World Bank, 2022).

Atkinson's inequality measure (or Atkinson's index)

The most often used welfare-based measure of inequality is Atkinson's index. It shows what proportion of total income a society would have to forego in order to achieve more equitable income distribution among its citizens. This metric is based on society's aversion to inequality (a theoretical parameter determined by the researcher), with a higher value indicating better social utility or individuals' willingness to accept lower incomes in exchange for more equitable distribution. The ability to divide the Atkinson index into within-group and between-group inequality is crucial. Furthermore, unlike other indices, it can show the welfare consequences of different policies and allows the researcher to integrate some normative content into the study (Bellù and Liberati, 2006). Measures like the Gini coefficient are not just statistical; they also include implicit judgments about how much weight to give to inequality at various income

levels. As a result, his index consists of a sensitivity parameter (ϵ), which can vary from 0 (indicating that the researcher is unconcerned with the nature of the income distribution) to infinity (where the researcher is concerned only with the income position of the very lowest income group).

Hoover index (also known as the Robin Hood index, Schutz index, or Pietra ratio)

It depicts the fraction of total income that would need to be transferred in order to attain perfect equality. In other words, the index's value approximates the proportion of total income that must be moved from households above the mean to those below the mean in order to establish income equality. Higher values imply greater inequity and the need for further redistribution to attain economic equality. The maximum vertical distance between the Lorenz curve and the 45-degree line that reflects perfect income equality can be visually illustrated.

Decile dispersion ratio (or inter-decile ratio)

It is the ratio of the richest x percent of the population's average income to the poorest x percent's average income. It expresses the rich's income (or income share) as a multiple of the poor.

Extreme values and outliers, on the other hand, make it susceptible. D9/D1: ratio of the income of the 10% wealthiest to the income of the 10% poorest; D9/D5: ratio of the income of the 10% richest to the income of those at the median of the earnings distribution; D5/D1: ratio of the income of those at the median of the earnings distribution to the 10% poorest.

Palma ratio

It is the ratio of the top 10% of households' national income shares to the poorest 40% of households' national income shares. It is based on economist José Gabriel Palma's empirical observation that differences in income distribution between countries (or over time) are largely the result of changes in the 'tails' of the distribution (the poorest and richest), as the share of income going to the middle tends to be relatively stable (Cobham, Schlogl and Sumner, 2015).

20/20 ratio

It compares the ratio of the average income of the richest 20% of the population and the average income of the lowest 20%. The "income quintile ratio" is a term used by the United Nations Development Programme's Human Development Report.

Theil index

The Theil index is a statistic that has been used to quantify racial segregation as well as economic inequality and other economic problems. In information theory, the Theil index T equals redundancy, which is the greatest potential entropy of the data minus the observed entropy. The GE class of measures has values ranging from zero (perfect equality) to infinity (or one, if normalized). These measurements have the advantage of being fully decomposable, which means that inequality may be broken down by population groupings, income sources, or other dimensions, which can be beneficial to policymakers.

Mean log deviation

The mean log deviation (MLD) is a measure of income disparity used in statistics and econometrics. When everyone has the same income, the MLD is zero; as incomes become more uneven, the MLD becomes greater positive values, especially towards the high end.

Coefficient of variation

The coefficient of variation (CV) is defined as the ratio of the standard deviation to the mean. The standard deviation of the income distribution is divided by the mean to produce this measure of income disparity. Standard deviations will be less under more equal income distributions, and the CV will be smaller.

In this research, the dependent variable is the Gini coefficient based on household income from Solt, F. (2020) Standardized World Income Inequality Database (SWIID), as in most other research as stated in Chapter 2. The SWIID uses a Bayesian approach to standardize data from the OECD Income Distribution Database, the Socio-Economic Database for Latin America and the Caribbean generated by CEDLAS and the World Bank, Eurostat, the World Bank's Povcal Net, the UN Economic Commission for Latin America and the Caribbean, national statistical offices around the world, and many other sources. Luxembourg Income Study data serves as the standard. The SWIID can be used in two ways. To compare the estimated levels and trends of (a) inequality in disposable (post-tax, post-transfer) income, (b) market (pre-tax, pre-transfer)

income inequality, (c) absolute redistribution (market-income inequality minus net-income inequality), or (d) relative redistribution (market-income inequality minus net-income inequality) in up to four countries (market-income inequality minus net-income inequality, divided by market-income inequality).

The SWIID database, as noted by Delis et al. (2014) and Solt (2015), is the complete database that enables cross-country comparisons since it standardized income. Because it gives equivalent Gini indexes of net income inequality based on disposable household income, the SWIID is the preferred measure of income inequality in this thesis. The Gini index Disposable (post-tax, post-transfer) is used in this research. The SWIID has a problem because values are approximated, and missing values are imputed. A bar chart in Figure 4 compares average Gini coefficients across regions. The average coefficients are sorted in ascending order according to the lowest to highest Gini coefficients, as shown in the graph. At first glance, the figures for Europe and Central Asia, with an average Gini coefficient of 28.9, show low inequality. In contrast, the figures for Latin America and the Caribbean, with a coefficient of 48.4, show the highest inequity between 1993 and 2017.

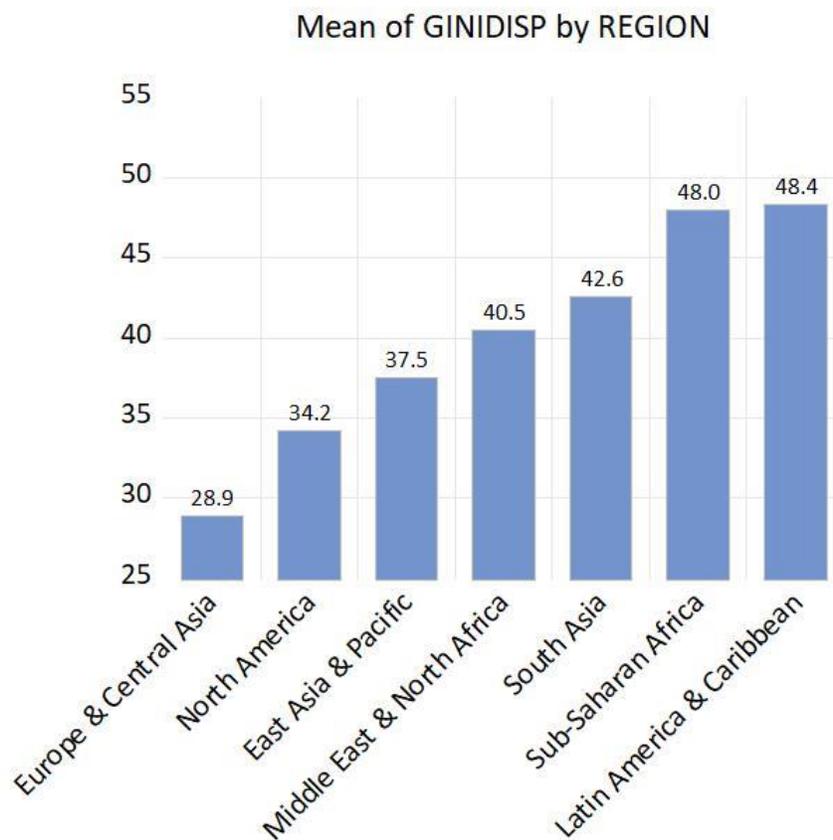


Figure 4: Average Gini coefficients across regions 1993 - 2017

Source: SWIID, Calculation: Author

In Figure 5, the bar chart shows the average coefficients on an income group basis. The graph is sorted in ascending order. At a glance, the graph shows that high-income countries with a

coefficient of 32.8 have low inequality compared to lower-middle-income and upper-middle-income countries with a coefficient of 42.2 and 45.6, respectively.

Mean of GINIDISP by INCOME

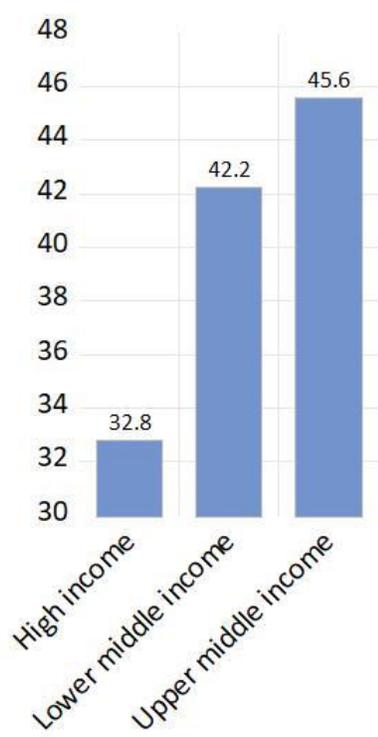


Figure 5: Average Gini coefficients on an income group 1993 - 2017

Source: SWIID, Calculation: Author

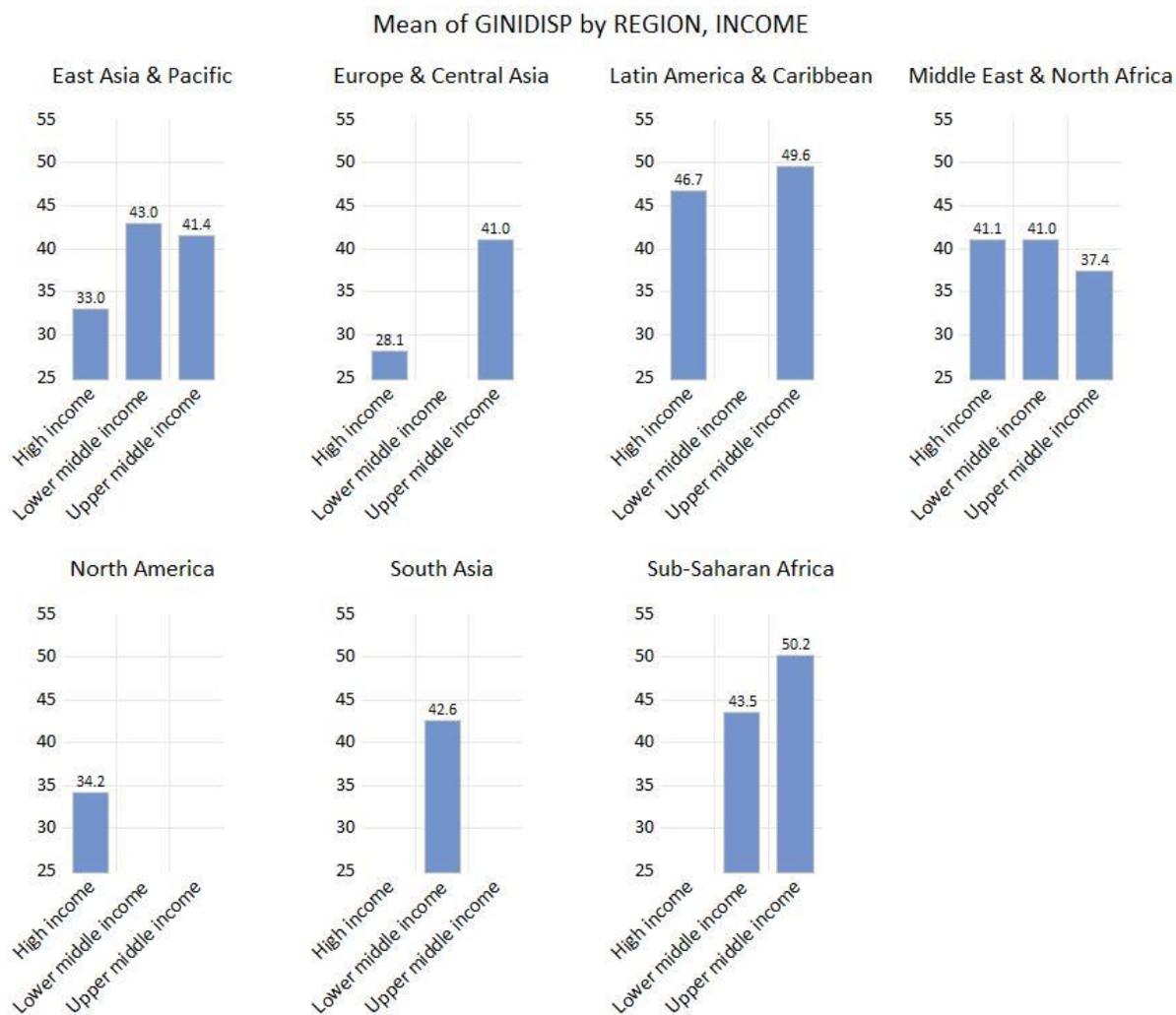


Figure 6: Average Gini coefficients by income group across regions 1993 - 2017

Source: SWIID, Calculation: Author

In multiple graphs, Figure 6 depicts the distribution of average Gini coefficients by income group. As can be seen from the graph, the figure for Sub-Saharan Africa shows that the upper middle-income countries with an average Gini coefficient of 50.2 have the highest. The high-income countries in Europe and Central Asia, with an average coefficient of 28.1, have the lowest. Table 2 shows some summary data for the Gini coefficients calculated using SWIID. The highest Gini average of 45.59 and the maximum Gini of 63.60 belong to upper middle-income countries. The lowest Gini average of 32.77 and the minimum Gini of 21.90 belong to high-income countries. Figure 6,7, and 8 depicts the Gini coefficients by region and income group.

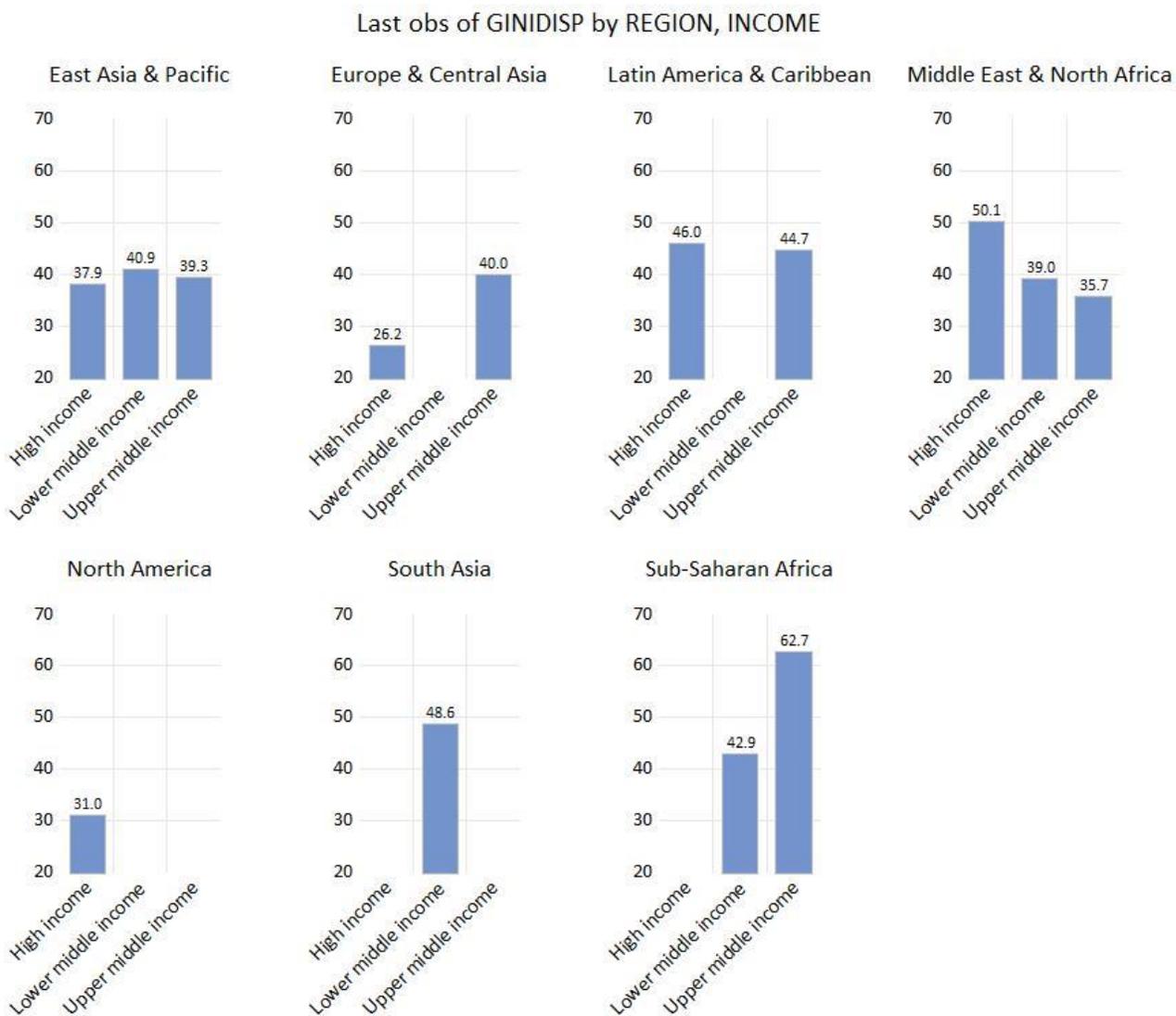


Figure 7: Latest (2017) Gini coefficients by income group across regions

Source: SWIID, Calculation: Author

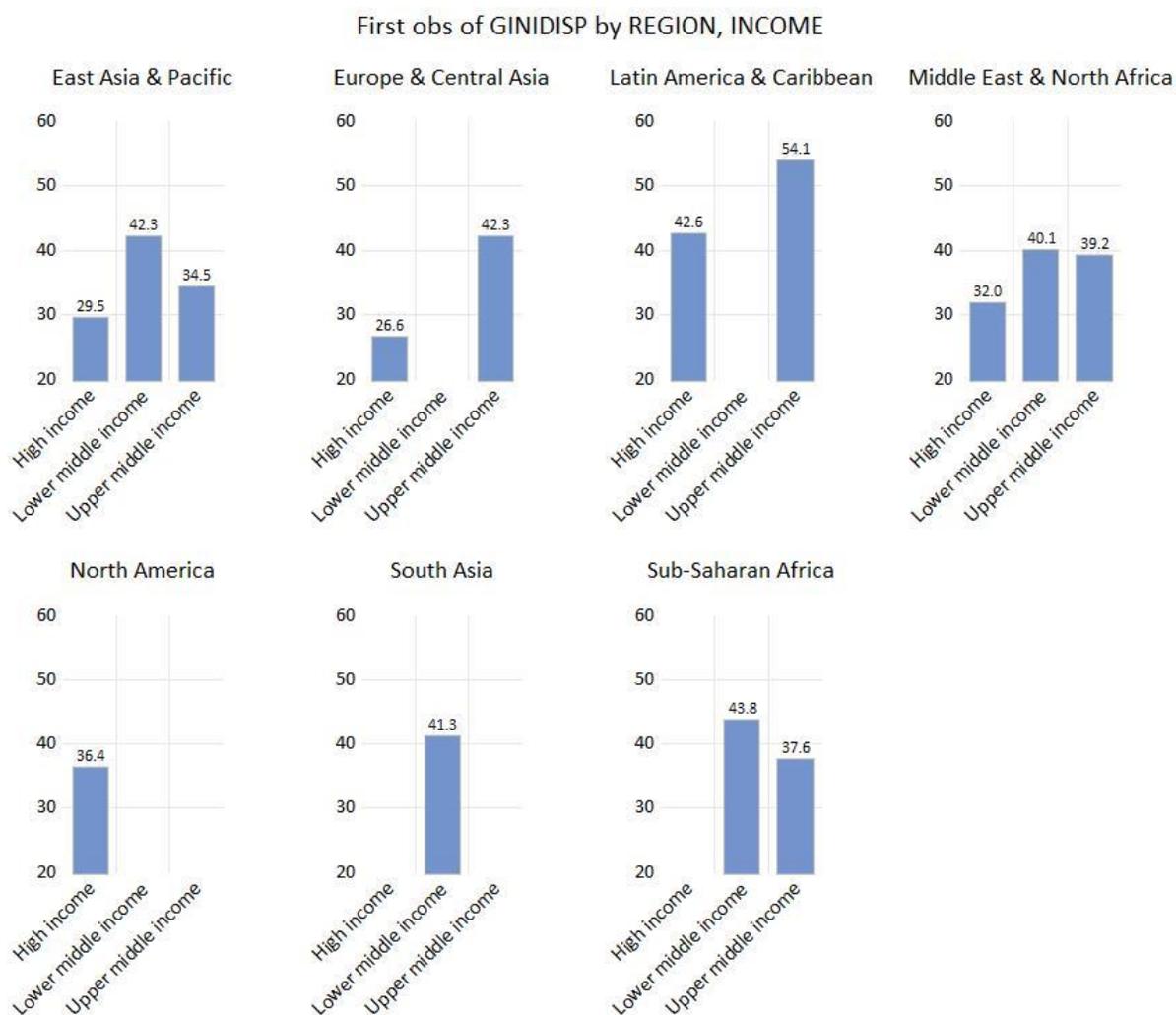


Figure 8: Earliest (1993) Gini coefficients by income group across regions

Source: SWIID, Calculation: Author

Descriptive Statistics for GINIDISP

Categorized by values of INCOME

Sample: 1993, 2017

Included observations: 1200

INCOME	Mean	Max	Min	Std. Dev.	Obs.
High income	32.77626	51.40000	21.90000	7.386270	700
Lower middle income	42.24325	50.00055	34.00000	3.828405	225
Upper middle income	45.59386	63.60000	34.00000	7.405957	275
All	37.48869	63.60000	21.90000	8.908010	1200

Table 2: Descriptive Statistics for GINI

Source: SWIID, Calculation: Author

4.1.2 Explanatory variables.

As can be seen in table 3, several variables were chosen from various sources to estimate the optimal model to address the objectives of this study using econometric methods. The World Bank's Global Financial Development Database (GFDD, 2019) was used to compile the financial data. The Global Financial Development Database contains information on economies' financial systems. It includes annual data dating back to 1960. It was last updated in November 2021, and it contains data for several indicators that cover various elements of financial institutions and markets through 2020 (Global Financial Development Database, 2022). As was described in chapter 2, since the 1970s, most empirical work has approximated financial development using two measures of financial depth: the ratio of private credit to GDP and, to a lesser extent, the ratio of stock market capitalization to GDP. To address the limitations of single variables as proxies for financial development, Svirydzenka (2016) develops a series of indices that describe the depth, access, and efficiency of established financial institutions and financial markets, culminating in a final financial development index (Figure 9).

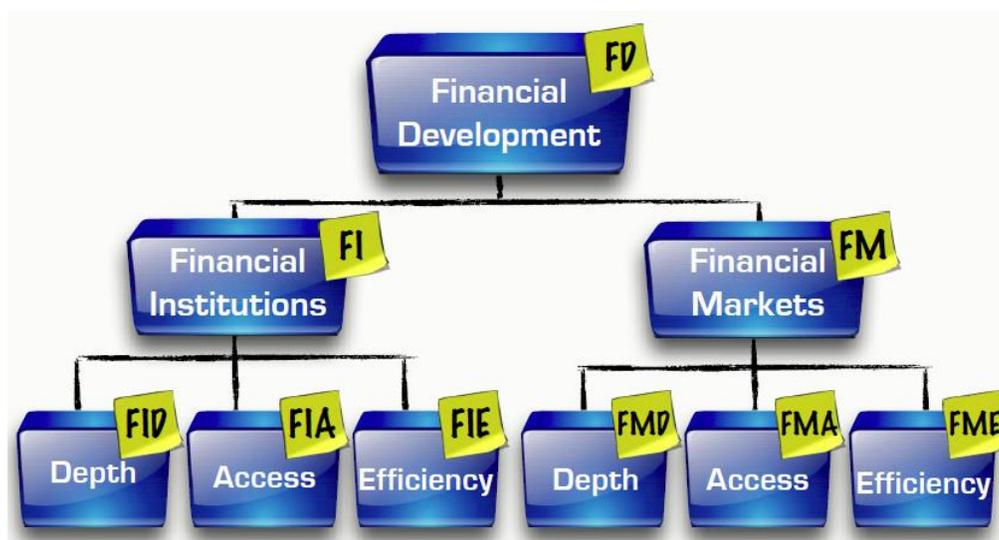


Figure 9: Financial Development Index Pyramid

Source: IMF staff, based on Čihák et al. (2012)

Starting at the bottom of the pyramid in Figure 9, a set of variables is used to create six lower-level sub-indices that quantify how deep, accessible, and efficient financial institutions and financial markets are. *FID*, *FIA*, *FIE*, *FMD*, *FMA*, and *FME* are the sub-indices, with the letters I and M denoting institutions and markets and the letters D, A, and E denoting depth, access, and efficiency. These sub-indices are combined into two higher-level sub-indices, *FI* and *FM*, that assess the overall development of financial institutions and financial markets. Finally,

the *FI* and *FM* sub-indices are combined to create the *FD* index, a broad indicator of financial development (Sviryzdenka, 2016). Higher *FD* levels imply more developed financial systems.

Table 3 shows the data summary statistics for financial development indices.

	<i>FD</i>	<i>FI</i>	<i>FM</i>	<i>FID</i>	<i>FIA</i>	<i>FIE</i>	<i>FMD</i>	<i>FMA</i>	<i>FME</i>
Mean	0.517044	0.538713	0.479624	0.449227	0.445634	0.632468	0.640582	0.415247	0.481920
Median	0.494427	0.519367	0.448047	0.405253	0.380828	0.645660	0.648793	0.358467	0.458449
Maximum	1.000000	1.000000	1.000000	1.000000	1.000000	0.859625	1.000000	0.989499	1.000000
Minimum	0.133723	0.113201	0.034264	0.039609	0.040826	0.082859	0.082859	0.015215	0.000631
Std. Dev.	0.213558	0.227662	0.226381	0.291276	0.272884	0.105641	0.129393	0.270834	0.245234

Table 3: Summary statistics for the Financial Development Indices

Higher FD levels imply more developed financial systems.

Source: World Bank, Calculation: Author

In the bar chart below (Figure 10), between 1993 and 2017, the numbers for the mean financial development in 48 countries are shown. As can be seen in the graph, the figure for Switzerland is the highest. Tunisia and Nigeria have the lowest numbers among the countries.

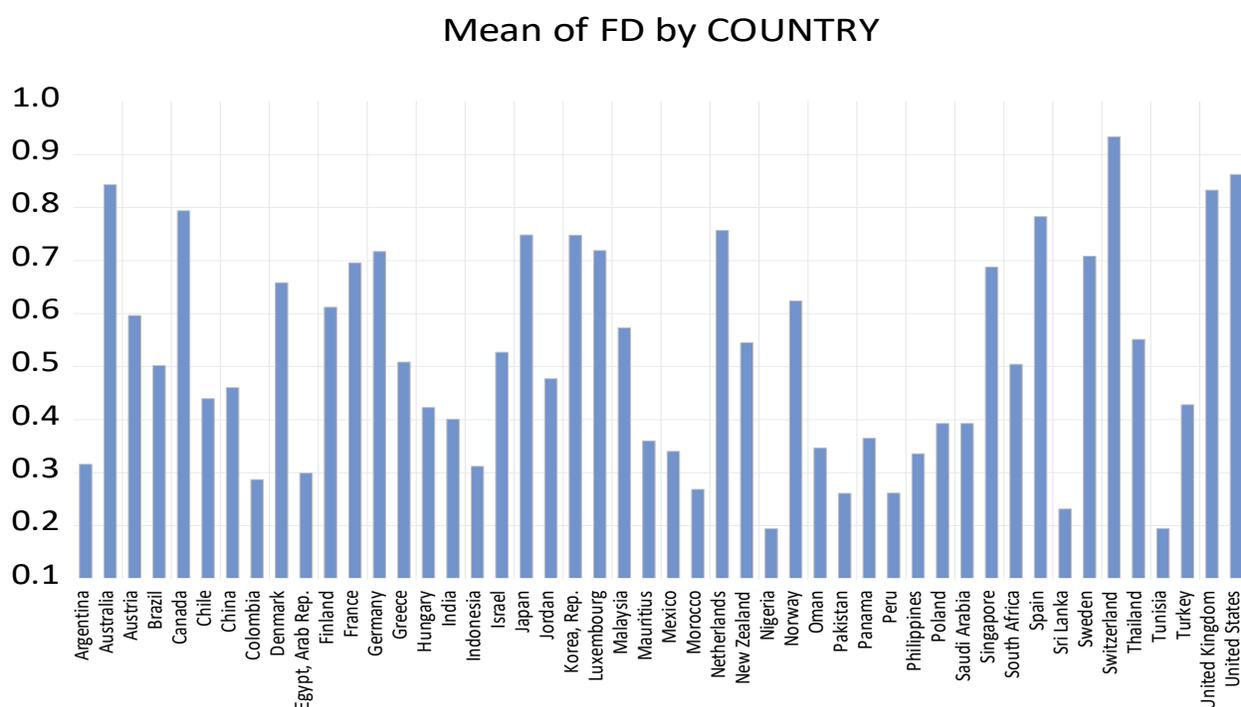
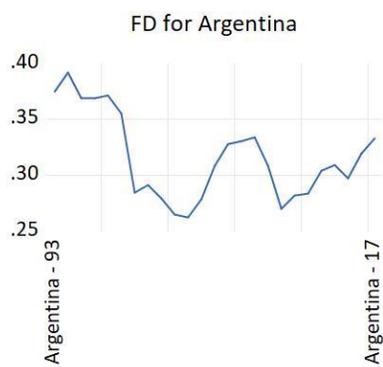


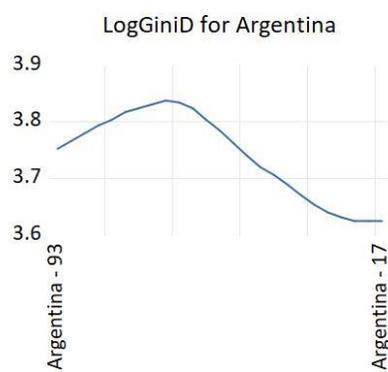
Figure 10: Mean of Financial Development By country (1993 – 2017)

Source: World Bank, Calculation: Author

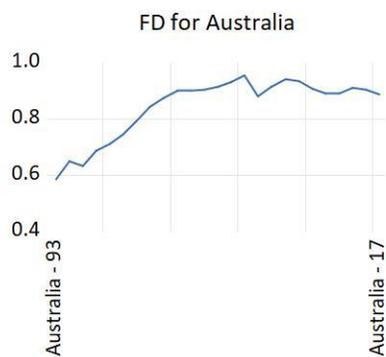
Categorization by COUNTRY



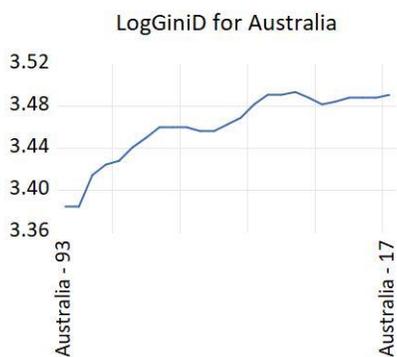
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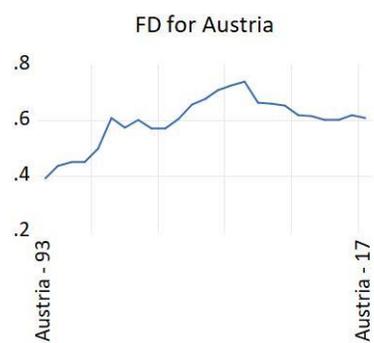
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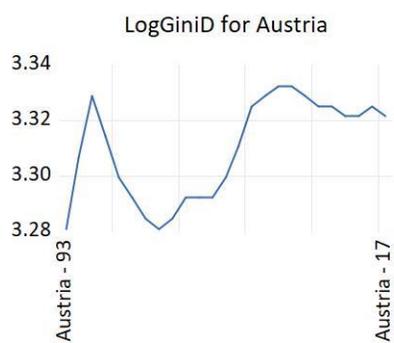
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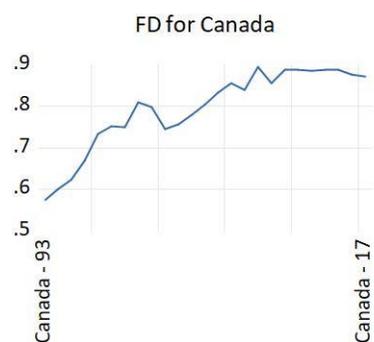
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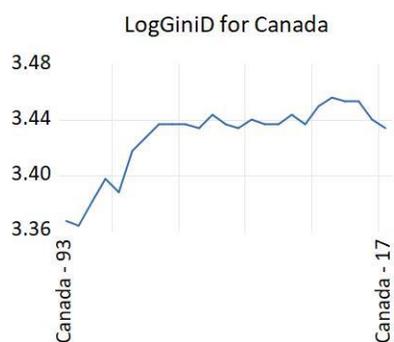
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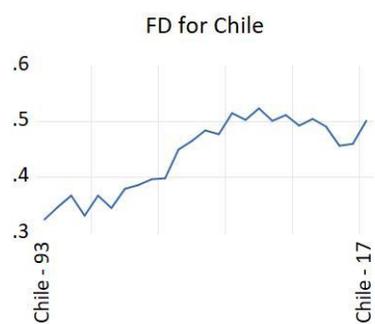
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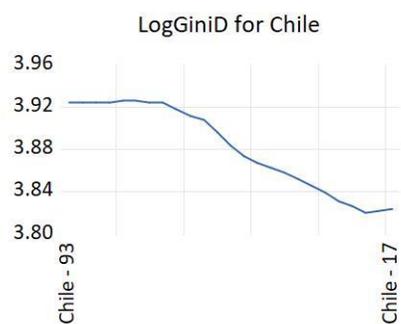
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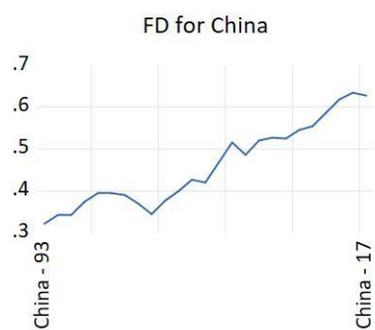
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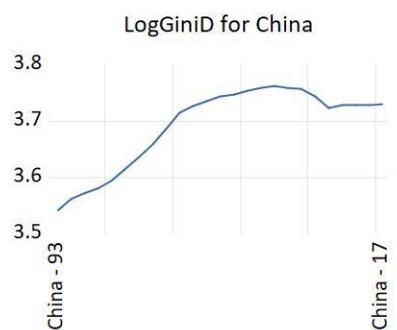
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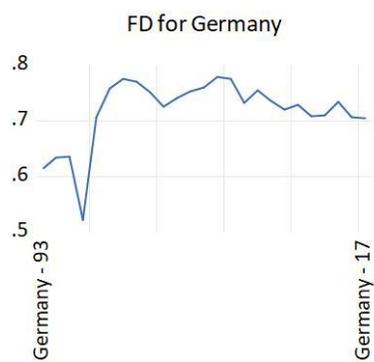
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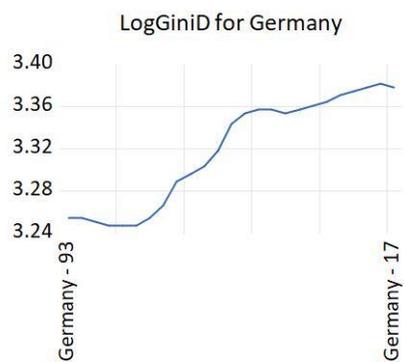
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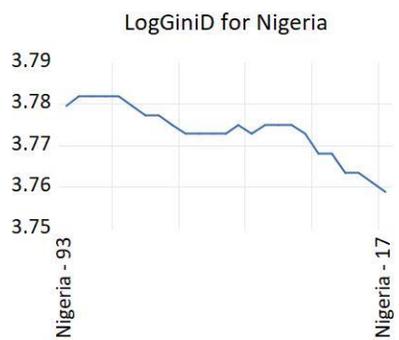
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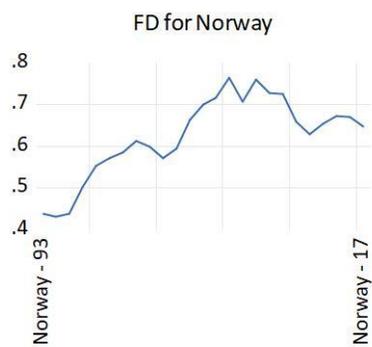
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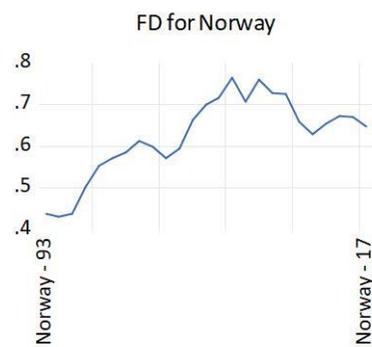
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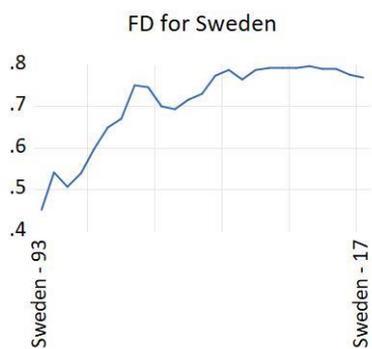
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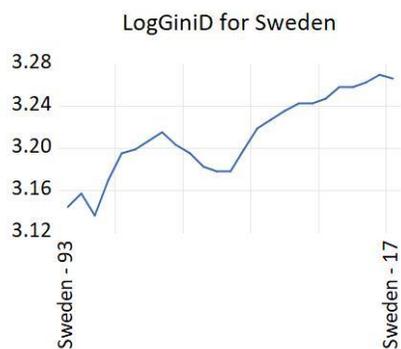
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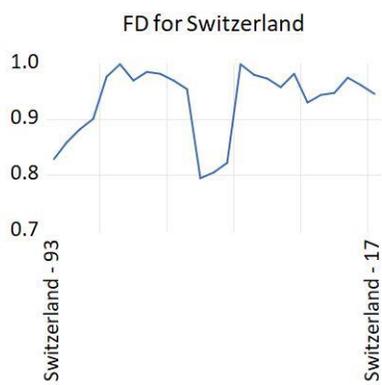
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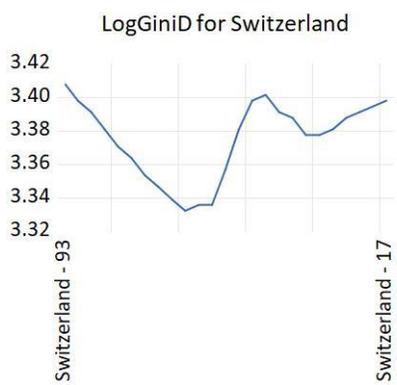
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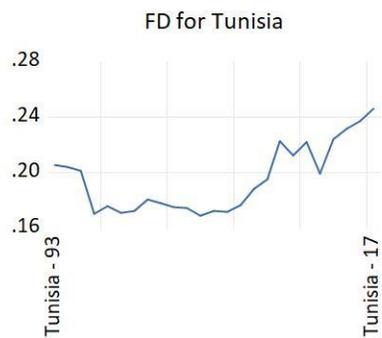
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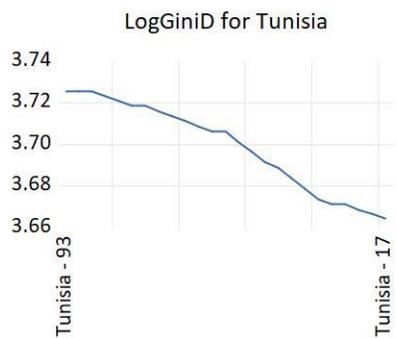
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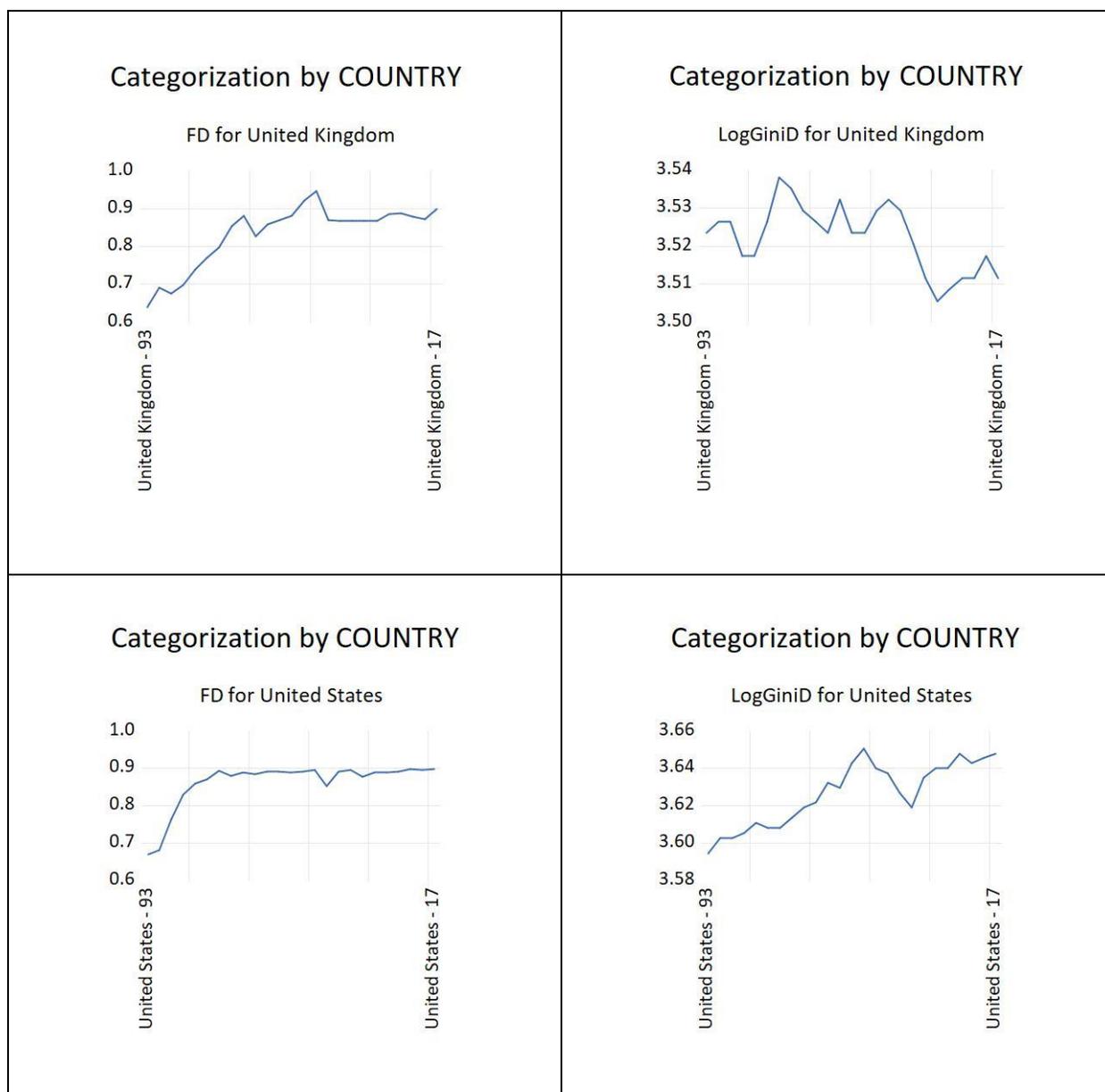


Figure 11: Gini and FD trends 1993 to 2017

Source: World Bank, Calculation: Author

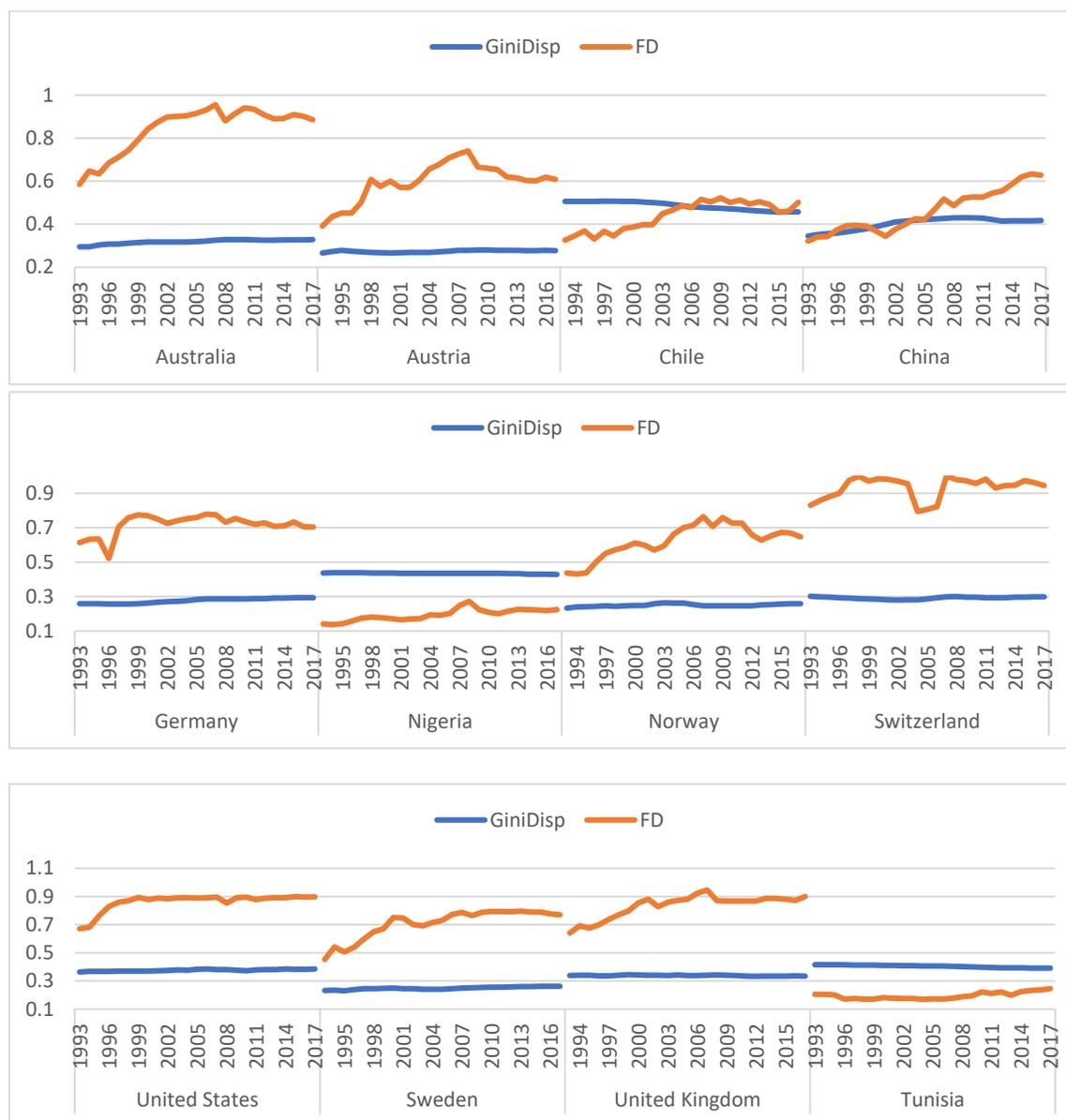


Figure 12: Gini and FD trends 1993 to 2017

Source: World Bank, Calculation: Author

Figure 11 & 12 shows the Gini and *FD* trends over time for 12 and 14 randomly selected countries, respectively, from 1993 to 2017. The Gini index fell over time in Chile, but the *FD* climbed. In China, on the other hand, inequality has risen while financial development has accelerated.

Because no universally recognized quantitative definition of financial structure exists, following Beck and Levine (2002), Levine (2002), and Tadesse (2002), a composite measure of the comparative importance of banks and markets is used as an indicator of financial structure. The first principal component (PC1) was a statistical approach used to generate *FPS* (First Principal Component of Structure-Activity and Structure-Size) of two variables, *SA* (Structure-Activity) and *SS* (Structure-Size), that measure the comparative activity and size of markets and banks.

One of the most often used multivariate statistical approaches nowadays is principal component analysis (PCA). When analyzing data with multi-collinearity between features/variables, the PCA approach comes in handy. When the dimensions of the input characteristics are large, PCA can be applied (e.g., a lot of variables). PCA may also be used for data compression and denoising. It is a statistical approach known as factor analysis that has been widely employed in the fields of pattern recognition and signal processing. PCA is the foundation of projection-based multivariate data analysis. The most common use of PCA is to represent a multivariate data table as a smaller number of variables (summary indices) so that trends, jumps, clusters, and outliers may be observed. The links between observations and variables, as well as among the variables,

may be shown in this overview. The projected data are simply linear combinations of the original data, capturing the majority of the data volatility (Jolliffe 2002).

Table 4 shows the various indices for all 48 countries in our study from 1993 to 2017. The first variable, *FA* (Finance-Activity), equals the log of the ratio of *VaTra* (value traded) to *BanCr* (bank credit) and represents the relative importance of markets to banks in terms of activity. The value of stock transactions as a proportion of GDP is known as value traded. As a proportion of GDP, bank credit represents the banking industry's claims on the private sector. The next variable, *FS* (Finance-Size), equals the log of the ratio of *MaCap* (market capitalization) to *BanCr* (bank credit) and reflects the importance of markets in relation to banks in light of their size.

<i>Variables</i>	Name	Description
<i>GiniDisp</i>	Gini index Disposable (post-tax, post-transfer)	Estimate of Gini index of inequality in equivalized (square root scale) household disposable (post-tax, post-transfer) income, using Luxembourg Income Study data as the standard.
<i>GiniMkt</i>	Gini index Market (pre-tax, pre-transfer)	Estimate of Gini index of inequality in equivalized (square root scale) household market (pre-tax, pre-transfer) income, using Luxembourg Income Study data as the standard.

WIID - Gini		
LogGiniD	Log Gini index Disposable	
LogGiniM	Log Gini index Market	
BanCr	Bank Credit	The financial resources provided to the private sector by domestic money banks as a share of GDP. Domestic money banks comprise commercial banks and other financial institutions that accept transferable deposits, such as demand deposits.
PriCr	Private credit	Private credit by deposit money banks and other financial institutions to GDP.
MaCap	Market Capitalization	The total value of all listed shares in a stock market as a percentage of GDP.
VaTra	Value Traded	The total value of all traded shares in a stock market exchange as a percentage of GDP.
SA	Structure-Activity	the activity of stock markets relative to the activity of banks
SS	Structure-Size	the size of stock markets relative to the size of the banking sector

<i>FA</i>	Finance-Activity	a measure of the overall activity of the financial intermediaries and markets.
<i>FS</i>	Finance-Size	a measure of the overall size of the financial sector
<i>FPS</i>	The first principal component of Structure-Activity & Structure-Size	<i>FPS</i> is the first principal component of two variables that measure the comparative activity and size of markets and banks
<i>FD</i>	Financial Development	Single indicators as proxies for financial development.
<i>FI</i>	Financial Institutions	Indicators as proxies for financial development. Financial institutions include banks, insurance companies, mutual funds, pension funds, and other types of nonbank financial institutions.
<i>FM</i>	Financial Markets	Indicators as proxies for financial development. Financial markets include mainly stock and bond markets.
<i>FID</i>	Financial Institutions Depth	Each indicator is normalized between 0 and 1. Thus, the highest (lowest) value of a given variable across time and countries is equal to one (zero), and all other values are measured relative to these maximum (minimum) values. To avoid pitfalls arising from extreme observations, the data are minorized with the 5th and 95th percentiles as the cut-off levels.

		The indicators are defined so that higher values indicate greater financial development.
FIA	Financial Institutions Access	
FIE	Financial Institutions Efficiency	
FMD	Financial Markets Depth	
FMA	Financial Markets Access	
FME	Financial Markets Efficiency	
GdpPcap	GDP per Capita (Constant 2005 USD)	Gross domestic product (GDP) per capita is a financial metric that breaks down a country's economic output per person and is calculated by dividing the GDP of a nation by its population.
LogGdpPca	Log (GDP per Capita (Constant 2005 USD))	
LER	Lerner index	the difference between output prices and marginal costs in banking

<i>BOO</i>	Boone indicator	the elasticity of profits to marginal costs, assesses the influence of efficiency on performance in terms of profits
<i>Edu</i>	Education	the secondary education enrollment from WDI
<i>LogEdu</i>	Log Education	the (log of) secondary education enrollment from WDI
<i>EXP</i>	Exports	Exports of goods and services (% of GDP)
<i>IM</i>	Imports	Imports of goods and services (% of GDP)
<i>LogSEI</i>	Log Sum of (EXP & IM)	the (log of the) sum of exports and imports as a percentage of GDP , to capture the effect of trade openness
<i>Reg</i>	Regulation	a composite index that measures the freedom from government rules and restrictions in the labor market, credit markets, and pricing controls in the products and services sectors.
<i>LMR</i>	Labor market regulations	a measure of labor market freedom from government regulations and constraints

Table 4: Variables

Source: World Bank, SWIID, The Fraser Institute's Economic Freedom of the World database, the World Development Indicators (WDI) of the World Bank Calculation: Author

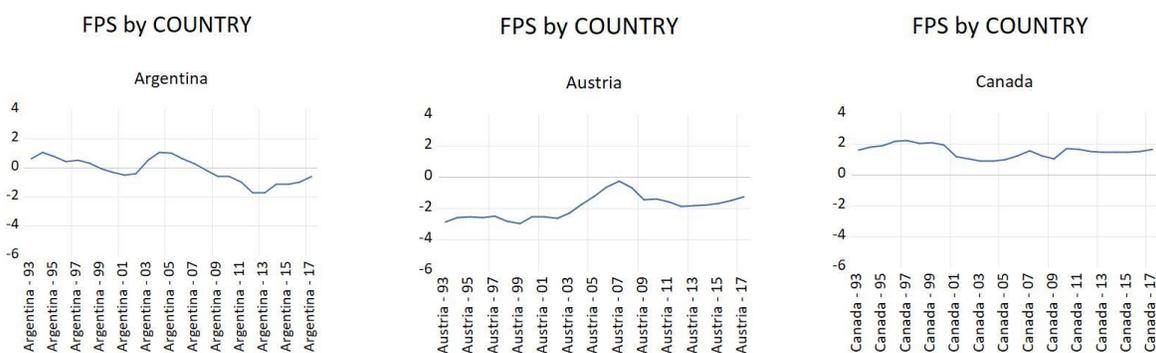
Table 5 presents descriptive statistics of *FPS* (First Principal Component of Structure-Activity and Structure-Size), *SA* (Structure-Activity), and *SS* (Structure-Size). The value of listed shares divided by GDP gives market capitalization. Larger, more liquid, more active stock markets, and hence more market-based financial systems, are associated with higher *FPS* values. *FA* (Finance activity) is employed as a measure of the total activity of financial intermediaries and markets and equals the log of the product of (*PriCr*) private credit and (*VaTra*) value traded, according to Beck and Levine (2002), Levine (2002), and Tadesse (2002). *FS* (Finance-Size) is also a measure of the financial sector's overall size, equaling the log of the sum of *PriCr* (private credit) and *MaCap* (market capitalization). The value of credit granted to the private sector by financial intermediaries divided by GDP is known as (*PriCr*) private credit.

	<i>FPS</i>	<i>SA</i>	<i>SS</i>	<i>FS</i>	<i>FA</i>
Mean	3.06E-16	-0.553743	-0.071901	2.052959	2.969314
Median	0.169760	-0.440920	-0.056146	2.103747	3.052067
Maximum	3.353523	1.012208	0.707613	2.672346	4.788028
Minimum	-4.532266	-2.886849	-1.229444	1.014478	-0.178384
Std. Dev.	1.213841	0.611041	0.316244	0.316634	0.934933

Table 5: Descriptive statistics - From 1993 to 2017 (25 years)

Source: World Bank, The World Development Indicators (WDI) of the World Bank Calculation: Author

From 1993 to 2017, Figure 13 depicts the *FPS* trends for 12 randomly selected countries. Higher values indicate that the country is more market-based than countries with lower *FPS*. The figures for the United States fluctuated by approximately two over this time. This demonstrates that the United States has a more market-based financial system. Canada and South Africa, as may be seen, are also more market-based. While Panama's *FPS* ranged from about -3, indicating that the country is more bank-based.



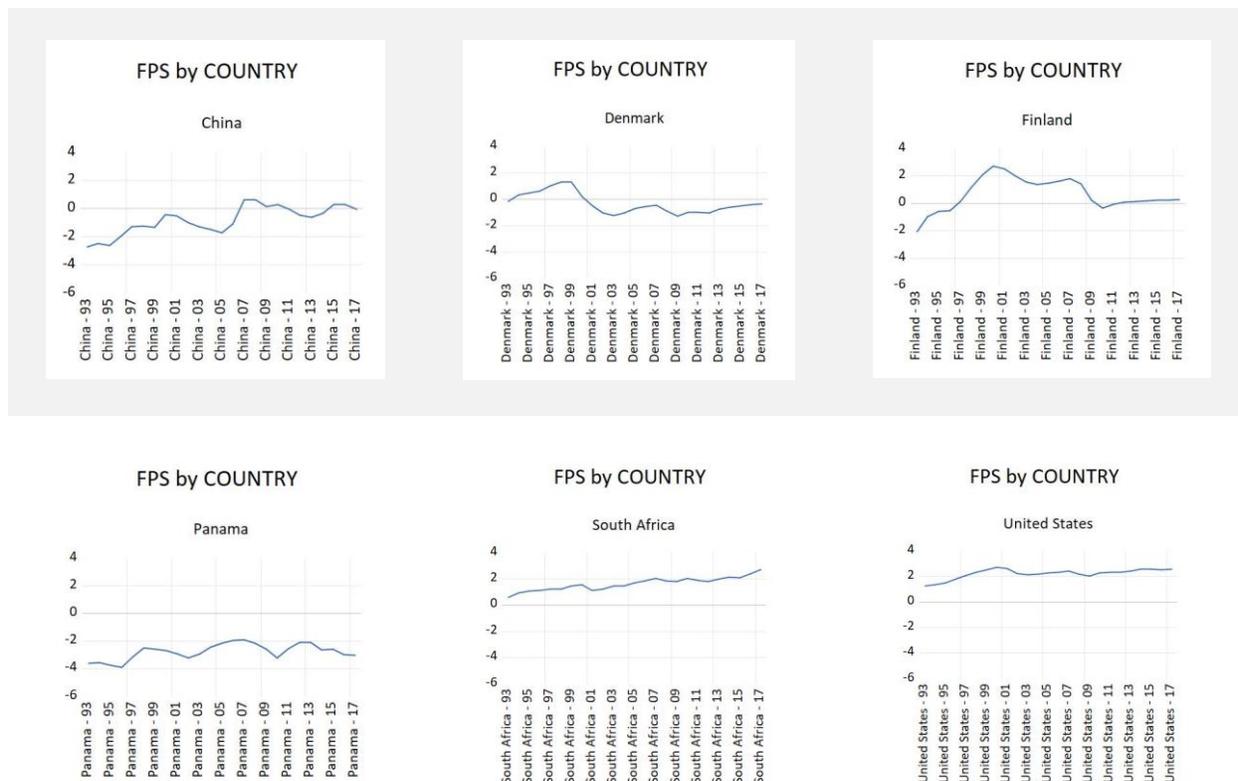


Figure 13: First Principal Component of Structure-Activity and Structure-Size

Larger, more liquid, more active stock markets, and hence more market-based financial systems, are associated with higher FPS values.

Source: World Bank, The World Development Indicators (WDI) of the World Bank Calculation: Author

The Lerner index (*LER*), the difference between output prices and marginal costs in banking, measures bank competition based on markups (relative to prices). (Lerner index = $P - MC/P$), where P denotes the firm's set price for the item, and MC denotes the firm's marginal cost.

Essentially, the index evaluates a company's ability to charge a percentage markup above its marginal cost. The index has a low value of 0 and a high value of 1. The higher the Lerner index, the more the corporation may charge above its marginal cost, hence the more monopolistic power it has. The Boone indicator (*BOO*), computed as the elasticity of profits to marginal costs, assesses the influence of efficiency on performance in terms of profits. $\ln \pi_{it} = \alpha + \beta \ln MC_{it}$ where π_{it} is the profit of the *i*-th bank at time *t*, MC_{it} is the marginal costs for the *i*-th bank at time *t*. Lower levels of competition are indicated by higher Lerner index and Boone indicator readings. Price behavior measures such as the Lerner index and the Boone as indicators of bank competitiveness have been used by Carbo, Rodriguez-Fernandez, and Udell (2009) and Love and Martinez Peria (2015).

To examine the inequality effect of government regulation, the regulatory quality indicator is used from the Fraser Institute's Economic Freedom of the World database. The Fraser Institute provides the index in Economic Freedom of the World to assess how supportive countries' policies and institutions are of economic freedom. Personal choice, voluntary exchange, freedom to enter markets and compete, and security of the person and privately owned property are the pillars of economic freedom. Economic freedom is assessed across five key categories. Area 1: Size of Government. Area 2: Legal System and Property Rights. Area 3: Sound Money. Area 4: Freedom to Trade Internationally. Area 5: Regulation. Governments can employ a variety of techniques to limit the ability to exchange internationally, as well as impose onerous rules that

restrict the ability to exchange, acquire credit, hire or work for whom you want, or run your business freely. In this thesis, two sub-indices were used to measure freedom from government regulations (*Reg*) and controls in the labor market (*LMR*), with higher values indicating friendlier regulation. *Reg* is a composite index that measures the freedom from government rules and restrictions in the labor market, credit markets, and pricing controls in the products and services sectors. *LMR* measures labor market freedom from government regulations and constraints (Gwartney, Lawson, and Hall, 2021). Table 6 presents the summary statistics of government regulations (*Reg*) and labor market regulations (*LMR*). Appendix Table 18 depicts variations across countries and over time for *Reg*.

	<i>REG</i>	<i>LMR</i>
<i>Mean</i>	7.039199	6.201712
<i>Median</i>	7.174819	6.045746
<i>Maximum</i>	10.98540	11.73416
<i>Minimum</i>	3.343768	2.559696
<i>Std. Dev.</i>	1.174764	1.484617

Table 6: Descriptive statistics of government regulations (*Reg*) and labor market regulations (*LMR*)

Source: Fraser Institute's Economic Freedom of the World database Calculation: Author

Figure 14 shows the mean government regulation (*Reg*) and labor market regulations (*LMR*) in 48 countries between 1993 and 2017. The countries with the largest regulation are the United States, the United Kingdom, Singapore, Saudi Arabia, and New Zealand, with an average of around 8.5. In contrast, the index for Spain and Egypt has the smallest, at a little less than 5. Greece, Turkey, Indonesia, Korea, Morocco, Norway, and Israel all have labor market regulation indexes of around 4.5, while Saudi Arabia has a labor market regulation score of over 9.

The data analysis is being done with Stata 16.0 and EViews 12. The author manages the panel settings of a dataset before moving on. Table 7 declares memory data to be a panel in which the sequence of observations matters. The delta indicates the time interval between observations in time var units, which is specified as one year.

Panel variable:	ID (strongly balanced)
Time variable:	year, 1993 to 2017
Delta:	One year

Table 7: The panel settings of a dataset

Calculation: Author

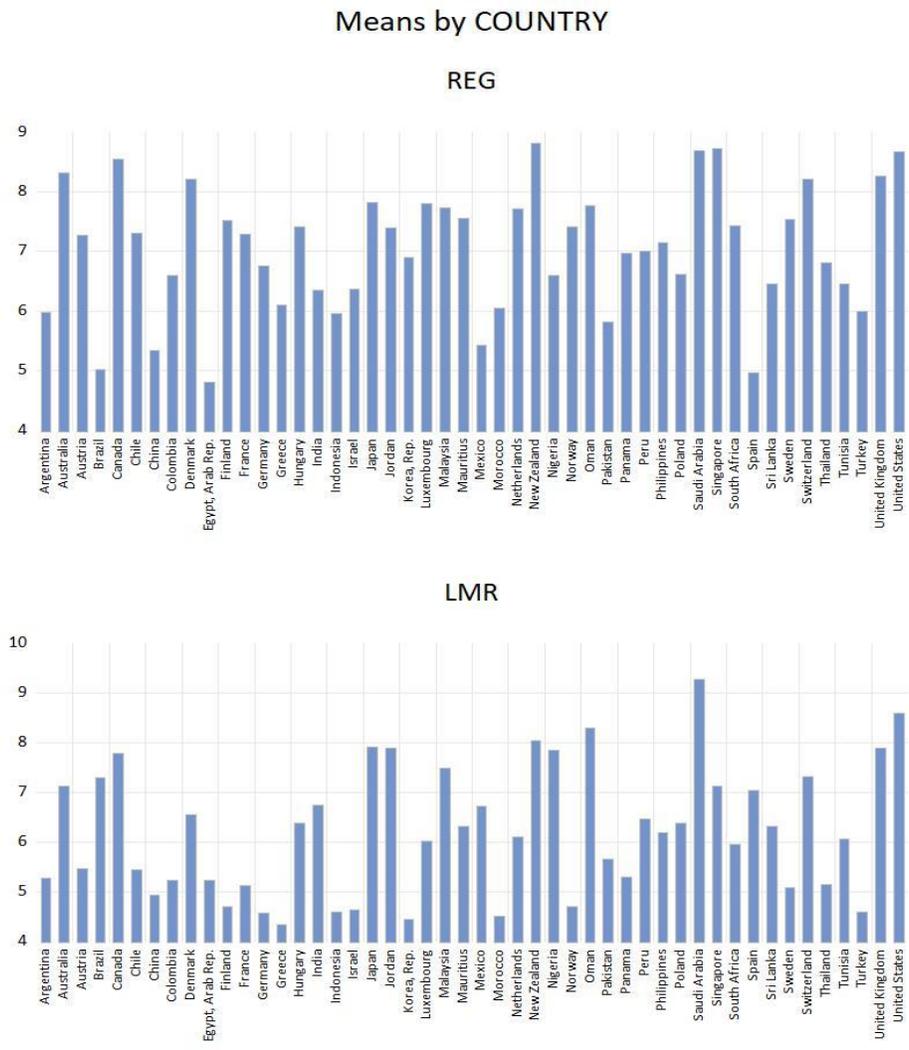


Figure 14: The average of government regulations (Reg) and labor market regulations (LMR) in 48 countries (1993–2017).

Source: Fraser Institute's Economic Freedom of the World database Calculation: Author

Other variables in this study include one-period lagged (log) real income per capita to account for the influence of economic development on distribution and trade and the (Log of the) total of exports and imports as a percentage of GDP (*LogSEI*) to account for the impact of trade openness on income inequality. Both are taken from the World Bank's World Development Indicators (WDI).

	<i>IMP</i>	<i>EXP01</i>	<i>LOGSEI</i>	<i>LOGGDPPCA</i>
<i>Mean</i>	39.46016	40.72078	4.185566	9.429523
<i>Median</i>	30.87171	32.22486	4.156593	9.475376
<i>Maximum</i>	208.3329	228.9938	6.080681	11.62597
<i>Minimum</i>	6.936023	6.730210	2.749550	6.415292
<i>Std. Dev.</i>	29.42335	34.12670	0.598441	1.275725
<i>Skewness</i>	2.776689	3.012305	0.457904	-0.320710
<i>Kurtosis</i>	12.38047	13.75946	3.702895	1.976339

Table 8: Log GDP per Capita (Constant 2005 USD), the (Log of the) sum of exports and imports as a percentage of GDP, Exports of goods and services (% of GDP), Imports of goods and services (% of GDP)

Source: World Bank, The World Development Indicators (WDI) of the World Bank Calculation: Author

From 1993 to 2017, Figure 15 shows the average log GDP per capita (constant 2005 USD), as well as the average of (log of the) sum of exports and imports as a percentage of GDP in 48 nations. The countries with the highest average log GDP per capita are Norway and Switzerland, whereas Pakistan and India have the lowest average log GDP per capita. The highest average of the log of the total of exports and imports as a percentage of GDP is in Singapore and Luxemburg, while the lowest average is in Japan and Brazil.

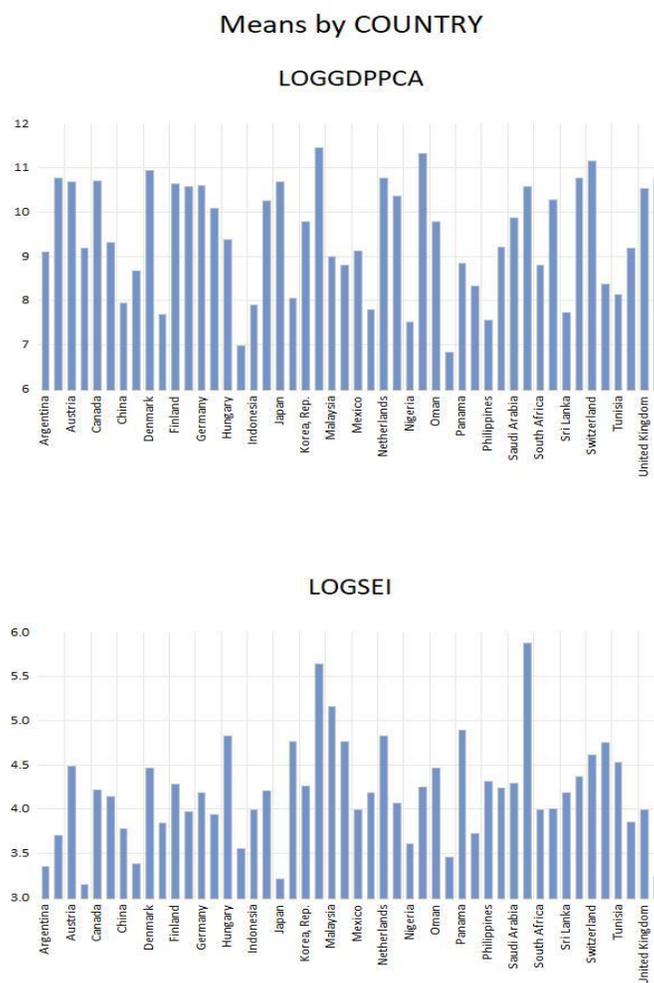


Figure 15: The average of log (GDP per Capita (Constant 2005 USD)), the average of (Log of the) sum of exports and imports as a percentage of GDP in 48 countries from 1993 to 2017.

Source: World Bank, The World Development Indicators (WDI) of the World Bank Calculation: Author

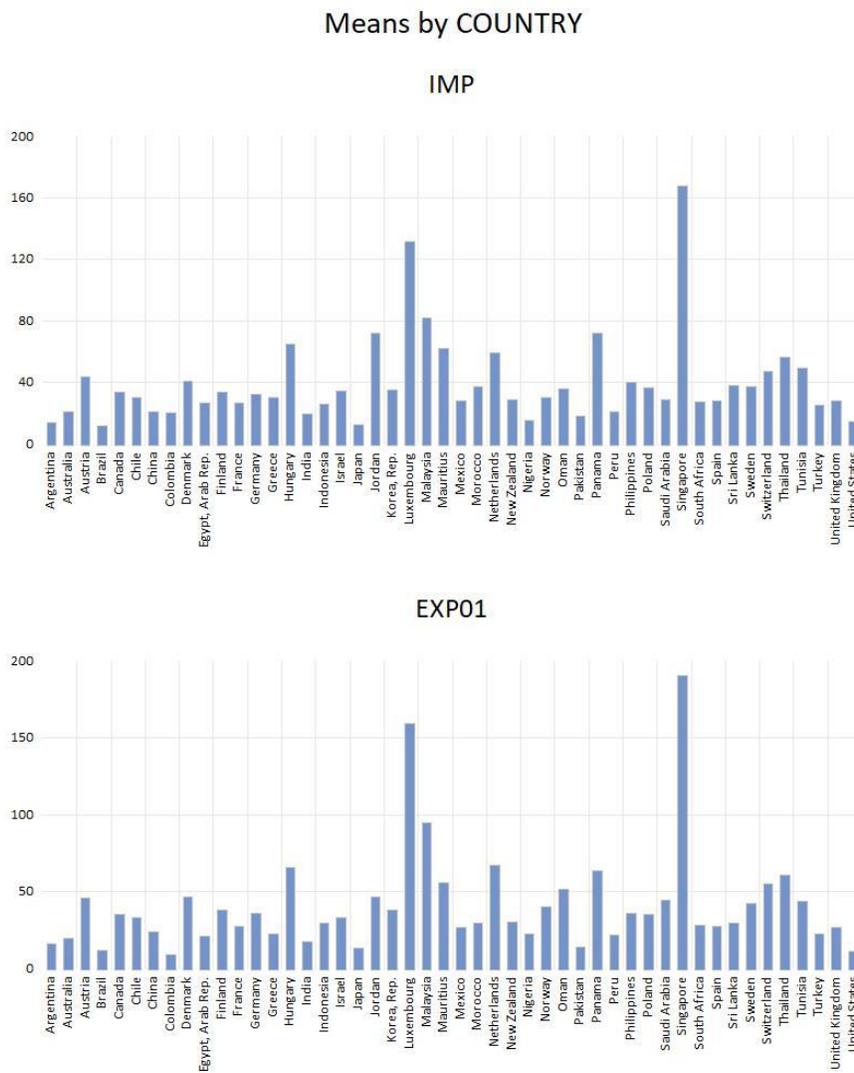


Figure 16: Mean of exports of goods and services (% of GDP) and mean of imports of goods and services (% of GDP) in 48 countries (1993–2017).

Source: World Bank, The World Development Indicators (WDI) of the World Bank Calculation: Author

The (log of) secondary education enrolment (*LogEdu*) from WDI is employed in this study to account for the effect of education. Berg and Ostry (2011) argue that poor folks may not be able to afford to pay for their education. Increased investment in human capital, and consequently growth, could result from a more equitable allocation of income. Even after controlling for per capita income, there is a negative association between various metrics of human capital (particularly secondary education achievement). This supports Wilkinson and Pickett's (2009) argument that more unequal countries suffer from lower social indicators.

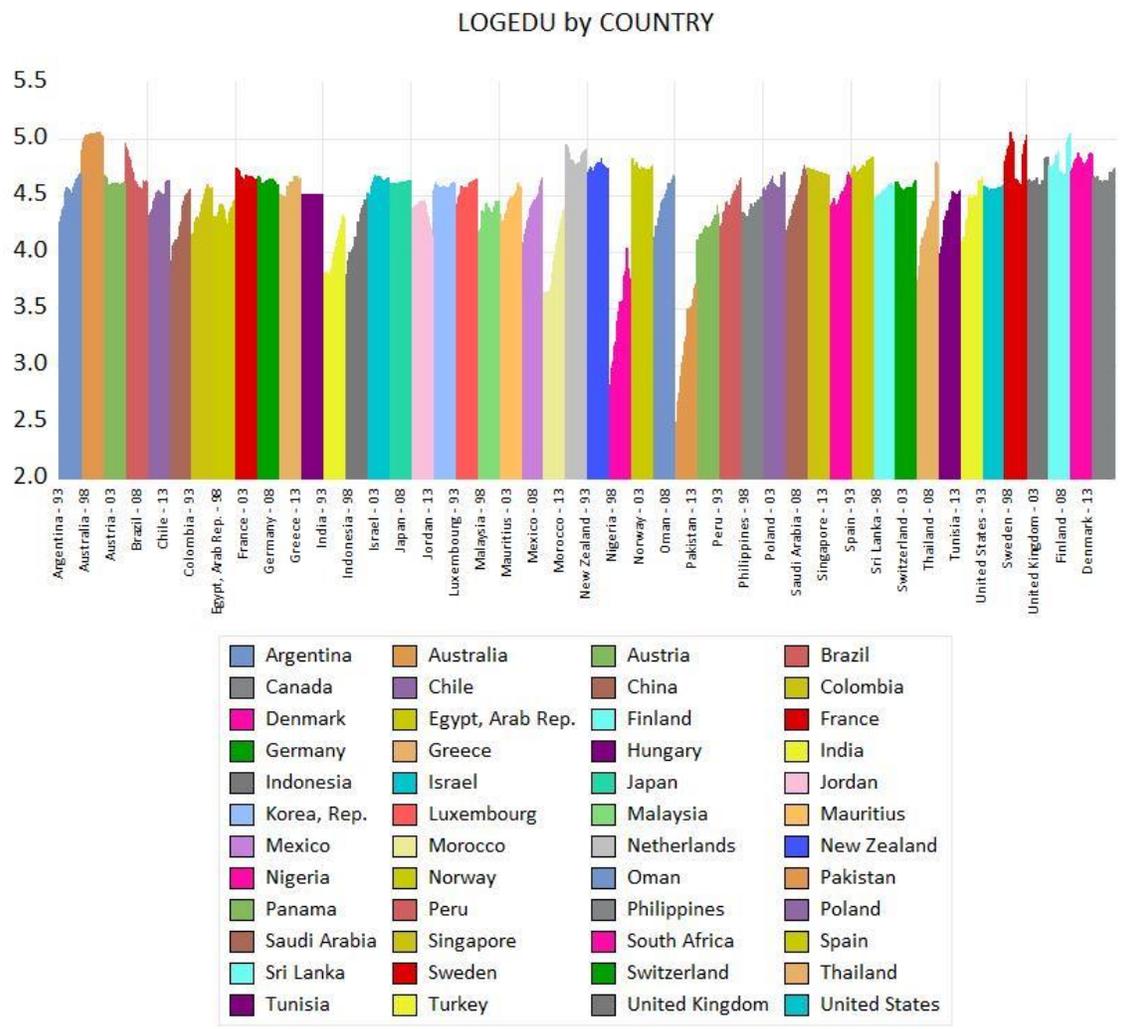


Figure 17: The (log of) secondary education enrolment

Source: World Bank, The World Development Indicators (WDI) of the World Bank Calculation: Author

The next step is to compute other summary statistics. Different statistics per panel are shown here. Table 9 shows how regressors and dependent variables vary over time and between countries. Within variation shows variation over time or given countries (time-variant), between variation shows variation across countries (time-invariant), and overall variation tells us about variation over time and countries.

VARIABLE	MEAN	STD. DEV.	MIN	MAX	OBSERVATIONS
LOGGINID OVERALL	3.595942	.2377343	3.086487	4.152613	N = 1200
BETWEEN		.2374221	3.16988	4.134551	n = 48
WITHIN		.0357304	3.445809	3.691822	T = 25
FD OVERALL	.5170441	.2135575	.1337235	1	N = 1200
BETWEEN		.2020556	.1944605	.9333218	n = 48
WITHIN		.0748167	.2094678	.7048623	T = 25
FPS OVERALL	1.90e-16	1.213841	-4.532266	3.353523	N = 1200
BETWEEN		.9951534	-2.7604	2.220739	n = 48
WITHIN		.7091565	-3.734841	2.781938	T = 25

LOGGDP~A OVERALL	9.429523	1.275725	6.415292	11.62597	N = 1200
BETWEEN		1.272761	6.824707	11.46303	n = 48
WITHIN		.1999532	8.396211	10.38679	T = 25
BOO OVERALL	-1.701	13.96835	-281.247	.967077	N = 1200
BETWEEN		11.17053	-77.4721	.2636199	n = 48
WITHIN		8.534155	-205.4759	75.71943	T = 25
LOGEDU OVERALL	4.471768	.3500564	2.390823	5.057313	N = 1200
BETWEEN		.3225608	3.20039	5.025118	n = 48
WITHIN		.1434456	3.662202	5.057588	T = 25
LOGSEI OVERALL	4.185566	.5984414	2.74955	6.080681	N = 1200
BETWEEN		.5761192	3.139437	5.875966	n = 48
WITHIN		.1812804	3.339168	4.761675	T = 25
REG OVERALL	7.039199	1.174764	3.343768	10.9854	N = 1200
BETWEEN		1.046655	4.805807	8.812808	n = 48
WITHIN		.5536359	4.067992	9.32978	T = 25
LMR OVERALL	6.201712	1.484617	2.559696	11.73416	N = 1200

BETWEEN	1.294101	4.329016	9.273724	n = 48
WITHIN	.7502751	3.692273	9.174583	T = 25

Table 9: Summary statistics

Source: World Bank, SWIID, The Fraser Institute's Economic Freedom of the World database, the World Development Indicators (WDI) of the World Bank Calculation: Author

The average value and, more importantly, the standard deviation and minimum and maximum values of the variables are shown in Table 9. There are various groupings in the panel data.

Summary statistics for each region for comparative analysis of 5 regions are shown in Appendix A. With a value of 0.35 for *FD* and a figure of -.266 for *FPS*, Latin America & Caribbean has the highest *LogGiniD* mean of 3.87. On the other hand, Europe and Central Asia, with a figure of 3.35, have the lowest *LogGiniD* average, and 0.64 and -.114 for *FD* and *FPS*, respectively.

Correlation Analysis is used to determine whether the regressors have an exact or linear dependence. A correlation statistic of 0.80 or higher between the explanatory variables indicates that the variables have a linear relationship.

	LogGiniD	FD	FPS	LogGdp~a	LER	BOO	LogEdu	LogSEI	Reg	LMR
LogGiniD	1.0000									
FD	-0.5610	1.0000								
FPS	0.0900	0.3390	1.0000							
LogGdpPca	-0.6558	0.7925	0.1166	1.0000						
LER	0.1887	0.0464	0.0569	0.0227	1.0000					
BOO	0.1506	-0.1061	0.0820	-0.1798	0.0719	1.0000				
LogEdu	-0.3894	0.5858	0.0956	0.7316	0.0567	-0.0173	1.0000			
LogSEI	-0.2425	0.1980	-0.1040	0.2519	0.2224	-0.2691	0.1959	1.0000		
Reg	-0.2674	0.4905	0.2007	0.5431	0.2050	-0.0706	0.3878	0.3721	1.0000	
LMR	0.1228	0.2226	0.2105	0.1483	0.2483	0.0117	0.0675	0.0486	0.5512	1

Table 10: Correlation Analysis to determine multicollinearity

Source: World Bank, SWIID, The Fraser Institute's Economic Freedom of the World database, the World Development Indicators (WDI) of the World Bank Calculation: Author

Table 10 shows that the regressors do not have perfect or exact linear representations of one another. Therefore, this model would pass the multicollinearity test. However, regression analysis will show if there is multicollinearity.²

² Appendix B depicts some correlation analysis for regions.

4.2 Methods and Results.

Panel data analysis adds a spatial and temporal dimension to regression analysis. The spatial dimension refers to a set of observational cross-sectional units. Countries are the spatial dimension in this thesis, while the temporal dimension refers to periodic measurements of a set of variables that characterize these cross-sectional units throughout a given time interval. This study's panel data set consists of 48 countries with the same economic indicators, such as the Gini coefficient, financial development index, and GDP per capita. Every variable in this pooled data set, also known as time series-cross sectional data, has a total of $48 \times 25 = 1200$ observations. In other words, the 48 countries are tracked for 25 years, and samples are taken once a year.

Panel analytic models come in a variety of shapes and sizes. Constant coefficients, fixed effects, random effects, dynamic panels, robust models, and covariance structure models are examples of these models. Here, solutions to heteroskedasticity and autocorrelation problems are of interest.

Panel data analysis is carried out for a variety of reasons. The main focus is on the "group" rather than the individual Units inside the group; hence panel perspective loses very little information. Using panel data rather than time series data improves the overall number of observations and their variance while reducing noise from individual time series (heteroscedasticity is not an issue in panel data analysis). Best suited where data availability is a concern, particularly in developing countries where short time ranges for variables are common, making time series regressions challenging to fit. The units in the panel have heterogeneity (differences). By

accounting for subject-specific variables, panel estimating approaches account for this variability. Moreover, panel data is appropriate for investigating dynamic changes caused by repeated cross-sectional observations.

Pooling, aggregating, averaging group estimates, and cross-section regression are four standard panel data processes. In the static case, all four approaches provide unbiased estimates of coefficient means if the coefficients deviate at random. When the coefficients differ across groups in the dynamic case, pooling, and aggregating produce inconsistent and potentially extremely deceptive coefficient estimates, whereas the cross-section can yield consistent estimates of the long-run impacts. When the regressors are serially correlated, disregarding coefficient heterogeneity improperly causes serial correlation in the disturbance, resulting in contradictory estimates in models with lagged dependent variables (Pesaran and Smith, 1995). Dynamic models have become more relevant in the empirical study of panel data in economics since the fundamental work of Balestra and Nerlove (1966). Because most panels have a small-time dimension, the focus has been on models with homogeneous dynamics, and the study of dynamic heterogeneous panels has received little attention until recently (Im–Pesaran–Shin, 2003). In this study, the regressors appear to be $I(1)$, the variables are cointegrated, and the coefficients are independent of the regressors.

Nonstationary is a concern in big N and large T dynamic panels due to the increased number of time measurements. Pesaran, Shin, and Smith (1997, 1999) present two key novel approaches for

estimating nonstationary dynamic panels with heterogeneous parameters across groups in their papers. The mean-group (MG) and pooled mean-group (PMG) estimators are two types of estimators. The MG estimator (Pesaran and Smith 1995) relies on averaging the coefficients and estimating N time-series regressions, whereas the PMG estimator (Pesaran, Shin, and Smith 1997, 1999) uses a combination of pooling and averaging. The following regressions with a multifactor error structure are computed to study the association between income inequality (*LogGiniD*) and financial development (*FD*) and financial structure (*FS*). The generalized ARDL (p, q, q, ..., q) model is specified as:

$$y_{it} = \sum_{i=1}^p \delta_i y_{i,t-j} + \sum_{i=0}^q \beta'_{ij} X_{i,t-j} + \varphi_i + e_{it}$$

Where y_{it} is the dependent variable, $(X'_{i,t})'$ is a $k \times 1$ vector that is allowed to purely I(0) or I(1) or cointegrated; δ_{ij} is the coefficient of the lagged dependent variable called scalars; β_{ij} are $k \times 1$ coefficient vectors; φ_i is the unit-specific fixed effects; $I = 1, \dots, N$; $t = 1, 2, \dots, T$; p, q are optimal lag orders; e_{it} is the error term.

The re-parameterized ARDL (p, q, q, ..., q) error correction model is specified as:

$$\Delta y_{it} = \theta_i [y_{i,t-j} - \lambda'_i X_{i,t}] + \sum_{i=1}^{p-1} \zeta_{ij} \Delta y_{i,t-j} + \sum_{i=0}^{q-1} \beta'_{ij} \Delta X_{i,t-j} + \varphi_i + e_{it}$$

Notes:

$\theta_i = -(1 - \delta_i)$, group-specific speed of adjustment coefficient (expected that $\theta_i < 0$)

λ'_i = vector of long-run relationships

ECT = $[y_{i,t-j} - \lambda'_i X_{i,t}]$, the error correction term which represents the long-run information in the model

ζ_{ij} , β'_{ij} are the short-run dynamic coefficients to be estimated

The error correction model is most important to run the panel ARDL model.

4.2.1 Unit Root Test.

Using panel data instead of individual time series to test the unit root and cointegration hypotheses has numerous drawbacks. First, panel data analysis typically involves a significant amount of unobserved heterogeneity, making model cross-section parameters specific. Second, in many empirical situations, the assumption of cross-sectional independence is incorrect.

Variants of panel unit root tests that allow for different types of cross-sectional dependence have been developed to overcome these limitations. Third, if the null of the unit root or cointegration is denied, the panel test results can be challenging to interpret. A considerable fraction of the

cross-section units is stationary or cointegrated, which is the best conclusion that can be drawn (Pesaran, 2015). The long-run parameters can be estimated effectively using strategies similar to those outlined for single-time series models once a cointegration relationship has been established. Panel data structures were changed using fully modified OLS procedures, the dynamic OLS estimator, and estimators based on a vector error correction representation. Most approaches use a homogeneous framework, in which all panel units' cointegration vectors are assumed equal, but the short-run parameters are panel-specific (Pesaran, 2015).

The null hypothesis in the Levin–Lin–Chu (2002), Harris–Tzavalis (1999), Breitung (2000; Breitung and Das 2005), Im–Pesaran–Shin (2003), and Fisher-type (Choi 2001) tests is that all of the panels have a unit root. The null hypothesis in Hadri's (2000) Lagrange multiplier (LM) test is that all the panels are (trend) stationary. In this thesis, to ascertain that no variable is integrated of order 2. 1st and/or 2nd generation URTs are performed. Unit root tests for dynamic heterogeneous panels based on the mean of individual unit root statistics are conducted. In particular, Im, Pesaran, and Shin (2003) propose a standardized t-bar test statistic based on the (augmented) Dickey-Fuller statistics averaged across the groups.

Im, Pesaran, and Shin (2003) developed a set of tests that relax the assumption of a common autoregressive parameter. Moreover, the IPS test does not require balanced datasets, though there cannot be gaps within a panel. The starting point for the IPS test is a set of Dickey-Fuller regressions of the form

$$\Delta y_{it} = \phi_i y_{i,t-1} + Z'_{it} \gamma_i + \epsilon_{it}$$

Notice that here ϕ is panel-specific, indexed by i , ϕ is constant. Im, Pesaran, and

Shin assume that ϵ_{it} is independently distributed normally for all i and t , and they allow ϵ_{it} to have heterogeneous variances σ^2_i across panels.

There are multiple unit root tests to perform, such as the IPS test, Levin–Lin–Chu test, or Brayton test, and many researchers have classified them as first generation or second generation, with various assumptions. Panel Unit Root Tests using IPS assume that the slopes are heterogeneous, while the LLC assumes that slopes are homogeneous. The IPS test is conducted using constant and just one lag.

Table 11 shows the IPS unit root test for *LogGiniD* using constant and just one lag. P-value = 0.96 do not reject the null hypothesis at 5%. This series is non-stationary at the level.

Im-Pesaran-Shin unit-root test for LogGiniD		
Ho: All panels contain unit roots	Number of panels =	48
Ha: Some panels are stationary	Number of periods =	25
AR parameter: Panel-specific	Asymptotics: T,N -> Infinity	
Panel means: Included		sequentially
Time trend: Not included		
ADF regressions: 1 lag		
	Statistic	p-value
W-t-bar	1.7712	0.9617

Table 11: IPS Unit Root Test for *LogGiniD* using constant and first lag

Source: SWIID Calculation: Author

The IPS unit root test for *FD* using constant and just one lag is shown in Table 12. The null hypothesis of this test is rejected at 5% with a P-value of 0.0025. At the level, this series is stationary.

Im-Pesaran-Shin unit-root test for FD		
Ho: All panels contain unit roots	Number of panels =	48
Ha: Some panels are stationary	Number of periods =	25
AR parameter: Panel-specific	Asymptotics: T,N -> Infinity	
Panel means: Included	sequentially	
Time trend: Not included		
ADF regressions: 1 lag		
	Statistic	p-value
W-t-bar	-2.8010	0.0025

Table 12: IPS Unit Root Test for *FD* using constant and first lag

Source: World Bank Calculation: Author

Table 13 presents the results of the IPS unit root test with constant and just one lag for *LogGiniD*, *FD*, *FPS*, *LogGdpPca*, *LER*, *BOO*, *LogEdu*, *LogSEI*, *Reg*, and *LMR*. For *LogGiniD*, *LogGdpPca*, *LER*, *LogSEI*, and *LMR*, the null hypothesis of this test is not rejected at 5%, with the P-values shown in the table. At the level, these series are nonstationary. *FD*, *FPS*, *BOO*, and *Reg* are rejected at 5%, with the P-values shown in the table. At the level, these series are stationary.

Im-Pesaran-Shin unit-root test for *LogGiniD*, *FD*, *FPS*, *LogGdpPca*, *LER*, *BOO*, *LogEdu*, *LogSEI*, *Reg*, *LMR*

Ho: All panels contain unit roots

Number of panels = **48**

Ha: Some panels are stationary		Number of periods = 25	
AR parameter: Panel-specific		Asymptotics: T, N -> Infinity	
Panel means: Included sequentially			
Time trend: Not included			
	Statistic	p-value	nonstationary at level
<i>LogGiniD</i>	1.7712	0.9617	nonstationary at level
<i>FD</i>	-2.8010	0.0025	stationary at level
<i>FPS</i>	-6.5590	0.0000	stationary at level
<i>LogGdpPca</i>	3.2980	0.9995	nonstationary at level
<i>LER</i>	-1.5847	0.0565	nonstationary at level
<i>BOO</i>	-5.1329	0.0000	stationary at level
<i>LogEdu</i>	---	---	----
<i>LogSEI</i>	-1.8460	0.0324	stationary at level
<i>Reg</i>	-1.3143	0.0944	nonstationary at level
<i>LMR</i>	-0.1557	0.4381	nonstationary at level

Table 13: Results for IPS Unit Root Test for LogGiniD, FD, FPS, LogGdpPca, LER, BOO, LogEdu, LogSEI, Reg, and LMR with constant and just one lag.

Source: World Bank, SWIID, The Fraser Institute's Economic Freedom of the World database, the World Development Indicators (WDI) of the World Bank Calculation: Author

Because some of the variables are not stationary, the t statistic cannot identify the relationship between them. IPS unit root tests are performed on the nonstationary variables. All that has been done is to take the first difference. Table 14 shows the IPS unit root test for the first difference of *LogGiniD*. As can be seen in the table, the IPS unit root test for *D.LogGiniD* using constant and just one lag is shown in Table 14. The null hypothesis of this test is rejected at 5% with a P-value of 0.0000. At first difference, this series is stationary.

Im-Pesaran-Shin unit-root test for **D.LogGiniD**

Ho: All panels contain unit roots	Number of panels =	48
Ha: Some panels are stationary	Number of periods =	24
AR parameter: Panel-specific	Asymptotics: T,N -> Infinity	
Panel means: Included		sequentially
Time trend: Not included		

ADF regressions: **1** lag

	Statistic	p-value
W-t-bar	-7.7083	0.0000

Table 14: IPS Unit Root Test for *LogGiniD* at first Difference

Source: SWIID Calculation: Author

The IPS unit root test for *D.LogGdpPca* using constant and just one lag is presented in Table 15.

With a P-value of 0.0000, the null hypothesis of this test is rejected at 5%. This series is stationary at first difference.

Im-Pesaran-Shin unit-root test for D.LMR		
Ho: All panels contain unit roots	Number of panels =	48
Ha: Some panels are stationary	Number of periods =	24
AR parameter: Panel-specific	Asymptotics: T,N -> Infinity	
Panel means: Included		sequentially
Time trend: Not included		
ADF regressions: 1 lag		
	Statistic	p-value
W-t-bar	-14.0658	0.0000

Table 18: IPS Unit Root Test for *D.LMR* at first difference

Source: The Fraser Institute's Economic Freedom of the World database Calculation: Author

All of the IPS tests are repeated using trend and only one lag for all of the variables mentioned above, and the results are the same for all variables instead of *FD*. The IPS unit root test for *FD* using trend and just one lag is shown in Table 19. The null hypothesis of this test is not rejected at 5% with a P-value of 0.3335. At the level, this series is non-stationary.

Im-Pesaran-Shin unit-root test for FD		
Ho: All panels contain unit roots	Number of panels =	48
Ha: Some panels are stationary	Number of periods =	25
AR parameter: Panel-specific	Asymptotics: T,N -> Infinity	
Panel means: Included		sequentially
Time trend: Included		
ADF regressions: 1 lag		
	Statistic	p-value
W-t-bar	-0.4303	0.3335

Table 19: IPS Unit Root Test for *FD* using trend and first lag

Source: World Bank Calculation: Author

Furthermore, unit root tests are performed for variables in each category of region. Altogether, these experiments yield the same conclusion. Table 20 shows the unit root test for *LogGiniD* in North America. The result illustrates that the p-value is 0.0628, and the null hypothesis is not rejected at 5%.

Im-Pesaran-Shin unit-root test for LogGiniD		
Ho: All panels contain unit roots	Number of panels =	2
Ha: Some panels are stationary	Number of periods =	25
AR parameter: Panel-specific	Asymptotics: T,N	-> Infinity
Panel means: Included		sequentially
Time trend: Not included		
ADF regressions: 1 lag		
	Statistic	p-value
W-t-bar	-1.5315	0.0628

Table 20: IPS Unit Root Test for *LogGiniD* using constant and first lag if region=="North America"

Source: World Bank Calculation: Author

The term "integrated of order one," or $I(1)$, refers to a series with a unit root (a random walk).

The term "integrated of order 0," or $I(0)$, refers to a stationary series without a trend (0). Once an

$I(1)$ series is differentiated, it becomes an $I(0)$ series. In general, a series is $I(d)$ if its

d^{th} difference is stationary. Table 21 shows the summary of the unit root tests' results. Variables

that are stationary at level, $I(0)$, are ***FPS***, ***BOO***, and ***LogSEI***. Other variables are considered as

$I(1)$. ***LogGini***, ***FD***, ***LogGdpPca***, ***Reg***, and ***LMR*** are stationary at the first difference.

<i>Variables</i>	Level - I(0)	First Difference – I(1)
<i>LogGiniD</i>	<i>Non-stationary</i>	<i>Stationary</i>
<i>FD</i>	<i>Non-stationary</i>	<i>Stationary</i>
<i>FPS</i>	<i>Stationary</i>	NA
<i>LogGdpPca</i>	<i>Non-stationary</i>	<i>Stationary</i>
<i>LER</i>	<i>Non-stationary</i>	<i>Stationary</i>
<i>BOO</i>	<i>Stationary</i>	NA
<i>LogEdu</i>	-----	-----
<i>LogSEI</i>	<i>Stationary</i>	NA
<i>Reg</i>	<i>Non-stationary</i>	<i>Stationary</i>
<i>LMR</i>	<i>Non-stationary</i>	<i>Stationary</i>

Table 21: Results for IPS Unit Root Test for *LogGiniD*, *FD*, *FPS*, *LogGdpPca*, *LER*, *BOO*, *LogEdu*, *LogSEI*, *Reg*, *LMR*

Source: World Bank, SWIID, The Fraser Institute's Economic Freedom of the World database, the World Development Indicators (WDI) of the World Bank. Calculation: Author

4.2.2 Optimal Lag Selection.

In this subsection, the optimal number of lags for each unit/group per variable is determined using the unrestricted model and an information criterion, with the most frequent lag for each variable represented as the lags for the model. The reasoning behind selecting the best lag will go a long way toward eliminating the multicollinearity problem.

```
. *Next step: Check for optimal lag lengths for the model and variables:
.
. forval i = 1/48 {
. 2.
.   ardl LogGiniD LogGdpPca FD FPS LER BOO LogSEI Reg LMR if (ID=='i'), maxlag(2 2 2 2 2 2 2 2)
. 3.
.   matrix list e(lags)
. 4.
.   di
. 5.
. }
note: L2.Reg omitted because of collinearity
note: LMR omitted because of collinearity
note: L.LMR omitted because of collinearity
note: L2.LMR omitted because of collinearity
Collinear variables detected.
r(9);
```

Figure 18: The *LMR* variable is omitted

Source: World Bank, SWIID, The Fraser Institute's Economic Freedom of the World database, the World Development Indicators (WDI) of the World Bank Calculation: Author

Using the below code for Stata, a maximum lag of two is chosen to avoid too many degrees of freedom. As can be seen in figure 15, the software (STATA 16.0) shows the error because of the collinearity of *Reg* and *LMR*. To avoid collinearity, the *LMR* variable is omitted. After running the code without *LMR* and a maximum lag of two, results came up for the same countries in the sample. Appendix Table 13 shows the lags that the software chose for every country. Figure 15 illustrates the results for the lag selection of the last country. Therefore, as can be seen in Appendix Table 13, there are 48 different lags for every country.

```
e(lags) [1, 7]
      LogGiniD      FD      FPS      LogGdpPca      BOO      LogSEI      Reg
r1      1      0      0      2      0      1      0
```

Figure 19: Lag selection by STATA

Calculation: Author

The most common lag has been chosen among all the countries. For all variables, the most common lag is 2.

Variables	<i>LogGiniD</i>	<i>FD</i>	<i>FPS</i>	<i>LogGdpPca</i>	<i>BOO</i>	<i>LogSEI</i>	<i>Reg</i>
Lag	2	2	2	2	2	2	2

Table 22: Most common lag

Calculation: Author

4.2.3 Cointegration Test.

Cointegration tests detect situations in which two or more non-stationary time series are integrated in such a way that they cannot diverge from equilibrium over time. Cointegration is ascertained from the statistical significance of the long-run coefficients. Pedroni (2004) investigates the features of residual-based tests for the null of no cointegration in dynamic panels with short-run variable dynamics and long-run slope coefficients among individual panel members.

Pedroni's (1999, 2004) cointegration tests are performed in this subsection. This test allows researchers to compute Pedroni's seven test statistics in a heterogeneous panel (mid to large N, big T) with one or more nonstationary regressors under the null of no cointegration. Panel v, panel rho, group rho, panel t (nonparametric), group t (nonparametric), panel ADF (parametric t),

and group ADF are the test statistics (parametric t). To be distributed under N , all test statistics are normalized $(0,1)$. Except for panel v , all of the statistics diverge to negative infinity as the p -value approaches 0. Pedroni's group-mean panel-dynamic ordinary least-squares (PDOLS) estimations are computed with this method. It extends the dynamic ordinary least-squares (DOLS) technique of estimating the cointegrating vector in a single equation to panel time-series data in brief (medium to large N , large T). To avoid feedback effects and endogeneity, DOLS entails adding lags and leads to the regressors. In PDOLS, each individual undergoes a DOLS regression, with the results being aggregated for the full panel using Pedroni's group-mean technique (Stata Corp, L. L. C., 2019).

As shown in Table 24, panel $v = 3.396$, panel $\rho = 7.55$, group $\rho = 1.171$, panel $t = 5.539$ (nonparametric), group $t = 2.418$ (nonparametric), panel ADF = 5.539 (parametric t), and group ADF = 6.443 are the results of Pedroni's cointegration tests. Six of the seven statistics indicate that the null hypothesis of no cointegration is rejected even at the 1% level because the absolute values are greater than 2. As a result, the variables in the panel exhibit cointegration among themselves. The statistical significance of the long-run coefficients is used to determine cointegration. Essentially, cointegration (or, more generally, a long-run relationship) presents itself as the joint significance of the level's equation.

Pedroni's cointegration tests:

No. of Panel units: 48 Regressors: 6
 No. of obs.: 1200 Avg obs. per unit: 25
 Data has been time-demeaned.
 A time trend has been included.

Test Stats.	Panel	Group
v	3.396	.
rho	7.55	9.814
t	1.171	2.418
adf	5.539	6.443

All test statistics are distributed $N(0,1)$, under a null of no cointegration, and diverge to negative infinity (save for panel v).

Table 23: Pedroni's Cointegration test

Source: World Bank, SWIID, The Fraser Institute's Economic Freedom of the World database, the World Development Indicators (WDI) of the World Bank Calculation: Author

The responsiveness of cointegrated variables to any deviation from long-run equilibrium is one of their most distinguishing characteristics. This property implies an error correction model in which the deviation from equilibrium affects the short-run dynamics of the system's variables.

4.2.4 Hausman Test.

The Hausman test is used to select the best appropriate estimator, which is either Pooled Mean Group (PMG), Mean Group (MG), or Dynamic Fixed Effects (DFE). Three alternative

estimators are used in this study based on improvements in the non-stationary panel literature. A traditional fixed-effects estimator, the mean-group estimator of Pesaran and Smith (1995), and the pooled mean-group estimator of Pesaran, Shin, and Smith (1999).

In the current literature on dynamic heterogeneous panel estimation with large N and T , numerous approaches to model estimate have been proposed. On the one hand, a fixed-effects (FE) estimating approach might be utilized, in which each group's time-series data is pooled, and only the intercepts are permitted to differ across groups. However, if the slope coefficients are not identical, the FE method generates inconsistent and perhaps misleading results. On the other hand, the model might be fitted independently for each group, and the coefficients averaged using simple arithmetic. This is the MG estimator proposed by Pesaran and Smith (1995), wherein the intercepts, slope coefficients, and error variances are all permitted to differ among groups. Furthermore, Pesaran, Shin, and Smith (1997, 1999) proposed a new PMG estimator that incorporates both pooling and averaging. This intermediate estimator, like the MG estimator, permits the intercept, short-run coefficients, and error variances to differ between groups but constrains the long-run coefficients to be identical (as the FE estimator). Pesaran, Shin, and Smith (1999) proposed a maximum likelihood method to estimate the parameters because the model is nonlinear in the parameters.

The STATA base reference manual has a description of the Hausman test. “ Hausman is a general implementation of Hausman’s (1978) specification test, which compares an estimator b

that is known to be consistent with an estimator B that is efficient under the assumption being tested. The null hypothesis is that estimator B is indeed an efficient (and consistent) estimator of the true parameters. If this is the case, there should be no systematic difference between the two estimators. If there exists a systematic difference in the estimates, you have reason to doubt the assumptions on which the efficient estimator is based” (Stata Corp, L. L. C., 2019, p. 893).

The results of the Hausman test are shown in Table 24. Remember that the PMG estimator requires that the long-run elasticities of all panels be equal. When the constraints are valid, this "pooling" across nations produces efficient and consistent estimates. The notion of slope homogeneity, on the other hand, is frequently empirically refuted. The Hausman test is used to determine the difference between these models (Blackburne and Frank, 2007).

	Coefficients		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
	(b) mg	(B) pmg		
FD				
L2.	.1300803	-.9225378	1.052618	.1383208
FPS				
L2.	.0016384	.0555152	-.0538767	.0039507
LogGdpPca				
L2.	-.074772	.02197	-.0967419	.2857538
B00				
L2.	-.3317411	-.2373294	-.0944117	.3926849
LogSEI				
L2.	.0282612	.2517726	-.2235114	.3021545
Reg				
L1.	.0222984	.2296816	-.2073831	.0444797

b = consistent under Ho and Ha; obtained from xtqml
 B = inconsistent under Ha, efficient under Ho; obtained from xtqml

Test: Ho: difference in coefficients not systematic

chi2(6) = (b-B)'[(V_b-V_B)^(-1)](b-B)
 = -23.62 chi2<0 ==> model fitted on these
 data fails to meet the asymptotic
 assumptions of the Hausman test;
 see suest for a generalized test

Table 24: The Hausman test to select the most appropriate estimator, either PMG or MG.

Source: World Bank, SWIID, The Fraser Institute's Economic Freedom of the World database, the World Development Indicators (WDI) of the World Bank Calculation: Author

The χ^2 statistic is actually negative in this case. This finding could be interpreted as significant evidence that the null hypothesis cannot be rejected. Such a result is not an unusual outcome for

the Hausman test (Stata Corp, L. L. C., 2019). This test shows that PMG is the most efficient estimator under the null hypothesis. The null hypothesis holds that estimator B (PMG) is an efficient (and consistent) estimator of the true parameters. There should be no systematic difference between MG and PMG. Therefore, the author is going to use the PMG estimator to analyze the panel data. Moreover, table 25 shows another Hausman test that selects the most appropriate estimator between PMG and DFE.

		— Coefficients —			
		(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
		DFE	pmg	Difference	S.E.
FD	L2.	.1131271	-.9225378	1.035665	.
FPS	L2.	-.0077121	.0555152	-.0632273	.
LogGdpPca	L2.	-.1714639	.02197	-.1934339	.
BOO	L2.	.0000913	-.2373294	.2374207	.
LogSEI	L2.	-.0110178	.2517726	-.2627904	.
Reg	L1.	.0171866	.2296816	-.2124949	.

b = consistent under Ho and Ha; obtained from xtpmg
 B = inconsistent under Ha, efficient under Ho; obtained from xtpmg

Test: Ho: difference in coefficients not systematic

chi2(6) = (b-B)'[(V_b-V_B)^(-1)](b-B)
 = -48.92 chi2<0 ==> model fitted on these
 data fails to meet the asymptotic
 assumptions of the Hausman test;
 see suest for a generalized test

Table 25: The Hausman test to select the most appropriate estimator, either DFE or PMG.

Source: World Bank, SWIID, The Fraser Institute's Economic Freedom of the World database, the World Development Indicators (WDI) of the World Bank Calculation: Author

The dynamic FE estimator, like the PMG estimator, restricts the cointegrating vector coefficients to be equal across all panels. The FE model also requires that the short-run coefficients and the speed of adjustment coefficient be equal (Blackburne and Frank, 2007). As can be observed, the Hausman test indicates that when the χ^2 statistic is genuinely negative, the null hypothesis cannot be rejected, implying that PMG is a superior and more efficient estimator under the null hypothesis. As a result, using a Hausman test based on a comparison of Dynamic Fixed Effects and Pooled Mean Group, the null hypothesis of homogeneity is tested. The test validates the PMG, and the author is going to use the PMG estimator to analyze the panel data. The next subsection argues that the statistical significance of the long-run coefficients, the size of group-specific error correction coefficients, and the short-run coefficients are all provided by the PMG estimator.

4.2.5 Estimation of the Panel Autoregressive Distributed Lag (ARDL) model.

The ARDL model is estimated using the results of the Hausman (1978) test. The pooled mean group estimator is used since the test favors the PMG estimator. Pesaran, Shin, and Smith (1999)

presented the pooled mean estimator as an intermediate estimator (between MG and DFE). Furthermore, this estimator combines pooling and averaging, allowing intercepts, short-run coefficients, and error variances to differ freely between groups. It is worth noting that the model's long-run coefficients are constant across countries, and the PMG estimator gives consistent estimates of the mean of short-run coefficients by simply averaging individual unit coefficients.

Several variables were removed due to collinearity and failure of the test, as shown above. For seven variables, ARDL (2,2,2,2,2,2) is performed using the lag selection and cointegration test. **LogGiniD** is the dependent variable, and **FD**, **FPS**, **LogGdpPca**, **BOO**, **LogSEI**, and **Reg** are the independent variables in this estimation. According to Pesaran et al. (1999), the cointegration equation is calculated and does not contain trends. The long-run regression coefficients for the variables are shown in Table 26. The table is the most interesting, as it displays the long-run coefficients. As was mentioned earlier, even if an ECT is shown there, keep in mind that this is not the term for error correction. This is a representation of long-run coefficients. One of the assumptions of the pooled mean group estimator is that all of the groups in the panel have the same long-run coefficients. As a result, even at a 1% level, for the general sample, in the long run, **FD** has a positive impact on **D.LogGiniD**, while **FPS** has a negative influence on **D.LogGiniD** at the 1% level. **BOO** and **Reg** have negative impacts on the first difference of the logarithm of the Gini index in the long-run scenario. In comparison, although **FD** and **BOO** are

statistically significant in impacting *D.LogGiniD*, *Reg* is statistically insignificant. Furthermore, *LogGdpPca* and *LogSEI* all have a statistically significant positive effect on *D.LogGiniD*.

```

Iteration 19:  log likelihood = 4770.3209

Pooled Mean Group Regression
(Estimate results saved as pmg)

Panel Variable (i): ID                Number of obs    =    1152
Time Variable (t): year                Number of groups =     48
                                        Obs per group:  min =    24
                                        avg =    24.0
                                        max =    24

                                        Log Likelihood   = 4770.321

```

D.LogGiniD	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
ECT						
FD						
L2.	.0488958	.0115048	4.25	0.000	.0263468	.0714448
FPS						
L2.	-.0041519	.0011664	-3.56	0.000	-.0064379	-.0018658
LogGdpPca						
L2.	.0155444	.0064412	2.41	0.016	.0029199	.0281688
B00						
L2.	-.0162871	.002642	-6.16	0.000	-.0214654	-.0111088
LogSEI						
L2.	.0306372	.0078176	3.92	0.000	.0153149	.0459594
Reg						
L2.	-.0004132	.0020392	-0.20	0.839	-.00441	.0035836

Table 26: Long Run Estimation using a Pooled Mean Group estimator

Source: World Bank, SWIID, The Fraser Institute's Economic Freedom of the World database, the World Development Indicators (WDI) of the World Bank Calculation: Author

The results of the PMG estimate of short-run coefficients are shown in Table 27. Even though all nations' long-run coefficients are the same (table 26), their short-run coefficients and error variances will differ for each country in the panel (table 27 & 28). While the long-run coefficients and error variances are consistently homogeneous across all the countries, the short-run coefficients and error variances are not. The convergence parameter allows adjustment from the short-run to the long-run when income inequality-financial development coefficients are homogeneous across nations. At the 1% level, the adjustment coefficient (-0.13) has the expected sign and is significant. The error correction term indicates at the 1% level, any deviations from long-run equilibrium are adjusted at the 13 percent adjustment speed. Moreover, all variables are insignificant in the short run except for BOO indicator.

SR							
ECT		-.1307647	.0237756	-5.50	0.000	-.177364	-.0841653
FD							
DI.		.007043	.0086553	0.81	0.416	-.0099211	.0240072
FPS		-.000649	.0010362	-0.63	0.531	-.00268	.0013819
LogGdpPca							
DI.		-.0104291	.0174461	-0.60	0.550	-.0446228	.0237647
BOO		.0566165	.0289936	1.95	0.051	-.0002099	.1134428
LogSEI		-.001066	.0052622	-0.20	0.839	-.0113797	.0092476
Reg							
DI.		-.0013873	.0009493	-1.46	0.144	-.0032478	.0004733
_cons		.4182969	.0761973	5.49	0.000	.2689529	.5676409

Table 27: Short Run Estimation using a Pooled Mean Group estimator

Source: World Bank, SWIID, The Fraser Institute's Economic Freedom of the World database, the World Development Indicators (WDI) of the World Bank Calculation: Author

Table 28 reports the results of PMG estimation of the short-run coefficients of the logarithm of Gini coefficients and the convergence parameter (adjustment coefficient) for each group (country). For Argentina, the error correction term reveals that the variation from the long run is corrected at 29 percent. Australia's deviance is likewise rectified by 29%. The ECT is the error correction term, which shows how fast the variables attain long-term equilibrium if there is any deviation in the short run. The error correction term further confirms the existence of a stable long-run relationship among the variables. Each nation has various error correction terms and different coefficients or statistics for the variables, as indicated in Table 28. This is based on PMG's assumption that only the long-run coefficients are shared across all of the panel's groups, while each country or group has its own error variances and short-run coefficients.

Country	Adjustment Coefficient	Short-run Coefficient					
		<i>FD</i>	<i>FPS</i>	<i>LogGdpPca</i>	<i>BOO</i>	<i>LogSEI</i>	<i>Reg</i>
ID_1 Argentina	-.294 (0.050)	-.132 (0.068)	-.007 (0.225)	.220 (0.067)	.101 (0.249)	.008 (0.575)	-.011 (0.21)
ID_2 Australia	-.421 (0.000)	-.029 (0.398)	.006 (0.136)	.007 (0.933)	.045 (0.240)	-.05 (0.000)	-.008 (0.138)
ID_3 Austria	-.147 (0.165)	.239 (0.00)	.002 (0.700)	-.122 (0.201)	.265 (0.401)	.012 (0.163)	.342 (0.308)

ID_4	-0.255	-0.015	0.004	0.099	0.173	-0.038	-0.018
Brazil	(0.000)	(0.670)	(0.033)	(0.321)	(0.134)	(0.012)	(0.018)
ID_5	-0.244	-0.002	0.003	-0.073	0.153	0.067	-0.002
Canada	(0.001)	(0.942)	(0.203)	(0.402)	(0.024)	(0.001)	(0.824)
ID_6	-0.410	-0.027	-0.011	0.017	0.055	0.075	-0.003
Chile	(0.008)	(0.415)	(0.065)	(0.888)	(0.692)	(0.028)	(0.608)
ID_7	-0.373	-0.006	-0.006	-0.022	0.138	0.071	-0.003
China	(0.000)	(0.723)	(0.046)	(0.602)	(0.088)	(0.000)	(0.442)
ID_8	-0.000	0.113	-0.005	0.018	0.000	-0.016	-0.014
Colombia	(0.758)	(0.266)	(0.012)	(0.622)	(0.789)	(0.019)	(0.072)
ID_9	0.099	-0.264	0.016	0.002	-0.025	0.030	(-0.006)
Denmark	(0.012)	(0.026)	(0.769)	(0.772)	(0.837)	(0.266)	(0.522)

ID_10	-0.044	-0.024	-0.017	0.137	0.098	-0.082	0.012
Egypt, Arab Rep.	(0.672)	(0.734)	(0.018)	(0.328)	(0.008)	(0.302)	(0.6)
ID_11	-0.248	0.054	-0.011	0.116	-0.090	0.023	-0.003
Finland	(0.000)	(0.002)	(0.000)	(0.075)	(0.298)	(0.004)	(0.574)
ID_12	-0.123	-0.038	0.007	-0.103	-0.036	0.008	0.011
France	(0.522)	(0.58)	(0.35)	(0.551)	(0.615)	(0.767)	(0.39)
ID_13	-0.364	0.022	-0.004	-0.124	0.181	0.026	0.002
Germany	(0.000)	(0.657)	(0.13)	(0.028)	(0.026)	(0.005)	(0.689)
ID_14	-0.012	0.062	-0.002	0.200	-0.008	-0.062	-0.002
Greece	(0.834)	(0.077)	(0.219)	(0.002)	(0.223)	(0.016)	(0.783)
ID_15	-0.068	0.041	0.0009	-0.125	0.002	-0.024	0.0001
Hungary	0.167	0.09	0.279	0.000	0.737	(0.000)	(0.956)
ID_16	-0.352	-0.003	-0.022	-0.125	0.003	0.056	-0.004
India	(0.000)	(0.942)	(0.000)	(0.194)	(0.693)	(0.049)	(0.454)
ID_17	-0.088	-0.028	-0.001	0.004	-0.026	-0.003	-0.003

Indonesia	(0.083)	(0.228)	(0.168)	(0.782)	(0.026)	(0.629)	(0.118)
ID_18	-.268	-.053	0.001	0.021	0.008	0.008	0.007
Israel	(0.000)	(0.181)	(0.847)	(0.883)	(0.56)	(0.771)	(0.309)
ID_19	-.503	0.036	0.009	0.202	0.000	-.031	-.003
Japan	(0.000)	(0.007)	(0.000)	(0.000)	(0.454)	(0.000)	(0.014)
ID_20	-.077	0.007	-.001	0.091	0.0004	-.001	-.002
Jordan	(0.272)	(0.611)	(0.12)	(0.000)	(0.92)	(0.697)	(0.211)
ID_21	0.037	0.035	0.003	-.051	-.005	-.042	0.002
Korea, Rep.	(0.114)	(0.473)	(0.217)	(0.039)	(0.592)	(0.000)	(0.473)
ID_22	-.023	-.066	-.001	-.232	0.064	-.004	0.009
Luxembourg	(0.313)	(0.251)	(0.735)	(0.000)	(0.033)	(0.635)	(0.109)
ID_23	-.014	0.014	0.001	-.028	0.013	-.029	0.0002
Malaysia	(0.484)	(0.585)	(0.545)	(0.457)	(0.579)	(0.000)	(0.923)
ID_24	0.066	0.112	-.007	0.222	0.044	-.003	0.0008
Mauritius	(0.551)	(0.474)	(0.069)	(0.065)	(0.383)	(0.946)	(0.933)
ID_25	0.145	-.011	0.005	-.036	-.0006	0.024	-.001
Mexico	(0.195)	(0.742)	(0.078)	(0.245)	(0.937)	(0.357)	(0.647)

ID_26	-0.015	0.029	-0.003	-0.022	-0.077	0.002	0.0009
Morocco	(0.406)	(0.462)	(0.004)	(0.44)	(0.097)	(0.463)	(0.875)
ID_27	-0.009	0.048	-0.007	0.156	-0.014	-0.046	-0.013
Netherlands	(0.757)	(0.254)	(0.036)	(0.003)	(0.772)	(0.001)	(0.006)
ID_28	-0.204	0.007	0.0005	-0.131	-0.014	0.045	0.005
New Zealand	(0.000)	(0.746)	(0.895)	(0.076)	(0.576)	(0.000)	(0.161)
ID_29	-0.018	-0.059	-0.001	0.004	-0.002	0.010	-0.003
Nigeria	(0.621)	(0.001)	(0.146)	(0.879)	(0.964)	(0.141)	(0.027)
ID_30	0.010	-0.0009	-0.0005	0.0104	-0.001	0.002	-0.0002
Norway	(0.646)	(0.851)	(0.158)	(0.125)	(0.906)	(0.342)	(0.619)
ID_31	-0.008	-0.000	0.000	-0.003	0.006	-0.002	-0.000
Oman	(0.781)	(0.824)	(0.228)	(0.336)	(0.746)	(0.098)	(0.178)
ID_32	-0.328	-0.006	0.0009	-0.194	-0.230	-0.007	-0.002
Pakistan	(0.000)	(0.76)	(0.44)	(0.001)	(0.012)	(0.246)	(0.129)
ID_33	-0.057	0.028	-0.001	0.026	0.001	0.002	0.0007
Panama	(0.007)	(0.2)	(0.01)	(0.227)	(0.595)	(0.408)	(0.779)

ID_34	-0.061	-.104	0.005	-.132	0.156	-.012	0.001
Peru	(0.322)	(0.026)	(0.009)	(0.146)	(0.26)	(0.243)	(0.668)
ID_35	-.011	-.029	0.004	0.053	0.152	0.003	0.003
Philippines	(0.842)	(0.38)	(0.12)	(0.26)	(0.425)	(0.783)	(0.24)
ID_36	0.058	-.017	-.008	-.005	0.011	0.004	-.014
Poland	(0.615)	(0.738)	(0.038)	(0.931)	(0.945)	(0.696)	(0.107)
ID_37	-.003	0.003	-.001	0.010	-.029	-.003	-.004
Saudi Arabia	(0.881)	(0.713)	(0.312)	(0.414)	(0.583)	(0.345)	(0.009)
ID_38	0.043	0.024	0.001	-.029	0.010	-.001	-.002
Singapore	(0.541)	(0.013)	(0.047)	(0.162)	(0.328)	(0.558)	(0.319)
ID_39	0.082	-.001	0.001	0.040	-.000	0.006	-.003
South Africa	(0.048)	(0.93)	(0.11)	(0.073)	(0.9)	(0.021)	(0.062)
ID_40	-.173	0.011	0.002	-.012	-.002	0.014	0.001
Spain	(0.024)	(0.477)	(0.178)	(0.356)	(0.004)	(0.023)	(0.785)
ID_41	-.013	-.006	-.002	0.035	0.005	-.007	0.004
Sri Lanka	(0.266)	(0.433)	(0.004)	(0.005)	(0.44)	(0.021)	(0.08)
ID_42	-.352	0.000	0.001	0.033	-.076	-.001	0.001

Sweden	(0.000)	(0.964)	(0.017)	(0.019)	(0.000)	(0.718)	(0.213)
ID_43	0.036	0.039	-0.000	0.008	-0.013	0.0002	0.001
Switzerland	(0.555)	(0.033)	(0.127)	(0.324)	(0.746)	(0.915)	(0.443)
ID_44	0.005	-0.002	0.0008	0.005	-0.000	-0.001	0.000
Thailand	(0.852)	(0.941)	(0.219)	(0.629)	(0.259)	(0.41)	(0.899)
ID_45	-0.012	0.009	-0.000	-0.014	0.006	-0.010	0.0003
Tunisia	(0.5)	(0.704)	(0.749)	(0.41)	(0.683)	(0.005)	(0.81)
ID_46	-0.230	-0.071	0.009	-0.297	1.260	0.044	-0.000
Turkey	(0.005)	(0.321)	(0.004)	(0.183)	(0.000)	(0.086)	(0.962)
ID_47	-0.312	-0.017	0.000	0.024	-0.000	-0.013	-0.006
United Kingdom	(0.005)	(0.715)	(0.761)	(0.643)	(0.992)	(0.054)	(0.313)
ID_48	-0.349	0.137	0.023	-0.355	0.358	-0.112	-0.004
United States	(0.022)	(0.39)	(0.032)	(0.268)	(0.061)	(0.012)	(0.824)

Table 28: Short Run Estimation using a Pooled Mean Group estimator for each group (country)

Notes: The value in parenthesis denotes the P-value.

Source: World Bank, SWIID, The Fraser Institute's Economic Freedom of the World database, the World Development Indicators (WDI) of the World Bank Calculation: Author

A country like South Africa may occasionally have a significant positive error correction (0.082). A short-term deviation from long-run equilibrium automatically triggers an adjustment process that returns the model to long-run equilibrium over time. The model is explosive for that country because, while all these countries are heterogeneous, they may have some resemblance or anything in common. As a result, long-run homogeneity is a plausible assumption.

4.2.6 Asymmetric Test.

One sort of non-linearity is asymmetry. In economic variables, asymmetries and various types of non-linearity are common. An increase (positive change) in financial development, for example, is stated to have a greater impact on certain macroeconomic indicators than a fall (negative change). Shin and Greenwood-Nimmo (2014) argue that "nonlinearity is pervasive within the social sciences and that asymmetry is intrinsic to the human situation." A typical time series regression model uses constant parameters and assumes that a change in the explanatory variable has the same impact throughout time, which is not always true. Popular cointegration approaches like EG-ECM, VECM, bound testing, and others assume a constant rate of adjustment (i.e., a constant ECT) to long-run equilibrium following a shock (change). However, this is not always the case (Dufrénot and Mignon, 2012).

Estimating an asymmetric connection with symmetric methodologies seems unjust, and it might lead to some extremely incorrect policy findings (Enders, 2015). Because the traditional cointegration test fails to capture asymmetries in macroeconomic variables, different strategies have been developed to account for them, including threshold ECM, smooth transition regression ECM, Markov-switching ECM, and so on. However, Shin et al. (2014) presented the NARDL, or Non-linear Autoregressive Model, which integrates asymmetries in both long and short-run connections while also capturing asymmetries in dynamic adjustment. It also allows for a mixed order of $I(0)$ and $I(1)$ regressors (1).

The symmetric assumption that the explanatory variable linearly impacts the dependent variable is used to estimate long-run association using the cointegration test. In actuality, changes in a variable might occur in either a positive or negative direction. Using the recently established nonlinear ARDL technique given by Shin et al. (2014), the asymmetry connection between variables is studied by considering positive and negative changes in an independent variable.

Tables 33 and 35 show the nonlinear ARDL estimation (Shin et al., 2014). The presence of an asymmetrical association between financial development and income inequality is studied using the Wald test. The Wald test statistic for long-run symmetry is performed, which is shown in table 34. At the 5% level of significance, the null hypothesis of the existence of a symmetric relationship is not rejected in the long run. Thus, there is no nonlinear relationship in the long run

between the examined variables. As such, Table 36 depicts the Wald test statistic for long-run symmetry between financial structure and income inequality.

		Log Likelihood = 4768.204				
D.LogGiniD		Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
ECT						
FDdec						
L2.		-10.07538	9.951927	-1.01	0.311	-29.5808 9.430036
FDinc						
L2.		-9.308508	9.181961	-1.01	0.311	-27.30482 8.687806
FPS						
L2.		.3206363	.306748	1.05	0.296	-.2805788 .9218514
LogGdpPca						
L2.		-1.153139	.9643182	-1.20	0.232	-3.043168 .7368904
BOO						
L2.		.0008462	.0069707	0.12	0.903	-.0128162 .0145086
LogSEI						
L2.		2.282747	2.246749	1.02	0.310	-2.120801 6.686295
Reg						
L2.		.0859545	.0972864	0.88	0.377	-.1047234 .2766324

Table 29: Nonlinear (asymmetric) Panel Autoregressive Distributed Lag

Source: World Bank, SWIID, The Fraser Institute's Economic Freedom of the World database, the World Development Indicators (WDI) of the World Bank Calculation: Author

```

. test l2.FDdec = l2.FDinc

( 1) [ECT]L2.FDdec - [ECT]L2.FDinc = 0

      chi2( 1) =    0.97
      Prob > chi2 =    0.3244

```

Table 30: The Wald test for the coefficients of financial development

Calculation: Author

		Log Likelihood = 4797.291				
D.LogGiniD		Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
ECT						
	FD					
	L2.	-.0099691	.0255494	-0.39	0.696	-.060045 .0401068
	FPSinc					
	L2.	-.0087395	.0025395	-3.44	0.001	-.0137169 -.0037622
	FPSdec					
	L2.	-.0090369	.0026659	-3.39	0.001	-.0142619 -.0038119
	LogGdpPca					
	L2.	-.1212762	.0190007	-6.38	0.000	-.1585169 -.0840356
	B00					
	L2.	-.0457939	.0085416	-5.36	0.000	-.0625352 -.0290525
	LogSEI					
	L2.	.1010497	.0116384	8.68	0.000	.0782389 .1238606
	Reg					
	L2.	-.0057203	.0036854	-1.55	0.121	-.0129435 .001503

Table 31: Nonlinear (asymmetric) Panel Autoregressive Distributed Lag

Source: World Bank, SWIID, The Fraser Institute's Economic Freedom of the World database, the World Development Indicators (WDI) of the World Bank Calculation: Author

```
. test l2.FPSdec = l2.FPSinc
( 1) - [ECT]L2.FPSinc + [ECT]L2.FPSdec = 0
      chi2( 1) =    0.04
      Prob > chi2 =  0.8360
```

Table 32: The Wald test for the coefficients of financial structure

Calculation: Author

Therefore, there is no nonlinear relationship in the long run between the financial structure and income inequality.

4.3 Discussion.

This empirical study is based on balanced panel data from 48 countries and encompasses the years between 1993 and 2017. Following several calculations and the omission of some

variables, seven variables from a total of 38 were chosen as independent and dependent variables, allowing the research to be completed. The Gini index ranges from 0 (perfect equality) to 1 (perfect inequality). As a dependent variable, the logarithm of the Gini index Disposable (**LogGiniD**) is employed. The following are the other six independent variables: Higher financial development index (**FD**) levels imply more developed financial systems. Higher values of the financial structure index (**FPS**) indicate that the country is more market-based than countries with fewer FPS. Lower levels of competition are indicated by higher Boone indicator (**BOO**) readings. A sub-index was used to measure freedom from government regulations (**Reg**), with higher values indicating friendlier regulation.

Other variables in this study include (log) real income per capita (**LogGdpPca**) to account for the influence of economic development on distribution and trade and the (Log of the) total of exports and imports as a percentage of GDP (**LogSEI**) to account for the impact of trade openness on income inequality. The initial step was to provide descriptive statistics of variables in order to provide a general picture of their correspondence. The graphs and tables reveal that there is a moderate connection between some of the factors in the data. For instance, Figure 8 depicts a mild parallel trend between financial development and income inequity in some of the countries that were randomly graphed. Then, to ensure that no variable of order two is integrated, the IPS test suggested by Im–Pesaran–Shin (2003) was used to look for unit roots in the data. Table 13 further shows that six variables are nonstationary and follow the I(1) process based on the unit

root test results. As a result, the first difference of I (1) variables was tested using the IPS unit root test. The IPS unit root test for them using constant and just one lag demonstrates that these series are stationary at the first difference, as shown in Table 21. Then a maximum lag is established, and the most common lag among all countries is picked. The most common lag for all variables is 2.

Therefore, the author proceeded to test for cointegration. Pedroni's (1999, 2004) cointegration tests were performed. The results of the tests reported in Table 23 support the long-run cointegrating relationship among the variables considered. The findings of the causality test are shown in Table 31. The null hypothesis was rejected for all variables, suggesting that the cointegrating link exists for all regressors. As a result, we may conclude that financial development, financial structure, competition, and lagged GDP per capita all have a strong causal relationship with income inequality. Before moving on to our main long-run findings, Appendix Table 17 shows PMG estimates of financial intermediary and stock market development that are commonly used in the literature for comparison. Financial intermediary development, as shown in the table, increases income inequality since the estimate of bank credit is positive and statistically significant. It reflects the inequality-widening argument that limited access to finance and financial services implies not just economic limits (Jauch and Watzka, 2016; De Haan and Sturm, 2017) but also obstacles established by insiders, as proposed by Claessens & Perotti (2007). However, the research refutes the notion that banks are particularly

crucial for funding the operation of small businesses and the formation of new businesses and that banks can develop intimate ties with their clients, lowering the cost of lending and increasing credit availability (Petersen & Rajan, 1994). Furthermore, the activity (liquidity) measure, value traded, exacerbates income inequality. The findings appear to back up Hau, Li, and Wang's claims (2018). Additionally, the total degree of financial development is shown to increase income inequality, as seen in table 26, where the *FD* estimate is positive and substantial.

The estimations provide more interesting outcomes. First, for the global sample and various sample specifications, the majority of the short-run coefficients are not significant. The lack of a short-run association between income inequality and financial development, financial structure, and other variables in this study explains this outcome. Second, table 26 shows our baseline regression estimates from PMG, which are our major long-run estimates. The coefficient of financial development is positive and statistically significant, implying that development in financial intermediaries and stock markets is linked to increased income inequality.

Furthermore, if the financial sector accounts for an additional 1% of GDP, this corresponds to a greater Gini coefficient. The financial structure has a negative coefficient, which is statistically significant, showing that a market-led financial system is linked to decreased income inequality.

The evidence supports the findings of Hau, Li, and Wang (2018) and Liu, Liu, and Zhang (2017), who found that a market-led financial system helps to equalize economic opportunities and thereby reduce income inequality. Also worth noting is the fact that lagged GDP per capita is

positive and statistically significant. Income disparity is higher in countries with stronger economic development. Next, *LogSEI* was employed as a proxy for trade openness in this study. Trade openness is strongly connected with income inequality, according to Table 31. The results support those of Lundberg and Squire (2003), and they support the widely held belief that expanding international openness would primarily benefit domestic residents who are already relatively wealthy, perhaps because the relatively sophisticated, wealthy groups would be best able to take advantage of the opportunities offered by global commerce, such as access to foreign technology and managerial know-how, as well as culture, and would be the ablest to benefit. Table 26 reports the estimated impact of bank market power with the Boone indicator (*BOO*) as a proxy of competition. Lower Boone indicator (*BOO*) shows higher levels of competition.

As illustrated, for PMG estimates, countries with a more competitive banking sector tend to experience lower income inequality. The estimate of competition is negative and statistically significant. The more negative the Boone indicator is, the more competitive the market is. A 10% reduction in *BOO* shows higher bank competition. That would decrease the Gini index by 1.6%. The findings appear to back up the market power hypothesis, which suggests that less competitive banking markets lead to increased credit rationing. To put it another way, lower competition helps to reduce inequality.

Then government regulation, in general, was included. The regulatory variable is negatively but not significantly connected with income disparity, as seen in Table 26. Furthermore, for several

countries (table 28), such as the Netherlands, Nigeria, Saudi Arabia, Brazil, and Japan, coefficients of regulation are significant at the 0.05 level and negative in the short run. If this indication is negative, it suggests that market flexibility would help to spread income more evenly. It would be in direct contrast to the political economy idea that deregulation enriches elite people while the risks are borne by a broader group of people (Claessens & Perotti, 2007). Appendix Table 17, on the other hand, provides a positive coefficient for Reg that is significant at the 0.01 level. This estimation would be more credible since it contains three variables in the model, and the coefficient is significant. As a result, the conclusion of De Haan and Sturm (2017) that financial liberalization increases income disparity would be more accurate.

A nonlinear (asymmetric) Panel Autoregressive Distributed Lag (ARDL) model was formulated in order to account for both asymmetric and heterogeneous effects in the financial development, financial structure, and income inequality nexus. PMG is consistently chosen as the efficient estimator under the null hypothesis for all models, regardless of whether the specification is linear (symmetric) or nonlinear (asymmetric). For that purpose, only the recommended estimator's results are published and analyzed in this thesis. Also, the approach accounts for asymmetry in a non-linear fashion by computing the positive and negative partial sum decompositions of the relevant explanatory variable(s) (which are FD and FPS in this case). Nonlinearities were accounted for by decomposing the financial development and Financial

structure series into positive and negative changes. For long-run symmetry, two Wald test statistics were used. In the long run, the null hypothesis of the existence of a symmetric connection is not rejected at the 5% level of significance. As a result, there is no nonlinear relationship between financial development and income disparity in the long run. Furthermore, there is no asymmetric association between financial structure and income inequality in the long run.

Chapter 5

5 Second Empirical analysis: Neoliberalism, Financialization, and Income Inequality.

There has been little empirical study on how neoliberalism and financialization affect income disparity. For the period, 1980 to 2017, this chapter examines the long-run effects of neoliberalism and financialization on a variety of income inequality metrics in 14 OECD capitalist countries. Soskice and Hall (2001) contend that there are two types of wealthy capitalist countries: coordinated market economies (CMEs) and liberal market economies (LMEs). CMEs like Germany, Norway, Finland, and Sweden had comprehensive social programs, powerful labor movements, and corporate practices that valued long-term relationships and planning. LMEs such as the United States, the United Kingdom, Australia, Canada, and New Zealand have weaker labor movements, welfare states, and corporate practices that prioritize short-term relationships and planning. Some political scientists (Esping-Anderson, 1990) have studied multiple forms of capitalism; this study examines the determinants of income inequality in three sets of nations between 1980 and 2011, known as the neoliberal era, and 1980–2017. Three groups of countries in this study are: neoliberal countries (the United States, United Kingdom, Canada, and Australia); middle-class welfare states, be they social democratic (as in Scandinavia or Nordic countries (Denmark, Finland, Sweden, and Norway)); or social-corporatist (France and Germany). Neoliberalism has been the primary prism through which

wealthy democracies have understood capitalist development since 1980. By lowering taxes, slashing or privatizing state social programs, deregulating markets, fighting unions, and boosting international trade agreements, neoliberalism became the political philosophy and policy framework that allowed capital to reclaim control over labor (Kotz and McDonough, 2010). Margaret Thatcher's and Ronald Reagan's neoliberal policies in the United Kingdom and the United States helped establish neoliberalism as the master framework for global economic policy (Harvey, 2005). Financialization refers to “the tendency for profit making in the economy to occur increasingly through financial channels rather than productive activities” (Krippner, 2011, p. 4). Financialization has been increasingly connected to rising income and wealth inequality, according to academics (Zalewski and Whalen, 2010; Kus, 2012). This chapter examines how the neoliberal era's financialization and neoliberalism contributed to income inequality.

5.1 Data, variables, and summary statistics.

The Comparative Welfare States (CWS) Data Set, 2020, compiled by David Brady, Evelyne Huber, and John D. Stephens, is the chapter's major data source. Between 1980 and 2017, the effects of neoliberalism and financialization on several measures of income inequality in 14 countries (Australia, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Sweden, the United Kingdom, and the United States) are discussed in this

chapter. In theory, the 1980s corresponded to the neoliberal age of capitalist growth, which stresses unrestricted free markets, privatization, deregulation, free trade, and a diminished involvement of the state in markets and the provision of social services. 1981, the first year of the study, is often seen as the start of the neoliberal era (Tomaskovic-Devey and Lin, 2011). The Luxembourg Income Study (LIS) is used to look at how neoliberalism and financialization affect inequality in the upper and lower classes. The LIS is the only worldwide dataset with individual-level income statistics that may be used to infer information about specific income distribution shares. The OECD database and the World Bank database are two more data sources. In addition, the study analysis is conducted using a database from the Fraser Institute.³

³ Because some of the data from 1980 to 2000 were unavailable, interpolated values were used. Overall, the neoliberal state variable's values do not vary significantly from one observation to the next, therefore interpolation should be rather safe in this case. This is also sensible, considering that neoliberal policy changes are often implemented through slow-moving bureaucratic and political procedures that do not vary and fluctuate greatly from year to year.

5.1.1 Dependent Variables.

Different dimensions of income disparity are captured by four dependent variables. The first dependent variable, the Gini Index (*DGini*) (disposable household income), assesses how far a particular aggregate's distribution across individuals or households within an economy deviates from a completely equal distribution. After deducting the amount of income taxes and social contributions paid, aggregate equivalized disposable household income refers to cash and non-cash labor income, capital income, income from pensions (including private and public pensions), and non-pension public social benefits stemming from insurance, universal or assistance schemes (including in-kind social assistance transfers), as well as cash and non-cash private transfers. The second variable is the *D9010* (c). The indicator 90/10 Percentile Ratio measures the income of those in the 90th percentile compared to those in the 10th percentile. The third is *D9050* (90/50 Percentile Ratio). The indicator 90/50 Percentile Ratio compares the income of people in the 90th percentile to that of people in the median. *D5010* (50/10 Percentile Ratio) in the fourth dependent variable. The indicator 50/10 Percentile Ratio compares the income of people in the middle of the income distribution to that of people in the bottom 10%. How inequality is influenced at each position in the income distribution can be assessed by using the previous three measures.

While the Gini index, the most widely used and useful measure of income inequality, is good at expressing what's going on in the middle of the income distribution, it is not so good at catching changes in the tails (Volscho and Fullerton, 2005). This chapter looks at how neoliberalism and financialization affect distinct segments of the income distribution: a) upper-tail inequality (90/50 income ratio); b) lower-tail inequality (50/10 income ratio); and c) top-bottom inequality (90/10 income ratio). In comparison to the 90th percentile, the variations in jobs and income sources for the 50th and 10th percentiles are more noticeable. The middle class is represented by the 50th percentile, or median worker (Wright and Rogers 2015). These families are more likely to work in white-collar positions that require a college diploma.

The 50th percentile may also be seen in blue-collar manufacturing occupations in countries with strong unions. The impoverished are represented by the tenth percentile. These people may labor in positions that require little training and pay little money, and they may rely on government aid to make ends meet. By looking at the three segments of the income distribution, we acquire a more thorough understanding of which areas of the income distribution are influenced by changes in inequality. Figure 19 and 20 show changes in the top 10% share of income after taxes and transfers for 14 OECD countries from 1980 to 2017. While the rich's incomes have been growing in general, the rich's income shares have not been rising in all countries. In some countries, such as Denmark, France, Germany, and the Netherlands, the top 10% of income has remained relatively consistent during the last 38 years. Other nations with relatively minor

growth in the top 10% share include Belgium, Canada, Finland, Italy, Norway, and Sweden. From 1980 to 2017, the top 10% of income in Australia, the United Kingdom, and the United States increased significantly. The degrees of inequality vary dramatically from country to country. Figure 20 depicts the United States, the United Kingdom, and Australia, for example, have rather high levels of upper-tail inequality. France, Germany, and Canada are in the center of the pack. Finally, upper-tail inequality was quite modest in countries like Sweden, Denmark, and Norway.

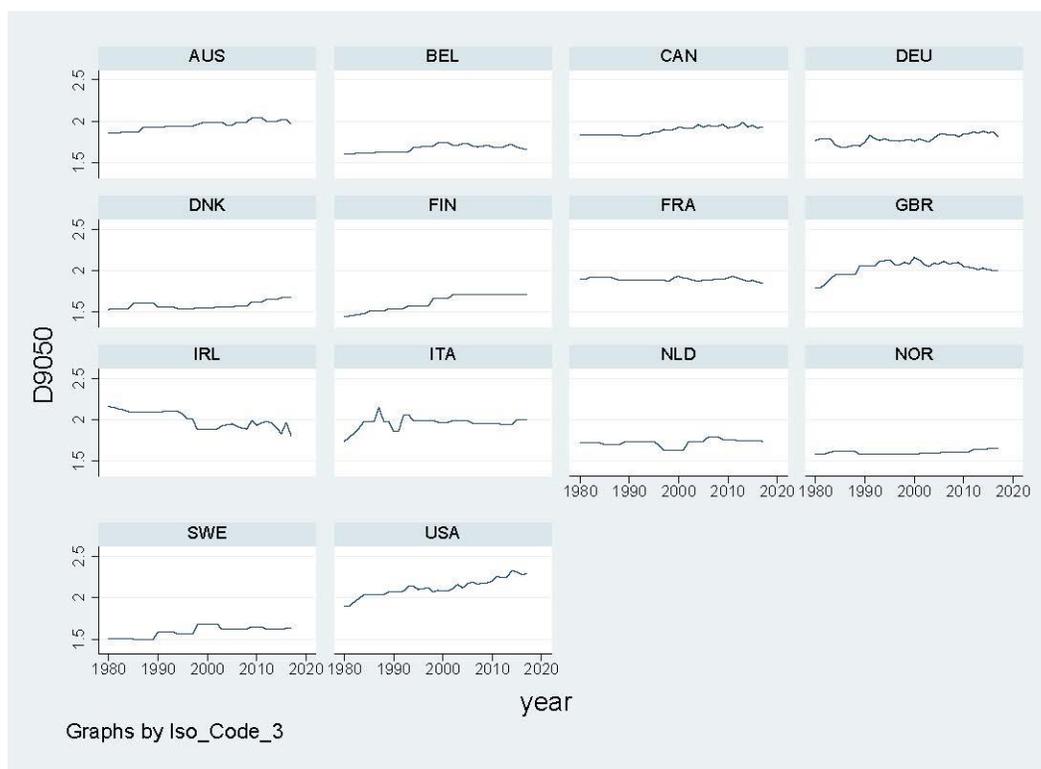


Figure 20: The trend of 90/50 Percentile Ratio for 14 OECD countries, 1980- 2017

Source: The Luxembourg Income Study (LIS), Calculation: Author

The changes in top-bottom inequality, or the income ratios between the 90th and 10th percentiles, are shown in Figure 21. Except for Sweden, Denmark, the Netherlands, Norway, and Finland, which have very low numbers, the United Kingdom, France, Germany, Ireland, and Australia are in the median range. The United States has the most top-bottom inequality. In Australia, Belgium, Finland, Germany, Sweden, Italy, and the United States, top-bottom inequality has risen. Despite fluctuations, top-bottom inequality remained stable in some nations,

including Canada, the Netherlands, France, the United Kingdom, and Norway. There was a decreasing gap between the very affluent and the poor in Ireland.

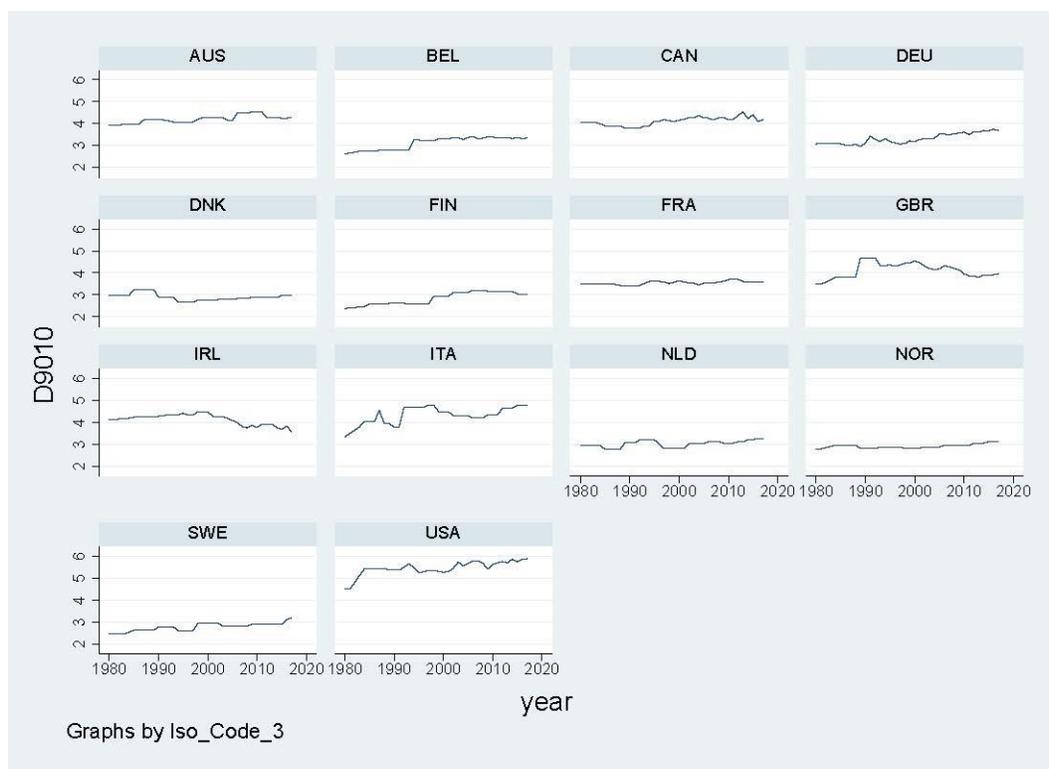


Figure 21: The trend of 90/10 Percentile Ratio for 14 OECD countries, 1980- 2017

Source: The Luxembourg Income Study (LIS), Calculation: Author

Figure 22 depicts a distinct pattern for lower-tail inequality in the 14 countries between 1980 and 2017. When it comes to lower-tail inequality, there is more difference between countries than when it comes to upper-tail inequality. Over time, the United States had by far the most lower-tail inequality, followed by Canada and Australia. Italy, Ireland, and the UK were in the middle of the group. The remaining countries had lower levels, with Sweden, the Netherlands, and Finland had the lowest.

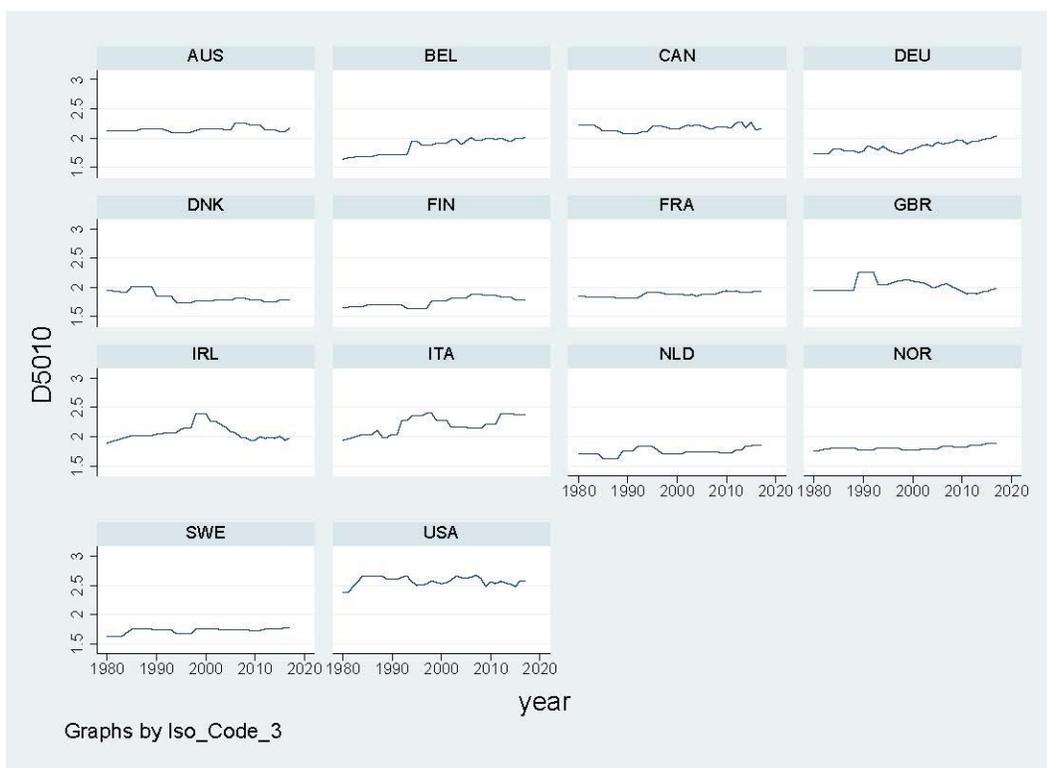


Figure 22: The trend of 50/10 Percentile Ratio for 14 OECD countries, 1980- 2017

Source: The Luxembourg Income Study (LIS), Calculation: Author

In this chapter, the author examines how neoliberalism and financialization influenced the incomes of the wealthy in 14 OECD countries from 1980 to 2017.

5.1.2 Independent Variables.

One of the defining features of neoliberalism is the shift of the state's role in shaping markets and social welfare (Kotz and McDonough, 2010). Several significant changes in the role of the state in the market and social welfare have happened during this period, which are captured by the neoliberal state variables that are employed in this study. First, in many prosperous countries, the wealthy's tax burden has been reduced (Kotz and McDonough 2010). Second, the government has had less role in generating aggregate demand (Harvey 2005; Kotz and McDonough 2010). Many governments employed public spending and investment to augment market demand during the post-World War II era in order to stimulate economic growth and reduce unemployment. During the neoliberal era, it was argued that the government should cut spending to reduce inflation, but at the expense of economic growth and unemployment. Third, state-sponsored social programs that complement working people's salaries, including pensions, unemployment insurance, and educational subsidies, have been reduced (Harvey 2005; Kotz and McDonough 2010; Wright and Rogers 2015). Fourth, many public goods like transportation, social welfare

programs, education, and job training have been reduced or privatized, resulting in less redistribution (Harvey 2005; Kotz and McDonough 2010; Wright and Rogers 2015).

The neoliberal state index (*NeoSt*) is the neoliberal metric employed in this research, and it shows how big of influence neoliberalism has had on state policies and size. Government decision-making is replaced by individual choice when government spending, taxation, and the scale of government-controlled firms expand, reducing economic freedom (James Gwartney, Robert Lawson, Joshua Hall, and Ryan Murphy, 2021). The neoliberal state is measured using four metrics of neoliberalism. a) Government consumption spending as a percentage of total consumption (*GCons*); b) Government transfers and subsidies as a percentage of GDP (*TrSub*); c) Government investment as a percentage of total investment (*GInves*); and d) the highest marginal tax rate (*TmTR*). The neoliberal state indices go from 0 to 10, with 0 indicating a big, interventionist state and 8 indicating a neoliberal state with minimum size and market influence. These indicators are published by the Fraser Institute.

As a multi-dimensional notion of financialization, this chapter employs two proxies. To begin, using the world bank database, "FIRE" employment refers to the percentage of workers engaged in the finance, insurance, and real estate industries (*FIRE*). The first indicator to investigate the relationship between financialization and income inequality is FIRE employment, which captures the size and dominance of finance, insurance, and real estate firms in the labor market.

Furthermore, it signifies the financial industry's political and economic dominance. In the literature on income inequality, FIRE employment is the most widely used measure of financialization.

Because financial sector incomes have been expanding at a considerably faster rate than nonfinancial workers, even after controlling for productivity and human capital characteristics, FIRE employment is predicted to worsen income inequality (Tomaskovic-Devey and Lin, 2011). The second metric is domestic credit to the private sector (percentage of GDP), which refers to financial resources supplied to the private sector in the form of loans, non-equity securities purchases, trade credits, and other accounts receivable that create a claim for repayment. Credit to state enterprises is a part of several countries' claims. Because of financial deregulation, laws limiting bank leverage have been reduced in the United States and other countries throughout the neoliberal era (Krippner, 2011; Lapavitsas, 2014). This index presents new leveraging options, with the potential for bigger financial benefits but also increased risk in financial markets. This index is retrieved from the global financial development database. A dummy variable indicates whether or not a banking crisis exists (1 = banking crisis, 0 = none). If two requirements are satisfied, a banking crisis is considered systemic: Major symptoms of financial distress in the banking system (as evidenced by considerable bank runs, system losses, and/or bank liquidations); and significant banking policy intervention measures in reaction to significant losses in the banking system. The year in which both requirements are satisfied is regarded as the

year in which the crisis becomes systemic. The year before both real GDP growth and real credit growth are positive for at least two consecutive years is considered the conclusion of a crisis (Laeven and Valencia, 2018).

5.1.3 Control Variables.

Several control variables are used in the studies. Two different business cycle indicators are used. The first is economic growth (*GDPg*), which is calculated using World Bank National Accounts Data and is quantified as the yearly percent growth rate of GDP at market prices based on constant 2000 US dollars. If economic prosperity tends to reward all residents equally, it should be anticipated that income inequality will diminish as a result of economic progress. If economic prosperity disproportionately benefits the wealthy, it should be anticipated that inequality will rise as a result of increased growth. The second factor is unemployment (*Unemp*), which is retrieved using the OECD Main Indicators and is based on the unemployment rate for adult employees. Unemployment is projected to widen income disparities since it is linked to a higher supply of workers than demand, lowering labor's negotiating power relative to capital. Finally, because the relationship between globalization and income inequality has been widely studied, a measure of globalization should be controlled. The total of exports (export) and imports (import) as a percentage of GDP, all at current prices, is referred to as trade openness (*Tradeopen*).

<i>Variables</i>	<i>Name</i>	<i>Description</i>
<i>D9010</i>	d9010 - 90/10 Percentile Ratio of Equivalized Disposable Household Income by Total Population	Indicator 90/10 Percentile Ratio represents the income by individuals at the 90th percentile compared to one of the individuals at the 10th percentile.
<i>LogD9010</i>	Log	
<i>DGini</i>	Gini Index of Equivalized Disposable Household Income by Total Population	Indicator Gini Index measures the extent to which the distribution of the specified aggregate among individuals or households within an economy deviates from a perfectly equal distribution. The Gini index measures the area between the Lorenz curve and the hypothetical line of absolute equality. A Gini index of zero represents perfect equality, and one is perfect inequality. Gini Index of Equivalized Disposable Household Income
<i>LogDGini</i>	Log	
<i>D9050</i>	d9050 - 90/50 Percentile Ratio of Equivalized Disposable Household Income by Total Population	Indicator 90/50 Percentile Ratio represents the income by individuals at the 90th percentile compared to one of the individuals at the median.
<i>LogD9050</i>	Log	
<i>D5010</i>	d5010 - 50/10 Percentile Ratio of Equivalized Disposable	Indicator 50/10 Percentile Ratio represents the income by individuals at the median compared to the one of individuals at the 10th percentile.

Household Income by Total		
Population		
<i>LogD5010</i>	Log	
<i>NeoSt</i>	Neoliberal State Index	
<i>LogNeoSt</i>	Log Neoliberal State Index	
<i>GCons</i>	Government Consumption	general government consumption spending as a percent of total consumption;
<i>TrSub</i>	Transfers and Subsidies	general government transfers and subsidies as a percent of GDP
<i>GInves</i>	Government Investment	government investment as a share of total investment
<i>TmTR</i>	Top marginal tax rate	the top marginal tax rate

As government spending, taxation, and the size of government-controlled enterprises increase, government decision-making is substituted for individual choice, and economic freedom is reduced. The neoliberal state measure ranges from 0 representing a large, interventionist state to 8 representing a neoliberal state that has minimal size and influence in the market.

<i>CreExp</i>	Domestic credit to the private sector (% of GDP)	Domestic credit to the private sector refers to financial resources provided to the private sector.
<i>LogCreExp</i>	Log Domestic credit to the private sector.	

<i>FIRE</i>	Finance, Insurance, and Real estate industries Employment	FIRE employment is the percent of the labor force employed in the finance, insurance, and real estate industries.
<i>LogFIRE</i>	Log Finance, Insurance, and Real estate industries Employment	
<i>Bcris</i>	Banking crisis dummy (1=banking crisis, 0=none)	A banking crisis is defined as systemic if two conditions are met: a. Significant signs of financial distress in the banking system (as indicated by significant bank runs, losses in the banking system, and/or bank liquidations), b. Significant banking policy intervention measures in response to significant losses in the banking system. The first year that both criteria are met is considered the year when the crisis starts becoming systemic. The end of a crisis is defined as the year before both real GDP growth and real credit growth are positive for at least two consecutive years.
<i>GDPg</i>	GDP growth (annual %)	World Bank national accounts data, and OECD National Accounts data files.
<i>Unemp</i>	Unemployment rate Total, % of the labor force	The unemployed are people of working age who are without work, are available for work, and have taken specific steps to find work. The uniform application of this definition results in estimates of unemployment rates that are more internationally comparable than estimates based on national definitions of unemployment. This indicator is measured in the numbers of unemployed people as a percentage of the labor force, and it is seasonally adjusted. The labor force is defined as the total number of unemployed people plus those in employment. Data are based on labor force surveys

		(LFS). For European Union countries where monthly LFS information is not available, the monthly unemployed figures are estimated by Eurostat.
<i>Tradeopen</i>	Trade openness	Trade openness is defined as the sum of exports (export) and imports (import) as a percentage of GDP, all at current prices.

Table 33: Variables

Source: World Bank, The Luxembourg Income Study (LIS), Comparative Welfare States (CWS), The Fraser Institute's Economic Freedom of the World database, the World Development Indicators (WDI) of the World Bank, OECD database Calculation: Author

The neoliberal state index is the neoliberal measure employed in this research, and it shows how much neoliberalism has had an influence on state policies and size. In Figure 22, the author shows changes in the neoliberal state index for 14 OECD countries from 1980 to 2011. Despite differences in the process, there is a general trend in prosperous countries to transform the state into a neoliberal endeavor. Throughout the neoliberal period, liberal market economies such as the United States, the United Kingdom, Australia, and Canada have steadily moved toward a more neoliberal state. In the 1980s, coordinated market economies in Scandinavia, such as Sweden, Denmark, and Norway, had relatively low levels of neoliberalism and, despite some

modest rises, finished the period with low to moderate levels of neoliberalism. Neoliberalism rose in other countries, such as Finland, Ireland, Italy, and Belgium, from 1980 through the mid-1990s and early 2000s. However, it fell after that.



Figure 23: The trend of the neoliberal state index (*NeoSt*) from 1980 to 2011

Source: The Fraser Institute's Economic Freedom of the World database, Calculation: Author

During the neoliberal period, countries like France and Germany saw fluctuations; yet there was a general tendency toward a more neoliberal state. Finally, the neoliberal state in the Netherlands has deteriorated. Occasionally, certain countries see significant rises in the neoliberal agenda scale, indicating significant policy shifts. However, there is unquestionably a general trend toward a more neoliberal state.

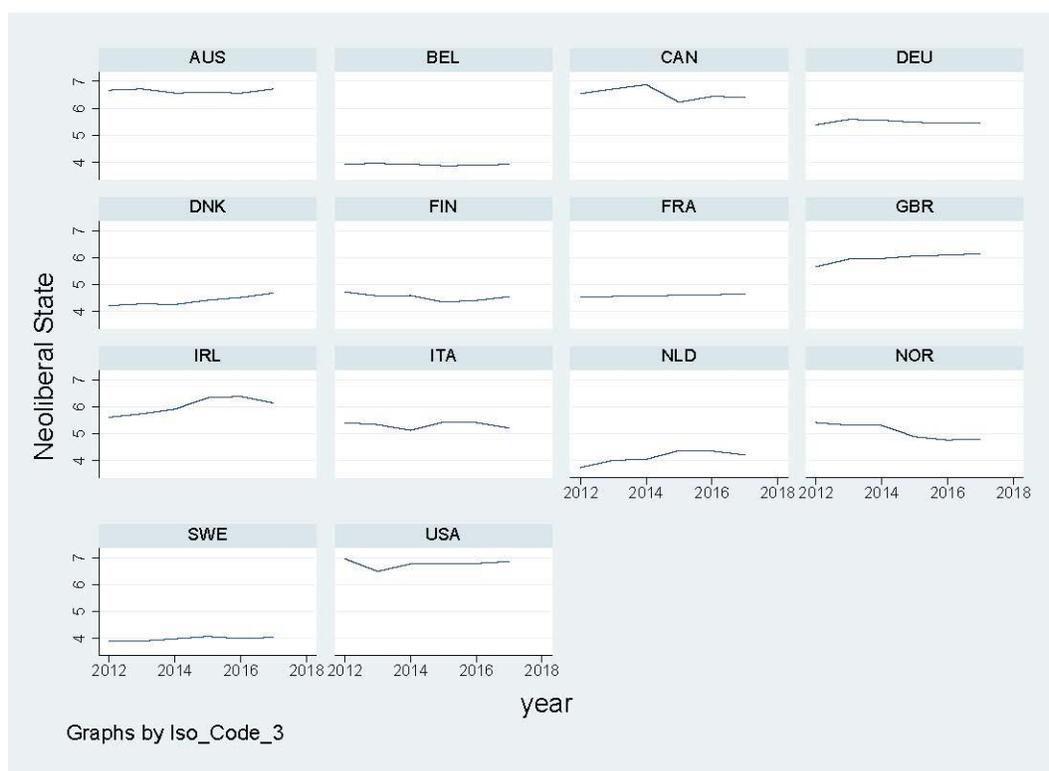


Figure 24: The trend of the neoliberal state index (NeoSt) from 2012 to 2017

Source: The Fraser Institute's Economic Freedom of the World database, Calculation: Author



Figure 25: The trend of the neoliberal state index (NeoSt) from 1980 to 2017

Source: The Fraser Institute's Economic Freedom of the World database, Calculation: Author

In market-based, financialized economies, the first facet of financialization, FIRE employment, focuses on the rising number of employees in the finance, insurance, and real estate industries, as

well as secondary workers who offer supplementary services to these professionals (Lapavitsas, 2014). FIRE employment has been continuously increasing in most of the 14 countries studied in this dissertation. Figure 25 depicts the trends in FIRE employment for each country from 1981 to 2011. One of the most striking features of these graphs is the consistency of the growth in FIRE employment across the majority of the 14 countries throughout this timeframe. In 1980, less than 13% of the labor force in the United States worked in the FIRE industry. By 2011, nearly 20% of employees worked in FIRE industries. The surge of FIRE jobs in the United States was significant after 2000, peaking around 2003, owing to Wall Street deregulation and technology and real estate speculation (Wright and Rogers, 2015).

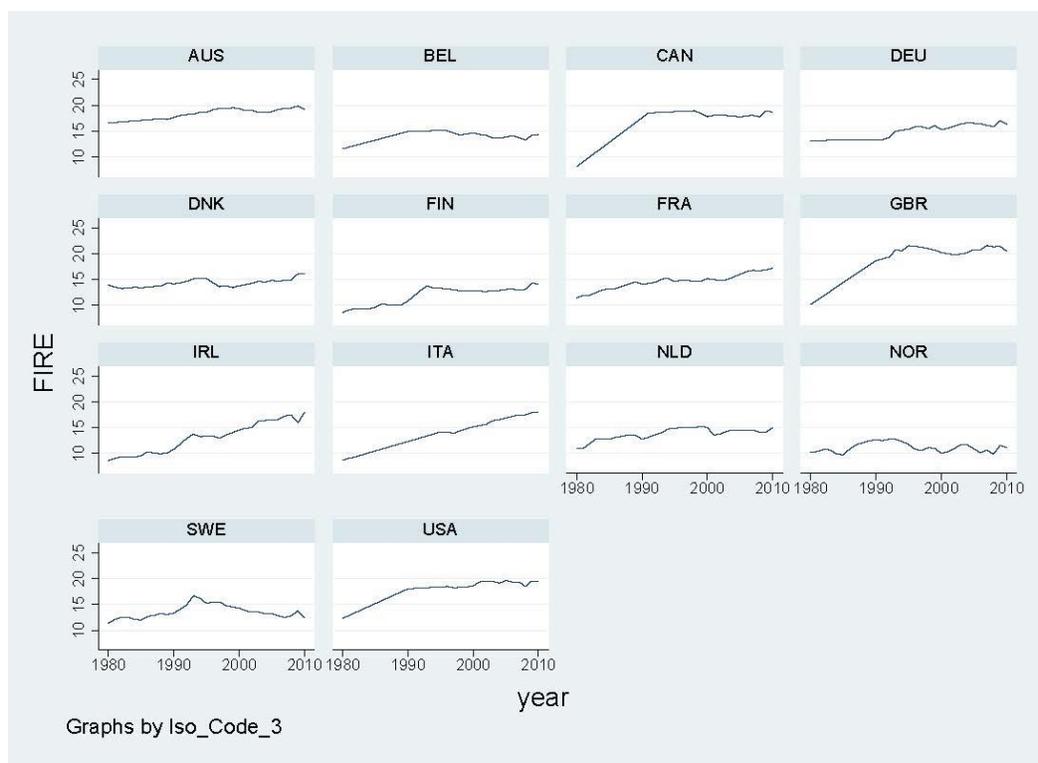


Figure 26: The trend of FIRE employment (FIRE) from 1980 to 2011

Source: World Bank Calculation: Author

Credit expansion, or the quantity of credit granted to private sector enterprises in relation to a country's economic production, is the second facet of financialization. Credit expansion is an important feature of financialization since it emphasizes the importance of financial institutions in credit flow management (Krippner, 2011). Private-sector lending trends differ significantly

per country. Figure 26 shows changes in banking-provided private sector lending in 14 OECD countries from 1981 to 2017. There is a general rising tendency across the 14 nations on average. The United States is well-known for using Chinese and Japanese loans to finance its public debt (Lapavitsas 2014). In 1980, Norway's private sector credit was roughly 50% of GDP, and in 2011, it was around 100% of GDP. Over the era, Anglo-Saxon countries like Australia, Ireland, the United Kingdom, and the United States had continuous rises in private sector lending. Other countries, such as France, Germany, and Finland, have relatively constant private sector lending levels.

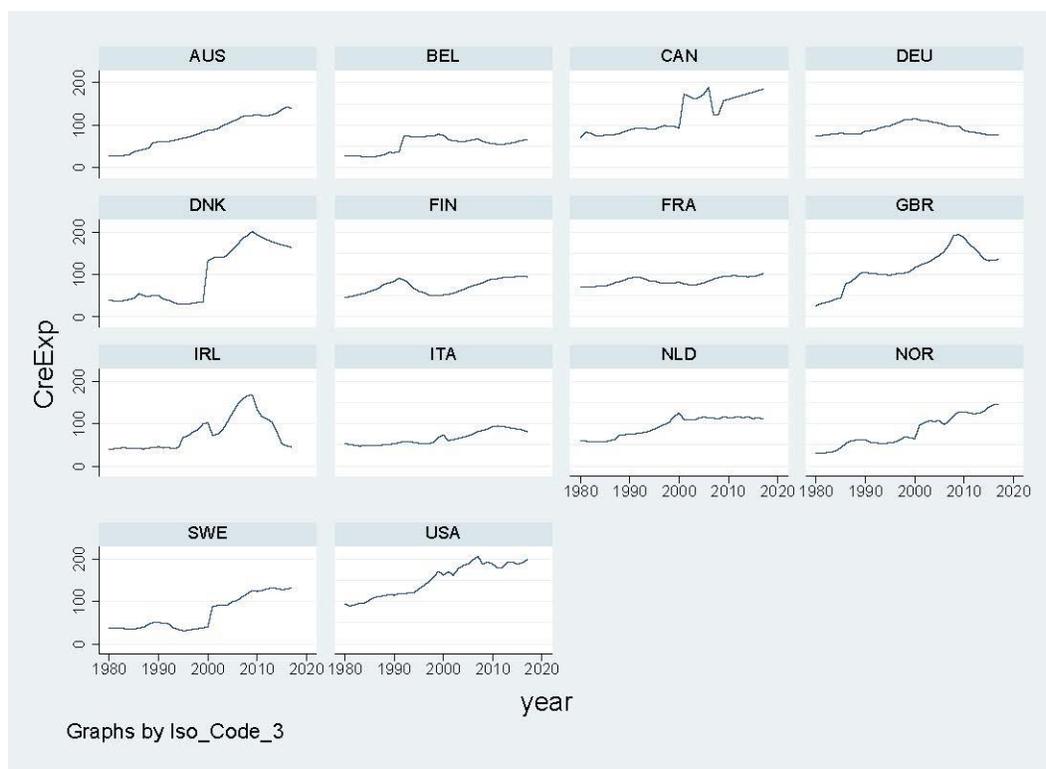


Figure 27: The trend of the credit expansion (*CreExp*) from 1980 to 2017

Source: The World Development Indicators (WDI) of the World Bank Calculation: Author

Banks commonly increase their leverage by borrowing money from other banks, which they then utilize to create more investments and financial profits. This establishes an interconnected debt structure among banks, which drives speculation. The buildup to the 2008 financial crisis in the United States and other countries exemplifies how deregulation contributes to leverage in a variety of ways.

Finally, the author looks at how banking crises play a role. As the social mechanisms of accumulation increasingly rely on debt and leverage, researchers anticipate that financialized capitalism will become more volatile, leading to more frequent and intense boom and bust cycles (Harvey, 2010; Lapavistas, 2014). Excessive risk may lead to financial collapse, as seen by events like the 2008 stock market and the financial crisis in the United States.

<i>Country</i>	<i>Number of the Banking crisis</i>	<i>Years</i>
<i>BEL</i>	5	2008-2009-2010-2011-2012
<i>DNK</i>	2	2008-2009
<i>FIN</i>	5	1991-1992-1993-1994-1995
<i>FRA</i>	2	2008-2009
<i>DEU</i>	2	2008-2009
<i>IRL</i>	5	2008-2009-2010-2011-2012
<i>ITA</i>	2	2008-2009
<i>NLD</i>	2	2008-2009

<i>NOR</i>	3	1991-1992-1993
<i>SWE</i>	7	1991-1992-1993-1994-1995-2008-2009
<i>GBR</i>	4	2008-2009-2010-2011
<i>USA</i>	6	2007-2008-2009-2010-2011

Table 34: Banking crisis for 14 OECD countries, 1980- 2017

Source: The World Development Indicators (WDI) of the World Bank Calculation: Author

Between 1980 and 2017, the frequency and years of financial crises in the 14 OECD nations are shown in Table 38. Banking crises were common in the 12 countries studied, ranging from two in France to seven in Sweden. It is also worth emphasizing that several years of crises indicate deeper and longer-term banking instability, which can have severe consequences for labor markets and the state's fiscal situation. The data analysis is being done with Stata 16.0. The author handles the panel settings of a dataset before going on. Memory data, according to Table 39, is a panel in which the order of observations matters. The delta represents the time interval between measurements in time var units, which is one year.

Panel variable:	c_id (strongly balanced)
Time variable:	year, 1980 to 2017
Delta:	One year

Table 35: The panel settings of a dataset

Calculation: Author

Correlation Analysis is performed to see if the regressors are in an exact or linear relationship. A correlation score of 0.80 or higher between the explanatory variables implies that the variables have a linear connection.

	LogDGini	LogD5010	LogD9050	LogD9010	GCons	TrSub	GInves	TmTR	NeoSt	LogCre~p	LogFIRE	GDPg	LogUnemp	logtra~n
LogDGini	1.0000													
LogD5010	0.8577	1.0000												
LogD9050	0.9645	0.7870	1.0000											
LogD9010	0.9606	0.9496	0.9370	1.0000										
GCons	0.5921	0.5581	0.6500	0.6365	1.0000									
TrSub	0.4786	0.5717	0.4681	0.5510	0.3092	1.0000								
GInves	0.2667	0.1930	0.2681	0.2389	0.2585	0.1574	1.0000							
TmTR	0.6344	0.6082	0.5777	0.6309	0.2894	0.5047	0.1365	1.0000						
NeoSt	0.7550	0.7507	0.7474	0.7926	0.6873	0.7612	0.4139	0.7925	1.0000					
LogCreExp	0.4237	0.3393	0.3721	0.3802	0.0158	0.3440	0.0916	0.6796	0.4688	1.0000				
LogFIRE	0.5676	0.5055	0.5496	0.5572	0.2355	0.3098	0.1539	0.6157	0.5232	0.5391	1.0000			
GDPg	0.0659	0.0636	0.0619	0.0665	0.1781	0.1760	0.1635	0.0491	0.1893	-0.1184	-0.0772	1.0000		
LogUnemp	0.2257	0.0827	0.2933	0.1950	0.2455	-0.0931	-0.0420	-0.1819	-0.0326	-0.2218	0.0130	-0.0684	1.0000	
logtradeopen	-0.3322	-0.4550	-0.3484	-0.4316	-0.3438	-0.2667	0.1621	-0.3005	-0.3421	-0.1688	-0.1493	0.1400	0.0475	1.0000

Table 36: Correlation Analysis

Source: World Bank, The Luxembourg Income Study (LIS), Comparative Welfare States (CWS), The Fraser Institute's Economic Freedom of the World database, the World Development Indicators (WDI) of the World Bank, OECD database Calculation: Author

The regressors do not have perfect or precise linear relationships between explanatory variables and each dependent variable, as seen in Table 40. As a result, the multicollinearity test would pass this model.

5.2 Methods and Results.

Panel data analysis gives regression analysis a spatial and temporal dimension. A collection of observational cross-sectional units is referred to as the spatial dimension. In this thesis, the spatial dimension is countries, and the temporal dimension is periodic measurements of a collection of variables that characterize these cross-sectional units through time. The panel data collection for this study includes 14 nations. This pooled data collection, also known as time series-cross sectional data, has a total of $14 \times 38 = 532$ observations for each variable. In other words, samples are obtained once a year, and the 14 nations are followed for 38 years. Panel analytic models are available in many different shapes and sizes.

Because of the increasing number of time measurements, nonstationary is an issue in large N and large T dynamic panels. In their works, Pesaran, Shin, and Smith (1997, 1999) provide two

important new methods for estimating nonstationary dynamic panels with diverse characteristics across groups. There are two types of estimators: mean-group (MG) and pooled mean-group (PMG). The MG estimator (Pesaran and Smith 1995) estimates N time-series regressions by averaging the coefficients, whereas the PMG estimator (Pesaran, Shin, and Smith 1997, 1999) utilizes a mix of pooling and averaging.

The following regressions with a multifactor error structure are performed to examine the connection between income inequality (*LogDGini*, *LogD5010*, *LogD9050*, and *LogD9010*) and the neoliberalism index (*GCons*, *TrSub*, *GInves*, *TmTR*, and *NeoSt*) and financialization index (*LogCreExp*, *LogFIRE*, and *Bcris*). The generalized ARDL (p, q, q, ..., q) model is specified as:

$$y_{it} = \sum_{i=1}^p \delta_i y_{i,t-j} + \sum_{i=0}^q \beta'_{ij} X_{i,t-j} + \varphi_i + e_{it}$$

Where y_{it} is the dependent variable, $(X'_{i,t})'$ is a $k \times 1$ vector that is allowed to purely I(0) or I(1) or cointegrated; δ_{ij} is the coefficient of the lagged dependent variable called scalars; β_{ij} are $k \times 1$ coefficient vectors; φ_i is the unit-specific fixed effects; $I = 1, \dots, N$; $t = 1, 2, \dots, T$; p, q are optimal lag orders; e_{it} is the error term.

The re-parameterized ARDL (p, q, q, ..., q) error correction model is specified as:

$$\Delta y_{it} = \theta_i [y_{i,t-j} - \lambda'_i \mathbf{X}_{i,t}] + \sum_{i=1}^{p-1} \zeta_{ij} \Delta y_{i,t-j} + \sum_{i=0}^{q-1} \beta'_{ij} \Delta \mathbf{X}_{i,t-j} + \varphi_i + e_{it}$$

Notes:

$\theta_i = -(1 - \delta_i)$, group-specific speed of adjustment coefficient (expected that $\theta_i < 0$)

λ'_i = vector of long-run relationships

ECT = $[y_{i,t-j} - \lambda'_i \mathbf{X}_{i,t}]$, the error correction term which represents the long-run information in the model

ζ_{ij}, β'_{ij} are the short-run dynamic coefficients to be estimated

The error correction model is crucial for the panel ARDL model to run.

5.2.1 Unit Root Test.

The IPS test is conducted using constant and just one lag. Table 41 shows the summary of the unit root tests' results. Variables are stationary at level, I(0), are *GInve*, *GDPg*, and *LogUnemp*. Other variables are considered as I(1). *LogDGini*, *LogD5010*, *LogD9050*, *LogD9010*, *Gcons*, *TrSub*, *TmTR*, *NeoSt*, *LogNeoSt*, *LogCreEx*, *LogFIRE*, and *Logtradeopen* are stationary at the first difference.

<i>Variables</i>	Level - I(0)	First Difference – I(1)
<i>LogDGini</i>	<i>Non-stationary</i>	<i>Stationary</i>
<i>LogD5010</i>	<i>Non-stationary</i>	<i>Stationary</i>
<i>LogD9050</i>	<i>Non-stationary</i>	<i>Stationary</i>
<i>LogD9010</i>	<i>Non-stationary</i>	<i>Stationary</i>
<i>GCons</i>	<i>Non-stationary</i>	<i>Stationary</i>
<i>TrSub</i>	<i>Non-stationary</i>	<i>Stationary</i>
<i>GInves</i>	<i>Stationary</i>	-----
<i>TmTR</i>	<i>Non-stationary</i>	<i>Stationary</i>
<i>NeoSt</i>	<i>Non-stationary</i>	<i>Stationary</i>
<i>LogNeoSt</i>	<i>Non-stationary</i>	<i>Stationary</i>
<i>LogCreExp</i>	<i>Non-stationary</i>	<i>Stationary</i>
<i>LogFIRE</i>	<i>Non-stationary</i>	<i>Stationary</i>

<i>GDPg</i>	<i>stationary</i>	-----
<i>LogUnemp</i>	<i>stationary</i>	-----
<i>Logtradeopen</i>	<i>Non-stationary</i>	<i>Stationary</i>

Table 37: Results for IPS Unit Root Test for variables

Source: World Bank, The Luxembourg Income Study (LIS), Comparative Welfare States (CWS), The Fraser Institute's Economic Freedom of the World database, the World Development Indicators (WDI) of the World Bank, OECD database Calculation: Author

5.2.2 Optimal Lag Selection.

The best number of lags for each unit/group per variable is found in this paragraph using information criteria and an unconstrained model, with the most common lag for each variable represented as the model's lags.

The most common lag has been chosen among all the countries.

Variables	<i>LogDGini</i>	<i>GCons</i>	<i>TrSub</i>	<i>GInves</i>	<i>TmTR</i>	<i>LogCreExp</i>	<i>LogFIRE</i>	<i>GDPg</i>	<i>LogUnemp</i>	<i>logtradeopen</i>
Lag	1	2	0	2	0	2	0	0	2	2

Variables	<i>LogD5010</i>	<i>GCons</i>	<i>TrSub</i>	<i>GInves</i>	<i>TmTR</i>	<i>LogCreExp</i>	<i>LogFIRE</i>	<i>GDPg</i>	<i>LogUnemp</i>	<i>logtradeopen</i>
Lag	1	2	0	0	0	0	0	0	0	2
Variables	<i>LogD9050</i>	<i>GCons</i>	<i>TrSub</i>	<i>GInves</i>	<i>TmTR</i>	<i>LogCreExp</i>	<i>LogFIRE</i>	<i>GDPg</i>	<i>LogUnemp</i>	<i>logtradeopen</i>
Lag	1	0	0	0	0	0	2	0	2	0
Variables	<i>LogD9010</i>	<i>GCons</i>	<i>TrSub</i>	<i>GInves</i>	<i>TmTR</i>	<i>LogCreExp</i>	<i>LogFIRE</i>	<i>GDPg</i>	<i>LogUnemp</i>	<i>logtradeopen</i>
Lag	1	0	0	2	1	0	0	0	0	0

Table 38: Most common lag

Source: World Bank, The Luxembourg Income Study (LIS), Comparative Welfare States (CWS), The Fraser Institute's Economic Freedom of the World database, the World Development Indicators (WDI) of the World Bank, OECD database Calculation: Author

5.2.3 Cointegration Test.

Pedroni's cointegration tests:

No. of Panel units: 14 Regressors: 7
 No. of obs.: 532 Avg obs. per unit: 38
 Data has been time-demeaned.
 A time trend has been included.

Test Stats.	Panel	Group
v	-1.361	.
rho	2.071	3.12
t	-3.171	-3.56
adf	-2.391	-3.042

All test statistics are distributed $N(0,1)$, under a null of no cointegration, and diverge to negative infinity (save for panel v).

Table 39: Cointegration test for *LogDGini*, *Gcons*, *TrSub*, *GInves*, *TmTR*, *LogCreExp*, *LogFIRE*, and *Logtradeopen*

Source: World Bank, The Luxembourg Income Study (LIS), Comparative Welfare States (CWS), The Fraser Institute's Economic Freedom of the World database, the World Development Indicators (WDI) of the World Bank, OECD database Calculation: Author

Test Stats.	Panel	Group
v	-1.309	.
rho	2.096	3.391
t	-2.325	-1.784
adf	-.3377	-.3315

All test statistics are distributed $N(0,1)$, under a null of no cointegration, and diverge to negative infinity (save for panel v).

Table 40: Cointegration test for *LogD5010*, *Gcons*, *TrSub*, *GInves*, *TmTR*, *LogCreExp*,

LogFIRE* and *logtradeopen

Source: World Bank, The Luxembourg Income Study (LIS), Comparative Welfare States (CWS), The Fraser Institute's Economic Freedom of the World database, the World Development Indicators (WDI) of the World Bank, OECD database Calculation: Author

Pedroni's cointegration tests:

No. of Panel units: 14 Regressors: 7
 No. of obs.: 532 Avg obs. per unit: 38
 Data has been time-demeaned.
 A time trend has been included.

Test Stats.	Panel	Group
v	-1.366	.
rho	2.304	3.278
t	-2.898	-3.77
adf	.1991	-.5427

All test statistics are distributed $N(0,1)$, under a null of no cointegration, and diverge to negative infinity (save for panel v).

Table 41: Cointegration test for *LogD9050*, *Gcons*, *TrSub*, *GInves*, *TmTR*, *LogCreExp*, *LogFIRE* and *logtradeopen*

Source: World Bank, The Luxembourg Income Study (LIS), Comparative Welfare States (CWS), The Fraser Institute's Economic Freedom of the World database, the World Development Indicators (WDI) of the World Bank, OECD database Calculation: Author

Test Stats.	Panel	Group
v	-1.239	.
rho	2.456	3.423
t	-1.738	-1.64
adf	-.3627	-.7946

All test statistics are distributed $N(0,1)$, under a null of no cointegration, and diverge to negative infinity (save for panel v).

Table 42: Cointegration test for *LogD9010*, *Gcons*, *TrSub*, *GInves*, *TmTR*, *LogCreExp*, *LogFIRE* and *logtradeopen*

Source: World Bank, The Luxembourg Income Study (LIS), Comparative Welfare States (CWS), The Fraser Institute's Economic Freedom of the World database, the World Development Indicators (WDI) of the World Bank, OECD database Calculation: Author

5.2.4 Estimation of the Panel Autoregressive Distributed Lag (ARDL) model.

Several models are estimated in this subsection. Tables 47–55 show the results for ARDL, which estimate the long-run impacts of the covariates on the four dependent variables. The PMG method is used to estimate each set of models in order to obtain the long-run effects of each independent variable. Table 47 displays five models that are estimated for 14 countries between 1980 and 2011. Models 1 through 4 reflect the long-run effects of each important independent variable as well as the controls. The long-run effects of all key independent variables, as well as

controls, are then indicated in model 5. This enables us to see how each key independent variable affects *DGini* inequality on its own and in combination with the other key independent factors. The relatively large error correction rates for *DGini* inequality in models 1–5, ranging from -0.209 to -0.264, show that the independent variables' causal impact is substantial and quickly diminishes over time.

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Error-correction rate	-0.245 *** (0.040)	-0.225*** (.039)	-0.209*** (0.028)	-0.261 *** (0.059)	-0.264 *** (0.061)
Neoliberalism <i>LogNeoSt</i>	0.080*** (0.015)			0.054** (0.18)	0.121*** (0.018)
Financialization <i>LogCreExp</i> <i>LogFIRE</i>		0.044*** (0 .009)	0.049 (0.032)	0.022** (0.008) 0.165*** (0.028)	-0.028** (0.009) 0.145*** (0.023)
<i>Bcris</i>				-0.0009 (0.003)	-0.011* (0.004)
Globalization					

<i>logtradeopen</i>	-0.154*** (0.014)	0.150*** (0.022)	0.154*** (0.023)	0.117*** (0.021)	0.067** (0.004)
Business cycle					
<i>GDPg</i>	-0.0001 (0.0006)	0.001 (0.0007)	0.0008 (0.001)		-0.0009 (0.0008)
<i>LogUnemp</i>	0.009 (0.013)	0.025+ (0.015)	-0.006 (0.013)	0.026** (0.009)	0.0008 (0.008)

Table 43: DGini, 14 countries Between 1980 and 2011

*==P<.05, **==P<.01, ***==P<.001, +==P<.10.

Source: World Bank, The Luxembourg Income Study (LIS), Comparative Welfare States (CWS), The Fraser Institute's Economic Freedom of the World database, the World Development Indicators (WDI) of the World Bank, OECD database. Calculation: Author

The error correction rate is the rate at which an economic shock causes the time series trend to correct or readjust in the next year after being affected by something like an economic crisis. For example, if you have an error correction rate of -0.264 (from model 5 and a reasonably high value), then 26.4 percent of the initial shock will adapt after the first year, and another 26.4 percent of the remaining will adjust in the second year, and so on.

Table 47 displays the results of ARDL regression models for 14 countries for *DGini* and other independent variables between 1980 and 2011. In models 1 and 5, the neoliberal state is related

to greater *DGini* income inequality over the long run, which is the key subject of the investigation. In models 2, 4, and 5, the two dimensions of financialization have consistently favorable long-run effects on *DGini* inequality. In model 5, a 10% increase in *FIRE* employment is associated with a 1.45% rise in *DGini* inequality, supporting *Hypothesis*. In model 2, a 10% rise in credit as a share of GDP leads to a 0.44 percent increase in *DGini* inequality, in the long run, supporting the *Hypothesis*.

However, the coefficient of *LogCreExp* in model 5 is a negative number which does not support the *Hypothesis*. Imports (*Logtradeopen*) proxy for globalization, as expected, raises *DGini* inequality in models 2 through 5, consistent with earlier research (Alderson and Nielsen, 2002), although these effects are negative in model 1. This shows that the influx of cheaper goods from elsewhere, combined with a lack of manufactured goods within one's own country, tends to erode workers' bargaining power and raise income inequality. As can be seen, coefficients for economic growth are nonsignificant in estimated models. The banking crisis (*Bcris*), except in model 5, has no effect on *DGini* inequality, although this effect is not particularly robust to different variables in the models. Table 48 displays six models estimated for *DGini* and independent and control variables for four countries: the United States, Canada, the United Kingdom, and Australia, as neoliberal governments between 1980 and 2011. The results for the neoliberal state and *FIRE* employment are robust for neoliberal countries' models. Except for models 10 and 11, the positive effect of credit expansion is robust. Similarly, trade openness is

robust in all models. Overall, these findings corroborate the hypothesis that each key variable in the analysis increases *DGini* inequality, except the banking crisis variable.

Table 48 presents the long-run effects predicting *DGini* inequality in four neoliberal countries, including the United States, the United Kingdom, Canada, and Australia. The error correction rates range from -0.259 to -0.431. In models 6 through 11, the neoliberal state has a significant, positive effect on *DGini* inequality, supporting Hypothesis. In model 6, a one percent increase in the neoliberal state variable is linked to a 0.309 percent long-run increase in *DGini* inequality. All two financialization indicators are connected with higher *DGini* inequality; however, credit expansion has a weaker effect. Credit expansion has a non-significant coefficient in models 10 and 11, but it becomes positive and significant in model 7 when neoliberalism and other financialization indicators are excluded. A one percent increase in FIRE employment is associated with a 0.16 percent long-run increase in *DGini* inequality in model 5, which is consistent with the Hypothesis. The coefficient of the Banking crisis is significant. In terms of the globalization variable, it is linked to higher *DGini* inequality in all models. Economic growth decreases inequality in models 10 and 11. Models 6, 7, 9, 10, and 11 (Table 48) show that unemployment significantly increases inequality.

Variables	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11

Error-correction rate	-0.353+ (0.197)	-0.259***	-0.313**	-0.431** (0.168)	-0.406** (0.147)	-0.39** (0.133)
Neoliberalism <i>LogNeoSt</i>	0.309*** (0.000)			0.059** (0.007)	0.082*** (0.025)	0.093*** (0.028)
Financialization <i>LogCreExp</i>		0.035** (0.012)		0.020* (0.041)	0.015 (0.032)	0.012 (0.012)
<i>LogFIRE</i>			0.253*** (0.032)	0.176*** (0.000)	0.167*** (0.032)	0.16*** (0.033)
<i>Bcris</i>						-0.00007 (0.004)
Globalization <i>logtradeopen</i>	0.120 ** (0.043)	0.043*** (0.043)	0.126*** (0.023)	0.122*** (0.000)	0.115*** (0.025)	0.121*** (0.0288)
Business cycle <i>GDPg</i>	-----	-----	----		-0.002* (0.001)	-0.0035* (0.001)
<i>LogUnemp</i>	0.070*** (0.020)	0.045* (.021)	0.015 (0.011)	0.031*** (0.001)	0.028** (0.010)	0.029* (0.012)

Table 44: DGini, Neoliberal countries Between 1980 and 2011

*==P<.05, **==P<.01, ***==P<.001, +==P<.10.

Source: World Bank, The Luxembourg Income Study (LIS), Comparative Welfare States (CWS), The Fraser Institute's Economic Freedom of the World database, the World Development Indicators (WDI) of the World Bank, OECD database Calculation: Author

The long-run effects predicting *DGini* inequality for four countries: Sweden, Finland, Denmark, and Nederland, as Nordic countries, which are depicted in Table 49. It is worth noting that the error correction rates for Nordic are lower in magnitude than those for neoliberal, ranging from -0.101 to -0.318. The lower error correction rates imply that the long-run consequences of the neoliberal dissipate more slowly over time. The neoliberal state reduces *DGini* inequality in model 12 and has a slightly significant positive effect on rising *DGini* inequality in models 16 and 17, indicating that the Hypothesis is supported. A 1% change in the neoliberal state measure causes a 0.142 percent long-run increase in *DGini* inequality in model 17. When FIRE employment is examined in models 14, 15, 16, and 17, there are positive effects on *DGini* inequality, supporting the Hypothesis. In model 17, a 1% increase in FIRE employment results in a 0.502% increase in *DGini* inequality over the long run. Credit expansion, another measure of financialization, is associated with lower *DGini* inequality in model 17, contrary to Hypothesis. In model 17, increasing credit by one percent reduces *DGini* inequality by 0.067 percent in the long run. As can be seen, coefficients for banking crises are nonsignificant in estimated models. Turning to the results for the control variables, in models 13, 16, and 17, the coefficient of

unemployment is insignificant, while in models 12, 14, and 15, it is negatively associated with *DGini* inequality in the long run. Economic growth is associated with more income inequality over the long run. However, this is only significant in models 12, 13, 14, and 15. The economic growth coefficient in models 12, 13, and 14 shows a positive association between economic growth and income inequality, and model 15 shows a negative association between them, which suggests that this effect is not very robust. In Nordic countries, similar to models 1 through 11, globalization raises *DGini* inequality in models 12, 13, 14, 15, and 17.

Variables	Model 12	Model 13	Model 14	Model 15	Model 16	Model 17
Error-correction rate	-0.101*** (0.026)	-0.142*** (0.033)	-0.212*** (0.063)	-0.285+ (0.156)	-0.318* (0.095)**	0.267 (0.193)
Neoliberalism <i>LogNeoSt</i>	-0.204 + (0.111)			0.125* (0.049)	0.095** (0.036)	0.142** (0.054)
Financialization <i>LogCreExp</i> <i>LogFIRE</i>		-0.045 (0.033)	0.250*** (0.062)	-0.026 (0.021) 0.459*** (0.052)	-0.005 (0.015) 0.345*** (0.046)	-0.067* (0.032) 0.520*** (0.050)
<i>Bcris</i>		0.008			-0.010	0.016

		(0.018)			(0.007)	(0.10)
Globalization						
<i>logtradeopen</i>	0.420 ** (0.140)	0.314+ (0.126)	0.232*** (0.048)	0.083+ (0.043)	-0.13 (0.013)	0.076+ (0.042)
Business cycle						
<i>GDPg</i>	0.014+ (0.014)	0.007+ (0.004)	0.005* (0.005)	-0.028* (0.001)		0.002 (0.001)
<i>LogUnemp</i>	-0.111 *** (0.073)	-0.039 (0.042)	-0.061 ** (0.020)	-0.028+ (0.016)	-0.013 (0.013)	-0.043 (0.026)

Table 45: DGini, Nordic countries Between 1980 and 2011

*==P<.05, **==P<.01, ***==P<.001, +==P<.10.

Source: World Bank, The Luxembourg Income Study (LIS), Comparative Welfare States (CWS), The Fraser Institute's Economic Freedom of the World database, the World Development Indicators (WDI) of the World Bank, OECD database Calculation: Author

Table 50 shows the fourth series of models that estimate *DGini* in social-corporatist countries, which are Germany and France. Here, the error correction rates are appreciably bigger than those for the previous three sets of models, suggesting that the long-run effects for the social-corporatist countries model dissipate more quickly than those for the Nordic countries model, neoliberal countries model, and the model for 14 countries. The error correction rates range from -0.285 to -0.576. With regard to neoliberalism, in models 18 through 23, the neoliberal state has a

considerable, positive effect on *DGini* inequality, validating the Hypothesis. In model 23, a one percent increase in the neoliberal state variable is linked to a 0.089 percent long-run increase in *DGini* inequality. Except in model 19, two financialization variables are not associated with greater *DGini* inequality in social corporatist countries. Just in model 19, there is a significant and positive coefficient for credit expansion; however, this coefficient becomes positive and significant in model 19 when neoliberalism and the other two financialization measures are not included. In terms of globalization variables, imports are projected to be connected with higher *DGini* inequality. This effect is still significant in models 18 through 23. In terms of the control variables in models 18 through 23, the coefficients of unemployment and GDP growth are insignificant.

Variables	Model 18	Model 19	Model 20	Model 21	Model 22	Model 23
Error-correction rate	-0.452** (0.190)	-0.285*** (0.075)	-0.297** (0.104)	-0.520** (0.198)	-0.571*** (0.123)	-0.576*** (0.126)
Neoliberalism						
<i>LogNeoSt</i>	0.087*** (0.020)			0.087*** (0.017)	0.088*** (0.015)	0.089*** (0.016)
Financialization						

<i>LogCreExp</i>		0.042*** (0.075)		-0.033 (0.037)	-0.0385 (0.033)	-0.036 (0.034)
<i>LogFIRE</i>			0.051 (0.084)	0.011 (0.065)	0.0004 (0.052)	-0.001 (0.974)
<i>Bcris</i>					-0.003 (0.005)	-0.0056 (0.007)
Globalization <i>logtradeopen</i>	0.117*** (0.019)	0.134*** (0.038)	0.127** (0.041)	0.117*** (0.021)	0.125*** (0.021)	0.125*** (0.022)
Business cycle <i>GDPg</i>						-0.0003 (0.0009)
<i>LogUnemp</i>	0.002 (0.017)	-0.022 (0.039)	-0.015 (0.037)	0.015 (0.021)	0.018 (0.019)	0.016 (0.020)

Table 46: DGini, Social-Corporatist countries Between 1980 and 2011

*==P<.05, **==P<.01, ***==P<.001, +==P<.10.

Source: World Bank, The Luxembourg Income Study (LIS), Comparative Welfare States (CWS), The Fraser Institute's Economic Freedom of the World database, the World Development Indicators (WDI) of the World Bank, OECD database Calculation: Author

Variables	Model 24	Model 25	Model 26	Model 27
	<i>Nordic</i>	<i>NeoLib</i>	<i>SCo</i>	14 Countries

Error-correction rate	-0.304** (0.114)	-0.29** (0.105)	-0.537*** (0.116)	-0.255*** (0.489)
Neoliberalism				
<i>LogNeoSt</i>	0.114*** (0.031)	0.144** (0.041)	0.087** (0.179)	0.086*** (0.0153)
Financialization				
<i>LogCreExp</i>	-0.007 (0.012)	-0.001 (0.020)	-0.045 (0.036)	-0.015 (0.011)
<i>LogFIRE</i>	0.306*** (0.0410)	0.103 (0.482)	-0.004 (0.54)	-0.0085 (0.021)
<i>Bcris</i>	-0.013 (0.006)	0.006 (0.005)	-0.005 (0.006)	-0.0008 (0.004)
Globalization				
<i>logtradeopen</i>	0.076+ (0.044)	0.082* (0.033)	0.115*** (0.022)	0.114*** (0.013)
Business cycle				
<i>GDPg</i>	0.001 (0.001)	-0.003+ (0.002)	0.001 (0.0009)	-0.0001 (0.0007)
<i>LogUnemp</i>	-0.007 (0.012)	0.018 (0.015)	0.019 (0.018)	0.005 (0.009)

Table 47: DGini, Nordic, Neoliberal and Social-Corporatist and 14 countries Between 1980 and 2017

*==P<.05, **==P<.01, ***==P<.001, +==P<.10.

Source: World Bank, The Luxembourg Income Study (LIS), Comparative Welfare States (CWS), The Fraser Institute's Economic Freedom of the World database, the World Development Indicators (WDI) of the World Bank, OECD database Calculation: Author

There are various stages of analysis in this subject. Four models have to be illustrated for each dependent variable to show how model specification affects the outcomes. Table 52 shows how the ARDL models predict the relationship between neoliberalism, financialization, and upper-tail inequality. In four Nordic nations, Model 28 estimates the relationship between *LogD9050* and independent variables. Model 29 estimates the coefficients of the independent variables in four neoliberal nations, model 30 estimates in two social-corporatist countries, and model 31 estimates in all 14 countries between 1980 and 2017. Upper-tail inequality is defined as the income ratio between the 90th and 50th percentiles, and it shows the inequality between the very wealthy and the median worker or middle class. In models 28, 29, and 31, the neoliberal state is related to a rise in upper-tail inequality, which confirms the Hypothesis.

A one percent increase in the neoliberal state index is connected with a 0.071 percent increase in the 90/50 income ratio the following year, according to model 31. Overall, the results provide moderately strong evidence that neoliberalism increases upper-tail inequality in OECD countries by decreasing the tax burden for the very affluent and undermining social spending and programs that supplement the incomes of the middle class. FIRE employment is not significant among the

financialization factors in models 29, 30, and 31; however, it has a significant positive influence in model 28. This is most likely due to unobserved differences between nations that obscure the effects of FIRE employment on upper-tail inequality. These observations lend some credence to Hypothesis. A one percent rise in FIRE employment is associated with a 0.24 percent increase in the 90-50 income ratio the following year, according to model 28. Credit expansion is favorably related to upper-tail inequality in model 31, but it is insignificant in models 30 and 29, and it is a negative association with *LogD9050* in model 28 over the long run. In model 31, unemployment is positively associated with upper-tail inequality. This effect is robust in model 29 for neoliberal countries. This demonstrates that unemployment disproportionately harms middle-class workers' bargaining power, lowering their wages while raising the incomes of the wealthy in neoliberal countries. Economic growth is not significant in models 28 through 31. The effect of globalization is not significant in models 28, 29, and 30 between 1980 and 2017. However, model 31 for 14 countries suggests that globalization increases upper-tail inequality.

Variables	Model 28 <i>Nordic</i>	Model 29 <i>NeoLib</i>	Model 30 <i>SCo</i>	Model 31 14 Countries
Error-correction rate	-0.213* (0.099)	-0.321* (0.154)	-0.282 (0.268)	-0.233*** (0.033)
Neoliberalism				

<i>LogNeoSt</i>	0.170*** (0.047)	0.204*** (0.037)	0.094 (0.067)	0.071*** (0.020)
Financialization				
<i>LogCreExp</i>	-0.037* (0.016)	-0.003 (0.016)	-0.074 (0.089)	0.020* (0.008)
<i>LogFIRE</i>	0.240*** (0.067)	0.47 (0.042)	0.267 (0.162)	-0.017 (0.023)
<i>Bcris</i>	-0.009 (0.007)	0.010+ (0.005)	-0.011 (0.012)	0.002 (0.005)
Globalization				
<i>logtradeopen</i>	-0.004 (0.066)	0.018 (0.0405)	0.037 (0.044)	0.063*** (0.019)
Business cycle				
<i>GDPg</i>	-0.001 (0.001)	0.0015 (0.0009)	-0.0007 (0.002)	0.0003 (0.0008)
<i>LogUnemp</i>	0.022 (0.020)	0.082*** (0.0166)	0.029 (0.035)	0.047*** (0.014)

Table 48: LogD9050, Nordic, Neoliberal and Social-Corporatist and 14 countries Between 1980 and 2017

*==P<.05, **==P<.01, ***==P<.001, +==P<.10.

Source: World Bank, The Luxembourg Income Study (LIS), Comparative Welfare States (CWS), The Fraser Institute's Economic Freedom of the World database, the World Development Indicators (WDI) of the World Bank, OECD database Calculation: Author

Table 53 shows the findings of the ARDL models that projected the links between neoliberalism, financialization, and top-bottom inequality between 1980 and 2017 for Nordic, neoliberal, social-corporatist, and 14 nations. To refresh the reader's memory, top-bottom inequality refers to the disparity between the 90th and 10th income percentiles or the gap between the wealthy and the poor. In models 32, 33, 34, and 35, the neoliberal state is positively associated with top-bottom inequality. A one percent increase in the neoliberal state index is associated with a 0.253 percent increase in the ratio between the 90th and 10th income percentiles the following year, according to model 35. Because neoliberalism is connected with lower tax burdens for the wealthy and lower spending on public goods and social services for the poor, the gap between the wealthy and the poor grows. These findings lend credence to Hypothesis. In models 33, 34, and 35, credit expansion is not connected with top-bottom inequality, while the coefficient for model 32 suggests credit expansion has a negative influence on top-bottom inequality in Nordic countries. It suggests that in Nordic nations, a 1% increase in the credit expansion index reduces the ratio between the 90th and 10th income percentiles by 0.085 percent the following year. In models 33 and 35, unemployment is associated with greater top-bottom inequality; however, in model 34, this effect is insignificant. Economic growth is connected with a decrease in top-bottom inequality in models 33 and 35; however, this effect is insignificant in models 32 and 34. All the models show that the banking crisis index does not have significant coefficients. The banking crisis index has no significant coefficients in any of the models in table 53.

Variables	Model 32 <i>Nordic</i>	Model 33 <i>NeoLib</i>	Model 34 <i>SCo</i>	Model 35 14 Countries
Error-correction rate	-0.215+ (0.130)	-0.338* (0.140)	-0.429 (0.357)	-0.213*** (0.065)
Neoliberalism <i>LogNeoSt</i>	0.380*** (0.099)	0.376*** (0.078)	0.157* (0.075)	0.253*** (0.034)
Financialization <i>LogCreExp</i>	-0.085* (0.040)	-0.0302 (0.034)	0.075 (0.116)	0.012 (0.017)
<i>LogFIRE</i>	0.709*** (0.118)	-0.188*** (0.039)	0.137 (0.205)	-0.15*** (0.032)
<i>Bcris</i>	0.0044 (0.001)	0.001 (0.020)	-0.012 (0.015)	-0.009 (0.001)
Globalization <i>logtradeopen</i>	0.126 (0.096)	0.176*** (0.308)	0.191** (0.058)	0.213*** (0.027)
Business cycle <i>GDPg</i>	0.001 (0.003)	-0.006** (0.002)	-0.002 (0.003)	-0.004** (0.001)
<i>LogUnemp</i>	-0.044** (0.040)	0.110** (0.038)	-0.071 (0.044)	0.048* (0.021)

Table 49: LogD9010, Nordic, Neoliberal and Social-Corporatist and 14 countries Between 1980 and 2017

*==P<.05, **==P<.01, ***==P<.001, +==P<.10.

Source: World Bank, The Luxembourg Income Study (LIS), Comparative Welfare States (CWS), The Fraser Institute's Economic Freedom of the World database, the World Development Indicators (WDI) of the World Bank, OECD database Calculation: Author

Table 54 displays the results of the ARDL models that predicted the relationships between neoliberalism, financialization, and lower-tail inequality for Nordic, neoliberal, social-corporatist, and 14 nations between 1980 and 2017. Lower-tail inequality is defined as the income ratio between the 50th and 10th income percentiles, which shows the degree of disparity between the median worker, or middle class, and the poor. In models 36, 37, and 39, the neoliberal state is positively associated with lower-tail inequality, whereas it has no significant coefficient in model 38. A 1% increase in the neoliberal state index is associated with a 0.115 percent increase in the ratio between the 50th and 10th income percentiles the following year, according to model 39. FIRE employment is associated with greater lower tail inequality in model 36. However, the coefficients for models 37 and 38 are insignificant, and model 39 shows that higher FIRE employment is linked with lower tail inequality reduction.

Credit expansion is associated with greater lower-tail inequality in model 37; however, coefficients of credit expansion in models 36 and 39 show contradictory results. The effect is nonsignificant in model 38. Banking crises are not associated with lower-tail inequality in

models 36 and 38. Model 37 shows the banking crisis is associated with greater lower-tail inequality in neoliberal countries. However, model 39 shows a contradictory result. Exports as a proxy of globalization is positively associated with lower-tail inequality in models 36 and 39. This effect is no longer significant for model 38, and model 37 shows exports is negatively linked with lower-tail inequality in neoliberal countries. Economic growth is not significant in models 36, 37, 38, and 39. The unemployment rate is negatively associated with lower-tail inequality in models 36 and 39.

Variables	Model 36 <i>Nordic</i>	Model 37 <i>NeoLib</i>	Model 38 <i>SCo</i>	Model 39 14 Countries
Error-correction rate	-0.376* (0.195)	-0.297 (0.189)	-0.309 (0.207)	-0.217*** (0.059)
Neoliberalism <i>LogNeoSt</i>	0.156*** (0.029)	0.214*** (0.042)	0.0117 (0.026)	0.115*** (0.023)
Financialization <i>LogCreExp</i>	-0.041*** (0.010)	0.066* (0.032)	-0.054 (0.056)	-0.033*** (0.009)
<i>LogFIRE</i>	0.249*** (0.033)	-0.085 (0.054)	0.265 (0.056)	-0.212*** (0.289)
<i>Bcris</i>	-0.005	0.012* (0.005)	-0.004	-0.011* (0.005)

	(0.006)	(0.005)	(0.007)	0.005
Globalization <i>logtradeopen</i>	0.103** (0.035)	-0.171*** (0.042)	-0.047 (0.053)	0.0805*** (0.023)
Business cycle <i>GDPg</i>	0.004 (0.001)	-0.008*** (0.002)	-0.005** (0.002)	-0.0009 (0.001)
<i>LogUnemp</i>	-0.045*** (0.011)	0.018 (0.016)	0.028 (0.034)	-0.030*** (0.008)

**Table 50: LogD5010 for Nordic, Neoliberal, and Social-Corporatist and 14 countries
Between 1980 and 2017**

*==P<.05, **==P<.01, ***==P<.001, +==P<.10.

Source: World Bank, The Luxembourg Income Study (LIS), Comparative Welfare States (CWS), The Fraser Institute's Economic Freedom of the World database, the World Development Indicators (WDI) of the World Bank, OECD database Calculation: Author

Finally, Table 55 shows the three ARDL models are estimated for three dependent variables, LogD9050, LogD9010, and LogD5010, as well as our independent variables, between 1980 and 2011. The neoliberal state is positively associated with all inequality indices in models 40, 41, and 42. A 1% increase in the neoliberal state index is associated with a 0.111 percent increase in the 90th and 50th income percent ratio, a 0.183 percent increase in top-bottom inequality in

model 41, and a 0.136 percent increase in the lower-tail inequality index in model 42.

Coefficients in all three models are insignificant. FIRE employment has a positive association with *LogD9050* in model 40. Models 41 and 42, on the other hand, show a negative association.

The banking crisis is positively associated with lower-tail inequality in model 42 and upper-tail inequality in model 40; however, it is no longer significant in model 41 for top-bottom

inequality. Unemployment is associated with increased top-bottom inequality in model 41 and upper-tail inequality in model 40; however, this effect becomes nonsignificant in model 42.

Economic growth is associated with an increase in lower-tail inequality in model 42 but is not

significant in models 40 and 41. Finally, Globalization is associated with greater top-bottom inequality in models 41, but it is associated with a reduction in upper-tail inequality and lower-tail inequality in models 40 and 42.

Variables	Model 40 <i>LogD9050</i>	Model 41 <i>LogD9010</i>	Model 42 <i>LogD5010</i>
Error-correction rate	-0.238*** (0.053)	-0.227*** (0.046)	-0.198*** (0.058)
Neoliberalism <i>LogNeoSt</i>	0.111*** (0.023)	0.183*** (0.038)	0.136*** (0.028)

Financialization			
<i>LogCreExp</i>	0.0106 (0.009)	0.014 (0.017)	0.023 (0.020)
<i>LogFIRE</i>	0.073** (0.027)	-0.120*** (0.035)	-0.050 (0.036)
<i>Bcris</i>	-0.007+ (0.004)	0.007 (0.008)	0.013* 0.005
Globalization			
<i>logtradeopen</i>	-0.083*** (0.023)	0.178*** (0.033)	-0.188*** (0.041)
Business cycle			
<i>GDPg</i>	0.0002 (0.007)	-0.001 (0.001)	-0.003+ (0.001)
<i>LogUnemp</i>	0.062*** (0.012)	0.139*** (0.024)	-0.004 (0.011)

Table 51: LogD9050, LogD9010, LogD5010 and 14 countries Between 1980 and 2011

*==P<.05, **==P<.01, ***==P<.001, +==P<.10.

Source: World Bank, The Luxembourg Income Study (LIS), Comparative Welfare States (CWS), The Fraser Institute's Economic Freedom of the World database, the World Development Indicators (WDI) of the World Bank, OECD database Calculation: Author

5.3 Discussion.

The long-run effects of neoliberalism and financialization on income inequality in 14 OECD democracies from 1980 to 2017 are investigated in this chapter. These analyses aim to address many shortcomings in earlier research in this area. To begin, this analysis investigates the determinants of four indicators of inequality—disposable household income inequality (*DGini*), 90/50 Percentile Ratio, 90/10 Percentile Ratio, and 50/10 Percentile Ratio—all at the same time, allowing us to develop a more comprehensive understanding of income inequality in 14 OECD democratic nations. Second, some political scientists (Esping-Anderson, 1990) have considered several variants of capitalism—neoliberal countries (the United States, United Kingdom, Canada, and Australia), Nordic countries (Denmark, Finland, Sweden, and Norway), and social-corporatist (France and Germany)—this study analyzes the determinant of income inequality in three groups of countries all in the two periods of 1980–2011, known as the neoliberal era, and 1980–2017. Third, financialization is conceptualized as a multi-dimensional concept and examines the effects of two distinctive dimensions—*FIRE* employment and credit expansion. Finally, a broad range of 14 OECD capitalist democracies from 1980 to 2017 eclipses earlier analyses that focused on fewer nations or shorter time periods.

Table 56 provides an overview of the findings from tables 47 through 55. As can be seen, 90 percent of models have a significant error correction term that shows the causal impact of the independent variables tends to be strong, and the variables in the panel are cointegrated,

implying that there is long-run cointegration. *LogNeoSt* participated in 81 percent of the 42 models that are estimated. Among them, 94% of the participating coefficients of *LogNeoSt* are significant and have a positive effect on income inequality. For all OECD nations in the models, as well as Nordic and Neoliberal countries, the influence of the neoliberal state is positive and significant for the Gini index (disposable income inequality), upper-tail inequality, lower-tail inequality, and top-bottom inequality. There are only two exceptions for social-corporatist countries in models 30 and 38. In other models that were estimated for social-corporatist countries, the coefficients of neoliberalism are positive and significant. Therefore, neoliberalism increases income inequality. These findings provide strong support for the overall theory that neoliberalism benefits the wealthy disproportionately more than the middle and lower classes and that the middle-class benefits at the expense of the poor. Not only does neoliberalism increase the income of the wealthy after taxes by lowering their tax burdens, but it also reduces the income of the middle class by eliminating government spending and investment, as well as cutting social programs (Kotz and McDonough, 2010).

	Number of models		Significant		Insignificant	
	Qty	% Of all models	Qty	% Of participated models	Qty	% Of participated models
Error-correction rate	42	100	38	90	4	10
Variables	Number of participations in models	Significant and positive effect	Insignificant	Significant and negative effect		

	Qty	% Of all models	Qty	% Of participated models	Qty	% Of participated models	Qty	% Of participated models
Neoliberalism <i>LogNeoSt</i>	34	81%	32	94%	1	3%	1	3%
Financialization <i>LogCreExp</i>	34	81%	7	20%	21	62%	6	18%
<i>LogFIRE</i>	34	81%	15	44%	14	41%	5	15%
<i>Bcris</i>	27	64%	3	11%	21	78%	3	11%
Globalization <i>logtradeopen</i>	42	100%	31	74%	7	17%	4	9%
Business cycle <i>GDPg</i>	31	73%	3	10%	19	61%	9	29%
<i>LogUnemp</i>	42	100%	13	31%	23	55%	6	14%

Table 52: Overview of the findings from tables 47 through 55

Calculation: Author

FIRE employment took part in 81 percent of the 42 models that are estimated. *LogFIRE* participant coefficients are significant and positive in 44 percent of cases. FIRE employment is significant and positive in models 4 and 5 for *DGini*. These models estimate the impact of increased employment in finance, insurance, and real estate on income inequality in 14 nations between 1980 and 2011. Furthermore, between 1980 and 2011, this financialization index is significant and positive in models 8, 9, 10, and 11 for neoliberal countries. This finding is confirmed by models 14, 15, 16, and 17 for Nordic nations between 1980 and 2011. In Nordic nations, the coefficient of this variable is positive and significant for upper-tail inequality, lower-tail inequality, and top-bottom inequality. This implies that when employment in finance,

insurance, and real estate grows, the very wealthy leave both the middle class and the poor behind in Nordic countries. The result suggests that increasing FIRE employment in neoliberal countries exacerbates income inequality. Workers in the finance industry are not only paid considerably more than those in nonfinancial industries (Wright and Rogers, 2015), but the same is true for financial managers and accountants in nonfinancial firms (Tomaskovic-Devey and Lin, 2011).

The findings in this chapter provide less robust support that credit expansion has influenced *DGini*, upper-tail, lower-tail, and top-bottom inequality. *LogCreExp* was involved in 81 percent of the 42 estimated models. Among them, 20% of the credit expansion participation coefficients are significant and have a positive effect on income disparity. Credit expansion is significant and positive in models 2 and 4 for *DGini*. These models estimate the effect of credit expansion on income inequality in 14 countries between 1980 and 2011. Furthermore, between 1980 and 2011, this financialization index is significant and positive in models 7 and 9 for neoliberal countries. This finding is confirmed by model 19 for social-corporatist nations between 1980 and 2011. Model 13, which estimates the effect of credit expansion on *D9050* in 14 countries between 1980 and 2017, shows that the coefficient is positive and significant.

Moreover, the coefficient of this variable is positive and significant for lower-tail inequality in model 39. While private sector credit expansion increases inequality and the top 1% share by allowing the wealthy to employ leverage to undertake speculative moves (Guttman 2008), those

gains may not be completely extended to the very wealthy, represented by the 90th percentile.

Credit expansion had no significant influence on top-bottom inequality.

Table 57 shows a summary of variables with significant and positive coefficients in estimated models related to countries and time periods. For example, three neoliberal state indexes, two credit expansion indexes, two *FIRE* employment indexes, and four trade openness indexes are significant and positive and have a positive impact on *DGini* across all 14 countries in the dataset between 1980 and 2011. As a result, neoliberalism, financialization, and globalization contribute to increased disposable income inequality. Neoliberalism and globalization increase income inequality, according to models assessed across 14 countries between 1980 and 2017. In both periods, 1980-2011 and 1980-2017, neoliberalism increases income inequality (*DGini*), upper-tail, lower-tail, and top-bottom inequality in all countries, including Nordic, neoliberal, and social-corporatist countries. FIRE employment and trade openness raise income inequality (*DGini*), upper-tail, lower-tail, and top-bottom inequality in most models measured in Nordic countries. In addition to the neoliberalism index, in social-corporatist countries, trade openness exacerbates income inequality (*DGini*), upper-tail, lower-tail, and top-bottom inequality.

	<i>DGini</i>	<i>D9050</i>	<i>D9010</i>	<i>D5010</i>
14 countries 1980-2011	(3) NeoSt, (2) CreExp, (2) FIRE (4) Tradopen	(1) NeoSt, (1) FIRE	(1) NeoSt, (1) Tradopen	(1) NeoSt
Neoliberal 1980-2011	(4) NeoSt, (4) CreExp, (4) FIRE			

	(6) Tradopen			
Nordic 1980-2011	(3) NeoSt, (4) FIRE, (5) Tradopen			
Social corporatist 1980-2011	(4) NeoSt, (1) CreExp, (6) Tradopen			
14 countries 1980-2017	(1) NeoSt, (1) Tradopen	(1) NeoSt, (1) CreExp, (1) Tradopen	(1) NeoSt, (1) Tradopen	(1) NeoSt, (1) Tradopen
Neoliberal 1980-2017	(1) NeoSt, (1) Tradopen	(1) NeoSt	(1) NeoSt, (1) Tradopen	(1) NeoSt, (1) CreExp,
Nordic 1980-2017	(1) NeoSt, (4), (1) FIRE (1) Tradopen	(1) NeoSt, (1) FIRE	(1) NeoSt, (1) FIRE	(1) NeoSt, (1) FIRE (1) Tradopen
Social corporatist 1980-2017	(1) NeoSt, (1) Tradopen		(1) NeoSt, (1) Tradopen	

Table 53: Significant and positive coefficient

The digit between the parentheses indicates the number of significant variables in estimated models connected to countries and periods in each row. Calculation: Author

Table 57 and 58, as previously indicated, confirms the findings in this chapter while providing less robust evidence that credit expansion has influenced *DGini*, upper-tail, lower-tail, and top-bottom inequality.

	<i>DGini</i>	<i>D9050</i>	<i>D9010</i>	<i>D5010</i>
14 countries 1980-2011	(-1) CreExp, (-1) Tradopen	(-1) Tradopen	(-1) FIRE	(-1) Tradopen

Neoliberal 1980-2011				
Nordic 1980-2011	(-1) NeoSt, (-1) CreExp			
Social corporatist 1980-2011				
14 countries 1980-2017			(-1) FIRE	(-1) CreExp, (-1) FIRE
Neoliberal 1980-2017			(-1) FIRE	(-1) Tradopen
Nordic 1980-2017		(-1) CreExp	(-1) CreExp,	(-1) CreExp
Social corporatist 1980-2017				

Table 54: Significant and negative coefficient

The digit between the parentheses indicates the number of significant variables in estimated models connected to countries and periods in each row. Calculation: Author

The findings of this chapter indicate that, after controlling for other variables, banking crises have no significant effect on upper-tail, lower-tail, or top-bottom inequality. As can be seen in table 56, 78 percent of the coefficients of the banking crisis in the estimated models are not significant.

While much of the political and intellectual attention has been focused on raising incomes for the rich and affluent and stagnant wages for the middle class (Leicht and Fitzgerald, 2013), there has

been less focus on what is happening with the poor. The investigations in this chapter reveal that neoliberalism and financialization have benefited the wealthy at the expense of both the middle class and the poor. Nevertheless, the poor have fallen further behind the middle class.

Chapter 6

6 Conclusion.

The results of decades of empirical research on the link between income inequality and financial development have been controversial, with the direction and statistical significance of the influence of financial development on income disparity varying from study to study. This chapter highlights the key ideas in the literature relevant to the empirical research of this thesis and shows the findings of the empirical research conducted in this study. It also discusses the contributions to knowledge, as well as the limits and opportunities for additional research.

Although financial development is advantageous to economic growth in the long run, the normative question of how wealth is distributed remains largely unsolved to this day (Bekaert and Harvey, 2002). More broadly, one can debate whether and how financial sector policy can be utilized to change income distribution in order to achieve "pro-poor" economic development. As explained in chapter 2, the theory is not clear whether financial development will increase or decrease income inequality. The extent to which financial development contributes to the increase in income disparity was investigated in this thesis. It includes a detailed examination of three major areas of finance, including financial development, financial liberalization, and financial structure, as well as their relationships with income disparity. In chapter 4, panel data from 48 countries over a 25-year period was used to create a collection of time series indicators

for the economy, banking and capital markets, regulation, and income inequality. The Panel Autoregressive Distributed Lag (ARDL) model was used to estimate the dynamic influence of these factors on income distribution.

In chapter 5, from 1980 to 2017, this study examines the direct and long-run effects of neoliberalism and financialization on a variety of income inequality metrics in 14 OECD capitalist countries. This study examines the determinants of income inequality in three sets of nations between 1980 and 2011, known as the neoliberal era, and 1980–2017. Three groups of countries in this study are: neoliberal countries (the United States, United Kingdom, Canada, and Australia); middle-class welfare states, be they social democratic (Nordic countries (Denmark, Finland, Sweden, and Norway)); or social corporatist (France and Germany). This study examines how the neoliberal era's financialization and neoliberalism contributed to income inequality.

The study suggests that income inequality and financial development are integrated. The findings of this thesis imply that the development of the financial sector, namely the development of financial intermediaries and the stock market, has a considerable impact on rising income inequality in the long run. As explained in Chapter 2, it is unclear whether financial development will increase or reduce income disparity. This study finds that financial development increases inequality, which is in line with the model of Greenwood and Jovanovic (1990). Some researchers, on the one hand, disagree with this viewpoint. Financial development, they suggest,

might benefit the poor by lowering transaction costs and providing higher information. For Example, Aghion and Bolton (1997, p. 1) argue that “moral hazard combined with limited wealth constraints on the part of the borrowers is the root of both capital market imperfections and the emergence of persistent income inequality.” The idea that financial market inefficiencies, such as information asymmetries and transaction costs, may be more costly to the poor, on the other hand, is the basis for the claim that inequality may increase. Because the poor rely on informal or familial relationships for capital, Greenwood and Jovanovic (1990) claim that advances in the formal financial sector benefit the wealthy disproportionately.

More findings in this study suggest that a market-led financial system is linked to decreased income disparity. In other words, a more bank-based financial system would worsen income inequality. This discovery contradicts Brei and Gambacorta's findings (2018). When finance is extended through market-based financing, income inequality grows, but not when finance is expanded through bank lending. According to Liu, Liu, and Zhang (2017), on the other hand, increasing the relative value of stock markets to banks helps to reduce income inequality. In addition, Stock market capitalization reduces income disparity compared to total bank credit, whereas stock market turnover raises income inequality, according to Hau, Li, and Wang (2018). Seven and Coskun have the third point of view (2016). When it comes to the finance–poverty nexus, they find that neither banks nor stock markets play a substantial role in poverty reduction.

Another variable employed in the model by this thesis was one-period lagged GDP per capita to account for the influence of economic development on distribution and trade. The coefficient of this variable suggests that income disparity appears to be higher in countries with faster economic development. According to Demetriades and Hussein (1996), a bi-directional link between financial development and economic growth is possible. A relationship between financial structure and economic growth has been shown by additional data. For example, Goldsmith gives statistics for both rich and developing countries that demonstrate a well-defined increasing secular drift in the ratio of financial institutions' assets to the gross national product from 1860 to 1963. As he notes, though, it is difficult to establish "with confidence the direction of the causal mechanism, i.e., of deciding whether financial factors were responsible for the acceleration of economic development or whether financial development reflected economic growth whose mainsprings must be sought elsewhere" (p. 48). From the link between financial development and economic growth, it may be inferred that both financial development and, as a result, economic growth exacerbate income disparity. However, it is important to stress that the thesis's findings do not necessarily imply that financial development is harmful to the poor. According to a large body of research, finance makes a positive contribution to economic growth (at least to some extent) that benefits the poor.

The next finding is that trade openness causes income inequality to rise. Because the relationship between globalization and income inequality has been extensively studied in the past, a measure

of globalization is adjusted. The index of imports and exports is used as a measurement of globalization. The findings are in line with popular perceptions of globalization. It is argued that integration into the global economy promotes economic growth, which in turn aids in the resolution of problems such as poverty, inequality, and lack of democracy (Bhagwati 2004). However, not everyone agrees with this viewpoint, and the opposing school of thought contends that globalization produces economic instability and leads to rising inequality in both developed and developing countries (Stiglitz, 2002).

While the literature on the association between banking competition and financial access is inconsistent, research utilizing effective competition metrics shows that competition enhances access. The results of this thesis show that lower competitive banking tends to aid in reducing income inequality. The finding is consistent with the idea that rising banking concentration hurts small and young businesses by diminishing the motivation for banks to create long-term relationships with them because small banks are better at relationship lending based on soft data than giant banks (Berger, Miller, Petersen, Rajan and Stein, 2005).

Financial liberalization, as previously stated, entails a reduction in the role of the government and a rise in the role of financial markets, whereas financial development entails an increase in the amount of financial activity (Abiad et al., 2008). Credit to the private sector as a percentage of GDP is the most commonly used indicator of financial development. As previously stated, the result of this study shows the development of financial intermediaries raises income inequality

since the estimate of bank credit is positive and statistically significant. Findings from the study indicated that financial liberalization appears to have a positive influence on income disparity. This finding is in line with Korinek and Kreamer's (2014) model, which suggests that financial deregulation increases inequality.

Several prior studies that looked at the non-linear link between financial development and income disparity came up with different results. The Greenwood and Jovanovich (1990) hypotheses show an inverted U-shaped relationship between financial development and income inequality. This empirical study has no evidence to prove the inverse "U-shape" hypothesis and demonstrates that financial development has a positive but linear effect on income inequality. The effect of an inverted U or Kuznets effect, indicating an increase at first and then a drop, was rejected in the study. This research indicates that there is a positive linear association between financial development, financial bank-led structure, and income inequality in the long run.

The hypothesis is supported by the finding in Chapter 5 that the neoliberal state increased income inequality across 14 countries between 1980 and 2017. In both periods, 1980-2011 and 1980-2017, neoliberalism increases disposable income inequality (DGini), upper-tail, lower-tail, and top-bottom inequality in all countries, including Nordic, neoliberal, and social-corporatist countries. In other words, evidence suggests that neoliberalism benefits the very wealthy, represented by the 90th income percentile, at the expense of the middle class, represented by the 50th percentile, and the poor, represented by the 10th percentile. The neoliberal state exacerbates

upper-tail inequality, also known as the 90-50 income ratio. Lowering top marginal tax rates and government consumption and investment not only creates more unequal market incomes by limiting the number of middle-wage jobs but also reduces redistribution by lowering tax burdens for the rich and frequently leads to cuts in social programs and services that help boost middle-class and poor incomes after taxes and transfers are accounted. (Kotz and McDonough 2010; Wright and Rogers 2015). While the neoliberal state disadvantages the middle class in favor of the wealthy, it also disadvantages the poor through increasing lower-tail inequality or the 50-10 income ratio. The middle-class benefits from government consumption and investment; however, the poor's incomes are especially vulnerable to the neoliberal state because cuts to social programs such as unemployment insurance, education and skill development, healthcare, and welfare disproportionately affect the poor. The neoliberal state also raises top-bottom inequality, or the 90-10 income ratio, somewhat unsurprisingly, given the previous two studies. Overall, the neoliberal state benefits the wealthy and well-off but not the middle and lower classes.

Moving on to the first indicator of financialization, evidence demonstrates that FIRE employment (finance, insurance, and real estate employment) increases disposable income inequality over time, supporting the hypothesis. Between 1980 and 2011, FIRE employment boosted income inequality in neoliberal countries. This financialization index appears to have exacerbated income inequality in Nordic nations between 1980 and 2011. FIRE employment boosted upper-tail, lower-tail, and top-bottom inequality in Nordic countries. Increased FIRE

employment relates to increased upper-tail inequality because FIRE provides a disproportionate number of high-income positions (Tomaskovic-Devy and Linn, 2011).

Furthermore, the firm's shareholder value idea exerts downward pressure on middle-class wages in order to minimize labor expenses and maximize profits in order to attract additional investment in corporate stocks (Fligstein and Shin 2007). In addition, increased FIRE employment is connected with increased lower-tail inequality. While the middle class loses ground to the very wealthy, the impoverished also fall behind the middle class as the FIRE sector grows. Because of the introduction of labor-saving technologies, which frequently replace the positions of low-skilled people, the poor's salaries are particularly subject to the firm's shareholder value notion (Fligstein and Shin 2007). As FIRE employment grows, so does the economic and political influence of finance. As the shareholder value conception of the firm has become dominant in financialized economies, this creates more unequal market incomes because financial sector employees, as well as those working in financial services in nonfinancial firms, have experienced disproportionate income growth over the last few decades (Fligstein and Shin, 2007; Tomaskovic-Devey and Lin, 2011; Wright and Rogers, 2015).

The second indicator of financialization is credit expansion, which measures the degree of leverage incorporated into wealthy countries' private sectors. Between 1980 and 2011, credit expansion raised disposable income disparity in 14 OECD countries. Furthermore, this financialization index increased disposable income disparity in social-corporatist and neoliberal

countries between 1980 and 2011. Because it was not significant in most of the models, the results provide poor support for the theory that credit expansion raises upper-tail, lower-tail, and top-bottom inequality; nonetheless, it is plausible that credit expansion is more closely linked to the incomes of the top 10%. As a result, while the 90th income percentile may profit from credit growth, it does not benefit disproportionately in comparison to the middle and lower classes.

Overall, the findings of this research suggest that neoliberalism and financialization enhance income disparity in wealthy countries in a variety of ways. They mostly benefit the rich and very wealthy at the expense of the poor and middle class. This dissertation contributes to discussions on rising income disparity. Policymakers and scholars in economics, sociology, and political science have frequently focused on the shrinking size and power of the middle class in prosperous countries. While the middle class has undoubtedly suffered due to neoliberalism and financialization, Chapter 5 data demonstrates that the poor are falling behind both the extraordinarily wealthy and the middle class. In other words, the poor appear to be the biggest losers as there has been an increase in employment concentration in low-wage, low-skill service sector jobs that are increasingly under attack by cost-cutting technologies, anti-union employer tactics, and the threat of outsourcing in an effort to maximize profits, satisfy shareholders and fatten management and owner salaries (Fligstein and Shin, 2007; Wright and Rogers, 2015).

There are a few flaws in the study that should be mentioned. First, because comparable financial development data and income inequality indices are not accessible for all nations, the study only

goes back to 1993 in chapter 4. Second, the analysis is based on a number of financial development indices. To be clear, these metrics do not cover all aspects of financialization. Regardless, the indicators used, when combined, give us a good idea of the extent to which advanced countries have turned to finance since 1993; and the findings convince us that the literature on income inequality should begin paying more attention to financialization in order to account for the degree and ways in which income inequality has soared in advanced countries. This is critical not just from an academic standpoint but also from a policy standpoint. After all, addressing the widening income gap may require precise identification of the factors that contribute to it. Researchers will be able to draw more complex and rigorous findings in this regard when additional data becomes available.

These thesis findings have a few normative implications for financial reform substance and sequencing. Domestic huge banks appear to be a greater danger to equality than capital markets or overseas investors. Reforms aimed at improving banks' and capital markets' ability to provide credit to impoverished people and small businesses should take precedence over other measures. Prudential oversight and anti-monopolistic measures in the banking sector might be introduced in the first stage of reforms, while corporate governance and information transparency in capital markets could be strengthened. Discrete events or shocks, as well as structural characteristics such as the legal system or political institutions, could be major drivers of financial reforms, according to Abiad and Mody (2005).

It would be an essential question to investigate in the future. It is unclear whether financial reforms are more likely if there is more inequality. Inequality may put pressure on society to modify its policy regime by creating pressure and incentives. On the other hand, it may hinder true financial reforms by allowing incumbents to either resist or profit from it (Claessens and Perotti, 2007). Another point of discussion is the impact of monetary systems on income inequality as cryptocurrencies become more prevalent in the near future. Although inequality is recognized as a complex and emergent (rather than simple and static) issue, we may nevertheless identify channels via which blockchains are likely to influence income distribution. What impact will blockchain technology have on income inequality?

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Appendices

Appendix A: Summary statistics for each region

Summary statistics for five groups: North America, South Asia, Middle East & North Africa, Latin America & Caribbean, and Europe & Central Asia.

Variable	Obs	Mean	Std. Dev.	Min	Max
LogGiniD	50	3.527048	.1029893	3.363842	3.650658
FD	50	.8282612	.0871685	.5752383	.899034
FPS	50	1.886026	.5128879	.9009299	2.724146
LogGdpPca	50	10.7246	.1083872	10.48647	10.88475
LER	50	.2714036	.1192715	.0860949	.5558333
BOO	50	-.079789	.040015	-.163518	-.021489
LogEdu	50	4.608983	.051834	4.547456	4.734116
LogSEI	50	3.726728	.5115523	2.997961	4.41601
Reg	50	8.605996	.2328401	8.095525	9.002948
LMR	50	8.18038	.8373796	6.574944	9.277778

Appendix Table 1: region=="North America"

Variable	Obs	Mean	Std. Dev.	Min	Max
LogGiniD	75	3.739798	.1539445	3.526361	3.912034
FD	75	.2976264	.093669	.1490128	.4957358
FPS	75	.2156732	1.076062	-2.023703	2.103467
LogGdpPca	75	7.169613	.4881052	6.415292	8.256932
LER	75	.1914191	.0776337	.026825	.3501
BOO	75	-.1075462	.0682862	-.238702	.1890819
LogEdu	75	3.915108	.6116337	2.390823	4.600052
LogSEI	75	3.732434	.4107659	2.978156	4.484543
Reg	75	6.211019	.4764636	5.088108	6.992252
LMR	75	6.228322	.6763641	4.913771	8.114923

Appendix Table 2: region=="South Asia"

Variable	Obs	Mean	Std. Dev.	Min	Max
LogGiniD	175	3.695283	.1098862	3.465736	3.928013
FD	175	.357998	.1242256	.1390813	.6461136
FPS	175	-.2562761	1.273433	-3.892949	3.353523
LogGdpPca	175	8.794116	1.04862	7.369374	10.44387
LER	175	.282734	.197833	-.4848239	.6422548
BOO	175	-.0393771	.0468633	-.11953	.13308
LogEdu	175	4.361951	.2559854	3.601365	4.757567
LogSEI	175	4.324038	.3125509	3.409382	4.989839
Reg	175	6.790284	1.454245	3.343768	10.9854
LMR	175	6.549683	2.006245	2.559696	11.73416

Appendix Table 3: region=="Middle East & North Africa"

Variable	Obs	Mean	Std. Dev.	Min	Max
LogGiniD	175	3.875552	.0800516	3.624341	3.994524
FD	175	.3587555	.1031032	.1337235	.6332744
FPS	175	-.2663088	1.257549	-3.896335	1.531482
LogGdpPca	175	8.933283	.3812283	7.891234	9.600441
LER	175	.2557085	.1461685	-.629022	.5761106
BOO	175	-.0607273	.1674359	-.568581	.4178134
LogEdu	175	4.445957	.1866981	4.015968	4.95284
LogSEI	175	3.800636	.5924402	2.74955	5.116187
Reg	175	6.332739	.9118461	4.278069	7.785996
LMR	175	5.949761	.9265417	3.840791	7.756685

Appendix Table 4: region=="Latin America & Caribbean"

Variable	Obs	Mean	Std. Dev.	Min	Max
LogGiniD	250	3.615506	.1416019	3.363842	3.845883
FD	250	.5804293	.1873369	.2402115	.9556417
FPS	250	.1103114	1.083767	-3.051421	2.301176
LogGdpPca	250	9.292781	1.252863	6.906159	10.94625
LER	250	.2904133	.1985806	-.38481	1.07559
BOO	250	-.0947615	.2709963	-1.82756	.276057
LogEdu	250	4.509185	.2950341	3.62602	5.057313
LogSEI	250	4.310508	.7580374	2.773456	6.080681
Reg	250	7.354196	1.1751	3.451944	9.237315
LMR	250	6.290254	1.477839	3.764345	8.827766

Appendix Table 5: region=="East Asia & Pacific"

Variable	Obs	Mean	Std. Dev.	Min	Max
LogGiniD	400	3.352302	.1429746	3.086487	3.747148
FD	400	.6492573	.1706252	.2130215	1
FPS	400	-.114466	1.087132	-4.532266	2.721053
LogGdpPca	400	10.4709	.6919963	8.670369	11.62597
LER	400	.1799731	.1590653	-1.60869	.5199262
BOO	400	-4.913713	23.88908	-281.247	.967077
LogEdu	400	4.659677	.1482055	4.059544	5.053384
LogSEI	400	4.370143	.474908	3.497025	6.012154
Reg	400	7.190661	1.037875	3.640219	8.778707
LMR	400	5.758189	1.369485	2.939645	8.476744

Appendix Table 6: region=="Europe & Central Asia"

Appendix B: some correlation analysis for regions

Correlation analysis for five groups: North America, South Asia, Middle East & North Africa, Latin America & Caribbean, and Europe & Central Asia.

	LogGiniD	FD	FPS	LogGdp-a	LER	BOO	LogEdu	LogSEI	Reg	LMR
LogGiniD	1.0000									
FD	0.5512	1.0000								
FPS	0.6334	0.3558	1.0000							
LogGdpPca	0.3040	0.8324	0.1599	1.0000						
LER	0.0900	0.6330	-0.0029	0.6753	1.0000					
BOO	0.5435	0.8168	0.2827	0.7198	0.6377	1.0000				
LogEdu	-0.8310	-0.2725	-0.5084	-0.0038	0.3641	-0.2398	1.0000			
LogSEI	-0.9385	-0.3588	-0.5749	-0.0368	0.0200	-0.4007	0.8214	1.0000		
Reg	0.4136	0.6333	0.0758	0.6978	0.5217	0.5541	-0.1141	-0.2941	1.0000	
LMR	0.5959	0.6736	0.2498	0.7649	0.4525	0.6671	-0.3722	-0.4418	0.7025	1

Appendix Table 7: region=="North America"

	LogGiniD	FD	FPS	LogGdp-a	LER	BOO	LogEdu	LogSEI	Reg	LMR
LogGiniD	1.0000									
FD	0.3416	1.0000								
FPS	-0.0948	0.6114	1.0000							
LogGdpPca	0.6463	-0.1587	-0.3414	1.0000						
LER	0.6691	0.5193	0.2070	0.4728	1.0000					
BOO	-0.1301	0.1500	0.0558	-0.1300	0.0317	1.0000				
LogEdu	0.8625	0.0048	-0.1747	0.7844	0.4805	-0.2147	1.0000			
LogSEI	0.5713	-0.2521	-0.3683	0.7001	0.3328	-0.1785	0.6567	1.0000		
Reg	0.6730	0.2110	0.0330	0.6610	0.5033	-0.0347	0.8004	0.3756	1.0000	
LMR	0.7065	0.5650	0.2192	0.3045	0.6612	0.0153	0.4147	0.3551	0.4551	1

Appendix Table 8: region=="South Asia"

	LogGiniD	FD	FPS	LogGdp-a	LER	BOO	LogEdu	LogSEI	Reg	LMR
LogGiniD	1.0000									
FD	-0.2572	1.0000								
FPS	0.2809	0.6175	1.0000							
LogGdpPca	-0.0323	0.5257	0.3711	1.0000						
LER	0.2589	0.1291	0.1771	0.3340	1.0000					
BOO	-0.3404	0.5365	0.1988	0.7272	0.0363	1.0000				
LogEdu	-0.1506	0.5753	0.1942	0.5986	0.2189	0.3533	1.0000			
LogSEI	-0.2119	0.2696	0.0582	0.0846	0.4876	-0.0930	0.2415	1.0000		
Reg	0.2772	0.2268	0.3331	0.5194	0.4704	0.0777	0.2490	0.4819	1.0000	
LMR	0.3812	0.1293	0.3443	0.3415	0.3306	-0.1717	0.2138	0.4485	0.8265	1

Appendix Table 9: region=="Middle East & North Africa"

	LogGiniD	FD	FPS	LogGdp~a	LER	BOO	LogEdu	LogSEI	Reg	LMR
LogGiniD	1.0000									
FD	-0.1748	1.0000								
FPS	-0.0721	0.1791	1.0000							
LogGdpPca	-0.5288	0.7229	0.2287	1.0000						
LER	-0.2121	0.1843	-0.1490	-0.0325	1.0000					
BOO	-0.1792	0.0022	0.3656	0.1927	0.1387	1.0000				
LogEdu	-0.2703	0.4094	0.3331	0.4489	0.2278	-0.0708	1.0000			
LogSEI	-0.0070	0.0497	-0.4924	0.0270	0.2242	0.2487	-0.4611	1.0000		
Reg	0.0967	-0.1357	-0.2826	-0.2156	0.3225	-0.1317	-0.1679	0.4819	1.0000	
LMR	0.0099	0.4655	0.4805	0.1739	0.2436	0.2486	0.3891	-0.1860	-0.3677	1

Appendix Table 10: region=="Latin America & Caribbean"

	LogGiniD	FD	FPS	LogGdp~a	LER	BOO	LogEdu	LogSEI	Reg	LMR
LogGiniD	1.0000									
FD	-0.6511	1.0000								
FPS	0.2275	0.2345	1.0000							
LogGdpPca	-0.7492	0.8323	0.0523	1.0000						
LER	0.1049	0.2262	0.3606	0.2110	1.0000					
BOO	-0.0086	0.0227	0.0063	-0.1101	-0.1969	1.0000				
LogEdu	-0.6382	0.7287	0.1432	0.8220	0.1531	-0.1163	1.0000			
LogSEI	0.4530	0.0101	0.4137	-0.0125	0.4818	-0.3352	-0.0613	1.0000		
Reg	-0.4041	0.5732	0.1630	0.7882	0.1636	-0.2308	0.7445	0.2655	1.0000	
LMR	-0.3081	0.4031	-0.0361	0.6213	0.0879	-0.1224	0.5210	0.0498	0.8159	1

Appendix Table 11: region=="East Asia & Pacific"

	LogGiniD	FD	FPS	LogGdp~a	LER	BOO	LogEdu	LogSEI	Reg	LMR
LogGiniD	1.0000									
FD	-0.1382	1.0000								
FPS	0.1159	0.3008	1.0000							
LogGdpPca	-0.5501	0.7010	0.0243	1.0000						
LER	0.1277	0.1060	-0.1375	0.0473	1.0000					
BOO	0.0962	-0.0796	0.1378	-0.2820	0.0640	1.0000				
LogEdu	-0.5436	0.3373	0.1054	0.4443	0.0067	0.1729	1.0000			
LogSEI	-0.3970	0.2334	-0.1689	0.4437	0.0075	-0.5161	0.0322	1.0000		
Reg	-0.3915	0.4254	0.1208	0.5330	0.0931	-0.1096	0.1848	0.5224	1.0000	
LMR	0.1311	0.4756	0.0366	0.1326	0.2480	-0.0411	0.0268	0.3190	0.4568	1

Appendix Table 12: region=="Europe & Central Asia"

Appendix C: Lag selection by STATA for each variable

Country	LogGiniD	FD	FPS	LogGdpPca	BOO	LogSEI	Reg
Argentina	2	1	2	0	2	2	2
Australia	2	1	1	2	2	2	2
Austria	2	2	2	2	2	2	2
Brazil	2	1	2	2	1	2	2
Canada	1	0	0	0	0	0	1
Chile	2	1	2	2	0	2	2
China	2	0	0	0	0	0	0
Colombia	1	0	1	0	0	0	0
Denmark	2	2	2	2	1	2	2
Egypt, Arab Rep.	1	1	0	1	2	0	0
Finland	2	2	2	2	2	2	2
France	1	1	2	2	0	2	0
Germany	2	1	1	2	2	2	0
Greece	1	0	0	0	0	0	0
Hungary	1	0	1	0	1	0	2
India	2	2	1	2	1	2	2
Indonesia	2	2	2	1	2	2	2
Israel	2	2	2	2	0	2	1
Japan	2	2	2	1	2	2	2
Jordan	2	2	1	2	2	0	2
Korea, Rep.	2	2	2	2	2	1	1
Luxembourg	1	0	0	1	2	0	0
Malaysia	1	2	2	0	1	0	2
Mauritius	2	2	1	2	1	2	0
Mexico	2	1	0	0	0	0	0
Morocco	1	0	0	0	0	1	2
Netherlands	1	0	0	2	1	0	2
New Zealand	2	2	2	0	0	2	2
Nigeria	2	2	2	2	2	2	2
Norway	2	2	0	1	2	2	1
Oman	1	1	0	0	1	0	0
Pakistan	1	0	2	2	2	2	0
Panama	2	2	2	2	0	2	2
Peru	2	2	2	2	2	2	0
Philippines	2	2	2	1	2	2	2
Poland	2	1	1	1	0	0	2
Saudi Arabia	2	1	2	0	0	0	2
Singapore	2	1	2	2	1	2	1
South Africa	1	1	2	2	2	1	2
Spain	2	2	2	2	2	2	1
Sri Lanka	2	2	2	2	2	1	2
Sweden	2	0	1	1	2	1	2
Switzerland	1	2	0	2	2	2	0
Thailand	2	2	1	2	1	2	2
Tunisia	2	2	1	0	1	2	0
Turkey	1	2	1	2	2	1	2

United Kingdom	2	2	0	2	2	1	1
United States	1	0	0	2	0	1	0

Appendix Table 13: Lag selection by STATA

Appendix D: Unit root test for BanCr

Im-Pesaran-Shin unit-root test for BanCr

Ho: All panels contain unit roots	Number of panels =	48
Ha: Some panels are stationary	Number of periods =	25
AR parameter: Panel-specific	Asymptotics: T,N -> Infinity	
Panel means: Included	sequentially	
Time trend: Not included		

ADF regressions: 1 lag

	Statistic	p-value
W-t-bar	-0.7809	0.2174

Appendix Table 14: Unit root test for BanCr

Im-Pesaran-Shin unit-root test for D.BanCr

Ho: All panels contain unit roots	Number of panels =	48
Ha: Some panels are stationary	Number of periods =	24
AR parameter: Panel-specific	Asymptotics: T,N -> Infinity	
Panel means: Included	sequentially	
Time trend: Not included		

ADF regressions: 1 lag

	Statistic	p-value
W-t-bar	-10.5377	0.0000

Appendix Table 15: Unit root test for D.BanCr

Appendix E: Unit root test for *VaTra*

Im-Pesaran-Shin unit-root test for *VaTra*

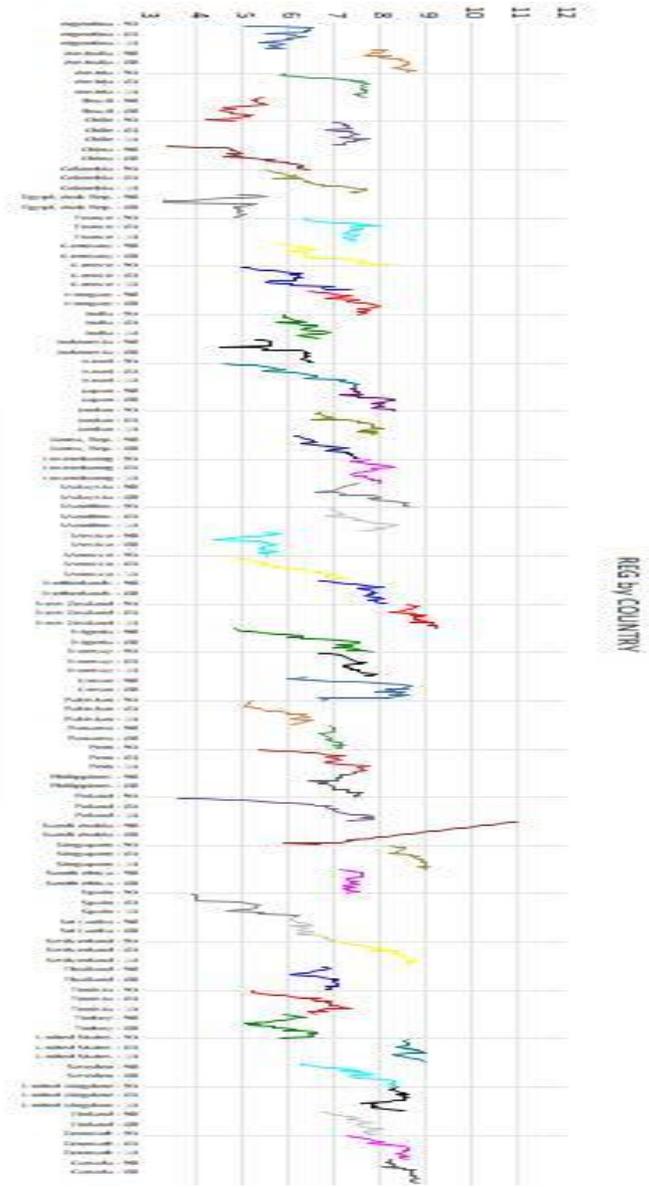
Ho: All panels contain unit roots	Number of panels =	48
Ha: Some panels are stationary	Number of periods =	25
AR parameter: Panel-specific	Asymptotics: T,N -> Infinity	
Panel means: Included		sequentially
Time trend: Not included		

ADF regressions: 1 lag

	Statistic	p-value
W-t-bar	-8.4160	0.0000

Appendix Table 16: Unit root test for *VaTra*

Appendix G: Government regulations (Reg) Across countries



Appendix Table 18: Government regulations (Reg)