The Contingent Effects of Economic Growth and Institutions on Income Inequality: An Empirical Study

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Contents

1. Introduction

Objectives

- Propose new ways to measure the **joint effect of institutions and economic growth on income inequality**.
- Introduce the **expanded VoC spectrum** as an institutional proxy.
- Analyse countries at **various economic development stages**.
- Explore how different **non-market coordination mechanisms** affect income inequality over time.

Main Findings

- **Contingency effects matter for income inequality:**

  Different institutional effects are shown to be **dependent upon economic growth and vice versa**.

  The income inequality increasing effects of economic growth are **moderated by robust institutions**.

2. Literature Review

Contingency Effects of Economic Growth and Institutions
Institutional Configurations and Income Inequality
Labour Market Institutions and Income Inequality
Institutional Quality and Income Inequality

Contingency Effects of Economic Growth and Institutions

- Considering **contingency** between institutions and economic growth is **recent** in the literature on income inequality.

  Behnezhad, Razmi, and Sadati (2021): governance indicators influence the relationship between economic growth and income inequality in countries with middle and high per capita income.

  Sekkat (2023): economic growth influences the change in the elasticity of income of the poor, taking formal and informal institutions as well as religious factors.

Contingency Effects of Economic Growth and Institutions

- **Context:** Top-income groups (wealth-based and compensation-based income) have a **heightened sensitivity** to economic growth.
- **Hypothesis: Good quality institutions can mitigate the income inequality increasing effects of economic growth** at the country-level and can help reduce poverty.
- **National institutional framework:** Capturing domestic conditions and institutional capacity for redistribution emerges as a crucial factor.
- **Study's main contribution:** Renewed focus on a country's **institutional capacity for redistribution and inclusive growth**.

Institutional Configuration

- **The VoC framework:** approximates institutional configurations
- **The VoCs:** operationalised as sample groups with a focus on distinct characteristics of a set of labour market institutions and institutional spheres (Rueda and Pontusson, 2000; Roberts and Kwon, 2017).
- **Contingency effects:** Huber, Petrova, and Stephens (2018) interact them with **financialisation** while Movahed (2023) with **labour market interventions** and macroeconomic variables such as **tax revenues, unemployment rates, and stock market capitalisation**.

Determinants of Income Inequality: Varieties of Capitalism

Table 1. Varieties of Capitalism Case-Studies

Varieties of Capitalism	Institutional settings	Countries
Liberal market economy (LME)	Competitive markets and formal contracts; Market-driven coordination; Short-term contracts; Radical innovation in technology and service sectors	United States, United Kingdom, Australia
Coordinated market economy (CME)	Inter-firm networks and associations; High degree of cooperation and long-term relationships; Prevalent collective bargaining; Incremental innovation of capital goods	Germany, Japan, Finland
Mixed market economy (MME)	State intervention in protection regimes and production systems pervasive due to weakened coordination and coalition capacity among actors; Flexible labour markets; Selective coordination	Italy, Spain, Portugal
Hierarchical market economy (HME)	Non-market and hierarchical relations in family-owned and controlled diversified business groups, multinational corporationss, atomistic labor, and employee relations; Ability to establish political connections and knowledge of the domestic specificities	Mexico, Chile, Turkey

Compiled by authors and adapted from Hall and Soskice (2001), Molina and Rhodes (2008), Schlumberger (2008), Nölke and Vliegenthart (2009), Schneider (2009), Robinson (2011), Hassel (2014), Carney (2016), Becker and Vasileva (2017), Kiran (2018), Nölke (2018), Vasileva-Dienes and Schmidt (2018)

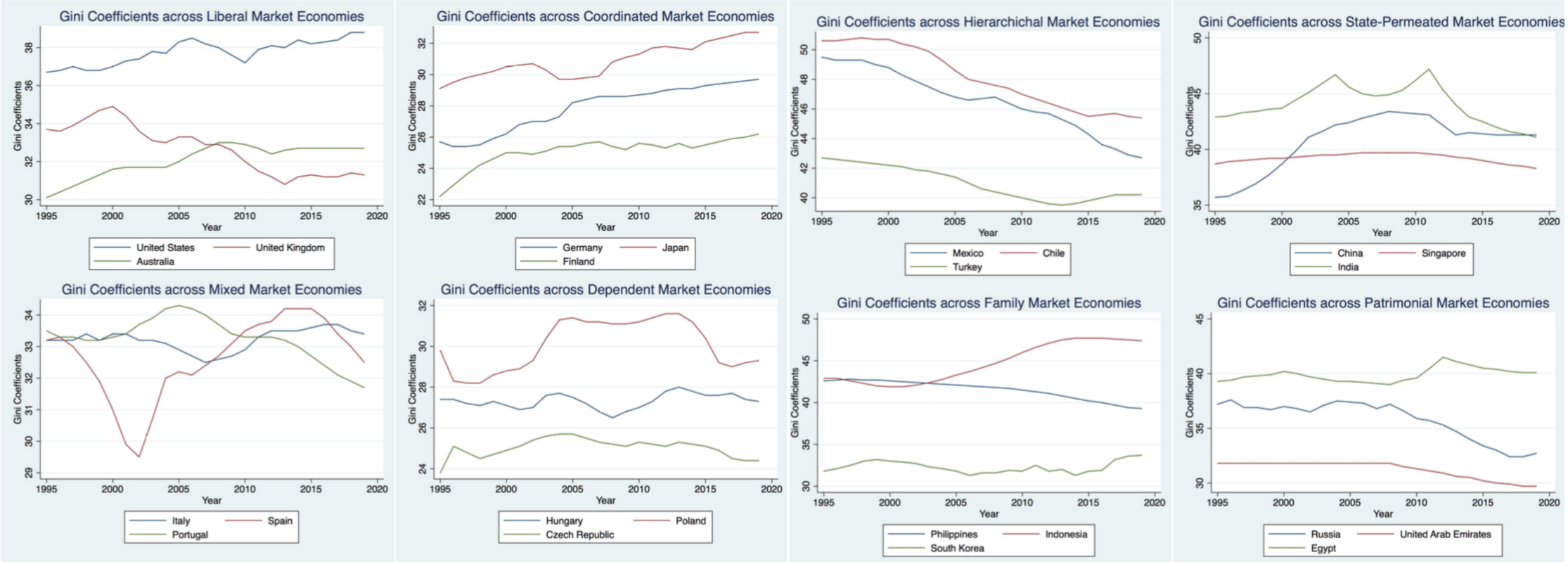
Determinants of Income Inequality: Varieties of Capitalism

Table 1 continued. Varieties of Capitalism Case-Studies

Varieties of Capitalism	Institutional settings	Countries
Dependent market economy (DME)	Dependence on intra-firm hierarchies with transnational enterprises; Assembly platforms for semi-standardised industrial goods	Czech Republic, Hungary, Poland
State [permeated] market economy (SME)	Informal coordination via state elites and/or firms in a family group; interpersonal reciprocity and private-public alliances; Quick mobilisation of resources and use of political leverage	China, India, Singapore
Family market economy (FME)	Informal coordination among firms within a family group or in a family business group; Diversity of businesses in one family group; Quick response to new market opportunities based on incremental innovation	Indonesia, The Philippines, South Korea
Patrimonial market economy (PME)	Patrimonial relations in formal institutions and informal rules that govern exchange processes; Compensate for shortcomings of the formal system by helping companies to overcome excessive bureaucracy or creating trust in market transactions	Russia, Egypt, United Arab Emirates

Compiled by authors and adapted from Hall and Soskice (2001), Molina and Rhodes (2008), Schlumberger (2008), Nölke and Vliegenthart (2009), Schneider (2009), Robinson (2011), Hassel (2014), Carney (2016), Becker and Vasileva (2017), Kiran (2018), Nölke (2018), Vasileva-Dienes and Schmidt (2018)

Varieties of Capitalism and Income Inequality



Source: Author's elaboration.

Fig 1. Average income inequality values for each variety of capitalism with available data over time

Labour Market Institutions

- **Labour market institutions:** union density, collective bargaining coordination and coverage, minimum wages, median wages, and wage dispersions, employment protection legislation and unemployment benefits.

- **Literature:** greater unionisation, centralised wage bargaining, wage setting institutions, and employment security tend to raise wages, **decreasing income inequality** (Nielsen, Bradley, Stephens, Huber, and Moller, 2001; Checchi and Garcia-Penalosa, 2008; Huber and Stephens, 2014; Jaumotte and Osorio- Buitron, 2015).

- **Contingency effects:** Interacting institutions with **financialisation** variables (Darcillon, 2016; Huber, Petrova, and Stephens, 2022); with the expansion of **knowledge-intensive services** (Hope and Martelli, 2019); with **government policies** (Pontusson, Rueda, and Way, 2002).

Institutional Quality

- **Institutional Quality:** Extended analyses to include **more developing countries**, most likely due to the availability and completeness of data as opposed to data on labour market institutions.
- **Literature:** Various **governance indicators** such that better quality institutions reduce income inequality (Perrera and Lee, 2013; Kunawotor, Bokpin, and Barnor, 2021; Kouadio and Gakpa, 2022; Szczepaniak, Geise, and Bariyah, 2022).
- **Contingency effects:** Institutions with **market income inequality** (Josifidis, Supic, and Beker-Pucar, 2017), with **inflation** (Law and Soon, 2020), with **public expenditure** (Blancheton and Chhorn, 2021), and with **foreign direct investment (FDI) inflows** (Huynh, 2021)

4. Empirical Approach

Data and Methodology

Hypotheses Tested

Results and Interpretations

Data and Methodology

- An **empirical study** on the effects of institutions and economic growth on cross-country variation in income inequality (macro-level data)

- **Dynamic panel data analysis (systems-GMM)** for **2005-2019** for **24 VoC countries** in the literature, **16 of which are OECD countries** with available data on labour market institutions

Data and Methodology

$$GINI_{it} = \beta_1 + \beta_2 GINI_{it-1} + \beta_3 GINI_{it-2} + \beta_4 X_{it-1} + \beta_5 Z_{it-1} + u_i + \theta_t + \varepsilon_{it}$$

- **Dependent variable:** Gini Coefficient, post-tax and post-transfer disposable income

- **Macroeconomic Control variables:**

1. Gini coefficient lagged by 1 period to proxy for **persistence of income inequality**
2. Gini coefficient lagged by 2 periods to proxy for **policy lag effects**
3. government expenditure to proxy for **government intervention**
4. squared government expenditure to proxy for **non-linear effects of government intervention**
5. tax revenue to proxy for **taxation**
6. trade openness to proxy for **globalisation**
7. market capitalisation to proxy for **financialisation**
8. GDP growth to proxy for **growth of the economy**

Data and Methodology

- **Institutional variables of interest:**

1. employment protection legislation, trade union density, collective bargaining coverage, gender wage gap, all as proxies for **labour market institutions**
2. rule of law for **institutional quality**
3. and eight dummy variables for VoCs to proxy for **institutional configurations**

Data and Methodology

- All **explanatory variables**, with the exception of VoCs which is time-invariant and Gini coefficient lagged by two periods, are **lagged by one period**

- **Instruments** used in systems-GMM are lagged Gini, unemployment rate for labour force participation, and average years of total schooling for human capital (correlated with income inequality but not directly correlated with the error term)

- **Country and time fixed effects** are included

Hypotheses Tested

Hypothesis 1 - Macroeconomic Controls:

- The **persistence of income inequality, financialisation, non-linear effects of government intervention, and economic growth** are expected to show **positive** signs such that they are income inequality increasing.
- **Policy lag effects, linear effects of government intervention, and taxation** are hypothesised to show a **negative** sign and are expected to reduce levels of income inequality.
- **Globalisation** may have either a **positive** or **negative** effect on income inequality.

Hypotheses Tested

Hypotheses 2a and 2b - Institutional Quality and Labour Market Institutions:

- A **negative** sign is expected from **the interaction between GDP growth and better institutional quality and more robust labour market institutions** so that the positive effect (inequality increasing) of the expansion of the economy is weaker with stronger institutions, therefore leading to lower income inequality.

- A **positive** sign is expected from **the interaction between GDP growth and a greater gender wage gap** such that the positive effect (inequality increasing) of the expansion of the economy is greater when the gender wage gap is wider, therefore leading to higher income inequality.

Hypotheses Tested

Hypothesis 3 - Institutional Configurations:

- Institutional configurations can have various effects on levels of income inequality, but **always contingent upon economic growth**.

- **More informal coordination** as in capitalist types governed by patron-client relationships, familial ties, and networks of influence at the country-level may lead to greater income inequality as informality not only encourages participation in shadow economies and altogether greater wage disparities but also inhibits mobility to higher-paying formal job opportunities and overall access to social protection.

Hypotheses Tested

Hypothesis 3 - Institutional Configurations:

- On the other hand, institutional settings highlighting **the centrality of positive state interventions**, which can come in the form of progressive tax policies and inclusive transfer and training programmes, among others, may lead to less income inequality, with greater economic growth.

Macroeconomic Controls

Dependent variable: Gini Coefficient - Household Disposable Income Inequality	(1)	(2)	(3)	(4)	(5)	(6)
Gini Coefficient (t-1)	1.441***	1.434***	1.360***	1.282***	1.298***	1.263***
	(0.0691)	(0.0690)	(0.0781)	(0.132)	(0.123)	(0.122)
Gini Coefficient (t-2)	-0.465***	-0.458***	-0.398***	-0.314**	-0.325***	-0.292**
	(0.0683)	(0.0681)	(0.0799)	(0.133)	(0.124)	(0.124)
Total government expenditure as % of GDP (t-1)	-0.0570	-0.0524	-0.196**	-0.0971	0.0322	0.00816
	(0.0675)	(0.0665)	(0.0880)	(0.106)	(0.122)	(0.130)
Squared total government expenditure as % of GDP (t-1)	0.000964	0.000794	0.00465*	0.00188	-0.00146	-0.00104
	(0.00204)	(0.00201)	(0.00253)	(0.00313)	(0.00339)	(0.00382)
Tax revenue as % of GDP (t-1)	0.00500	0.00555	0.00280	0.00272	0.000208	-0.00377
	(0.00375)	(0.00391)	(0.00498)	(0.00445)	(0.00480)	(0.00478)
Market capitalisation of listed domestic companies (t-1)	0.000759**	0.000800	0.000599	0.000186	0.000423	0.000133
	(0.000364)	(0.000516)	(0.000684)	(0.000486)	(0.000373)	(0.000367)
Trade openness (t-1)	-0.000843***	-0.000730**	-0.00246***	-0.00242**	-0.00190**	-0.00389***
	(0.000322)	(0.000302)	(0.000939)	(0.00102)	(0.000791)	(0.000666)

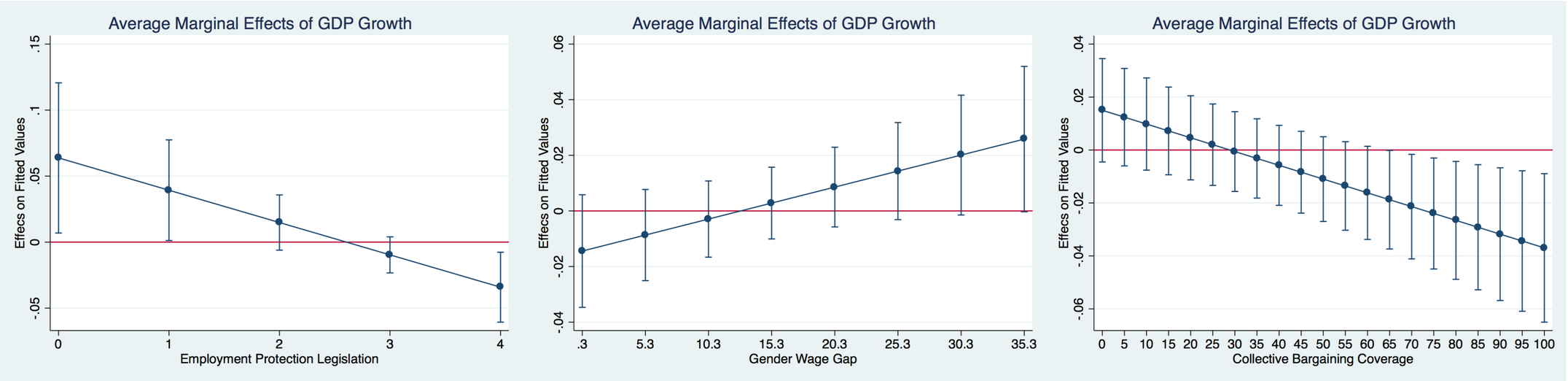
- Significant relationships between macroeconomic controls and income inequality, with government expenditure, market capitalisation, and trade openness showing **consistent** effects.
- Previous levels of Income inequality demonstrate **persistence** over time, with policy interventions showing **delayed** effects.
- **Financialisation** is **positively** associated with income inequality, while **trade openness** tends to **decrease** it.

Contingency Effects - Labour Market Institutions

Dependent variable: Gini Coefficient - Household Disposable Income Inequality	(1)	(2)	(3)	(4)
GDP growth rate (t-1) x Employment Protection Legislation (t-1)	**-0.0245****			
	(0.00998)			
Gender wage gap (t-1)		-0.00412		
		(0.00379)		
GDP growth rate (t-1) x Gender wage gap (t-1)		**0.00115****		
		(0.000560)		
Collective Bargaining (t-1)			5.21e-05	
			(0.000774)	
GDP growth rate (t-1) x Collective Bargaining (t-1)			**-0.000520*****	
			(0.000185)	
Trade Union Density (t-1)				0.00367
				(0.00261)
GDP growth rate (t-1) x Trade Union Density (t-1)				-0.00104
				(0.000678)

- **Stronger employment protection legislation** and **greater collective bargaining coverage** lead to **reduced inequality** with greater economic growth.
- **The opposite** is seen **for greater gender wage gaps.**

Interpretations



Source: Author's elaboration.

Fig 2. Margin Plots for GDP Growth, Labour Market Institutions, and Household Disposable Income Inequality

Contingency Effects - Institutional Configurations

Dependent variable: Gini Coefficient - Household Disposable Income Inequality	(1)	(2)	(3)	(4)
GDP growth rate (t-1) x LME	**0.0599*** **			
	(0.00927)			
CME		0.132***		
		(0.0361)		
GDP growth rate (t-1) x CME		-0.00348		
		(0.0112)		
MME			0.0388	
			(0.0383)	
GDP growth rate (t-1) x MME			**-0.0433*** **	
			(0.0156)	
HME				0.0490
				(0.0839)

- **Strict adherence to formal contracts in liberal market economies** (LMEs) increase income inequality
- **Lack of coordination among actors resulting in increased state intervention in mixed market economies** (MMEs) decreases income inequality

Contingency Effects - Institutional Configurations

Dependent variable: Gini Coefficient - Household Disposable Income Inequality	(1)	(2)	(3)	(4)
DME	0.00731			
	(0.0540)			
GDP growth rate (t-1) x DME	**-0.0248****			
	(0.0112)			
SME		-0.233		
		(0.204)		
GDP growth rate (t-1) x SME		0.0272		
		(0.0220)		
FME			-0.0283	
			(0.0908)	
GDP growth rate (t-1) x FME			0.0122	
			(0.0277)	
PME				-0.112***
				(0.0388)
GDP growth rate (t-1) x PME				**0.0214***
				(0.0119)

- **Fundamental dependence on transnational companies in dependent market economies** (DMEs) decrease income inequality
- **Opaque transactions and rent-seeking behaviour in patrimonial market economies** (PMEs) increase income inequality

5. Conclusions

Main Contributions

Policy Recommendations

Future Studies

Main Contributions

- The **novel use of VoCs** as a proxy for institutional configurations
- The roles of different **operationalisations of institutions**
- The exploration of **contingency effects,** especially to demonstrate the trickling-down effect

Policy Recommendations

- The importance of **institutional effects** suggests that policies should be country and context-specific
- Insignificant outcomes related to **trade union density** call for a **reevaluation of its effectiveness** in reducing income inequality
- Understanding the influence of VoCs on income distribution suggests that policies should consider **broader institutional coherence across different spheres**

Future Studies

- **Other variables:** Use of other labour market institutions and interactions with VoC variables; Inclusion of other quality indicators; Inclusion of other related variables such as progressive taxation and other types of fiscal policies
- **Institutions and culture:** World Values Survey in consideration of culture
- **Cluster analysis:** To reinforce VoC case studies
- **Growth models:** Highlighting the theoretical and empirical nexus between growth models and institutional determinants on income distribution
- **Focus on wealth:** Alternative dependent variable; the use of quantile regressions

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Thank you for your attention!

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