Income Inequality, Finance, and Economic Growth Relationships

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Abstract

Since the early 1980s, income inequality has risen between and within countries in the neo-liberal era. In literature, there are different views on the relationship of financial sector and the real economy with income inequality. Two main hypotheses in the literature regarding this relationship are as follows: The first hypothesis claims that developments in financial sector can only benefit people with higher incomes. Those with higher incomes can offer collateral and are more likely to repay loans, while those with low-income levels may have difficulty in getting loans, and this may increase inequality. The second hypothesis argues that the growth of the financial sector can provide previously excluded low-income individuals with access to credit. This hypothesis suggests that income inequality decreases when financial markets are developed. This study presents the income inequality, finance, and growth relationships via panel data methodology. Our dataset consists of emerging markets, and our data source is the World Bank database. Our study contributes to the existing literature with its results, which give evidence of a negative relationship between income inequality and economic growth with policy implications. Specific policies toward the financial sector and the real sector would be implemented for poverty alleviation.

1   Introduction

Many studies have been conducted to investigate the causes and consequences of increasing income inequality. There are two main hypotheses in the literature regarding the relationship between financial development and income inequality. According to the first hypothesis, financial development can only benefit people with higher incomes since those with higher incomes can offer collateral and are more likely to repay loans. The second hypothesis suggests that income inequality decreases when financial markets are developed. The growth of the financial sector can provide previously excluded low-income individuals with access to credit, and finance can increase the income of low-income people by encouraging growth. As supporters of the first hypothesis, Banerjee and Newman (1993) and Galor and Zeira (1993) argue that there is a linear relationship between finance and income inequality. Financial development can have a dual impact on income inequality. On one hand, factors like financial asymmetry, transaction costs, collateral, and credit history can limit low-income earners' access to credit, hindering their social mobility and capital allocation efficiency, thus increasing income inequality during financial market development. On the other hand, even in developed financial markets, individuals with low incomes may struggle to obtain loans, further exacerbating income inequality. Supporting the second hypothesis, Beck et al. (2007) analyze a sample of 52 countries from 1960-1999, demonstrating that credit can lessen income inequality. According to Demirgüç-Kunt and Levine (2009), finance positively affects poverty reduction and helps decrease income inequality. Ang (2010) states that low-income people are affected more by undeveloped financial systems, and this causes higher income inequality and argues that improving financial systems can help reduce inequality. In addition to the above two opposite hypotheses, some views take place between them. One notable study by Greenwood and Jovanovic (1990) introduce the Greenwood-Jovanovic hypothesis, also known as the financial Kuznets curve (Kuznets, 1955). The hypothesis suggests that income inequality initially increases with developments in finance but then declines as financial systems become more advanced. This non-linear relationship is described as an inverted U-shaped curve. Their hypothesis suggests that finance contributes to income inequality in the early stages of development, but as credit markets mature, the income gap may decrease. Destek et al. (2020) find that banking sector development had an inverted U-shaped relationship with income inequality, while stock market development had a monotonically decreasing relationship with income inequality in Turkey. Le and Nguyen (2020) suggest that developments in the credit market may lead to higher income inequality, which supports the non-linear hypothesis.

In addition to the income inequality-finance relationship literature, there are studies that analyze the relationship between inequality and economic growth. Kuznets (1955) is known for his seminal work on the effect of growth and development stage on income distribution, which has been a major focus of development economics literature. According to Bourguignon (2001), if the rich save more than the poor do, and financial development reduces income inequality, this could reduce aggregate savings and slow growth with adverse ramifications on poverty. Galor and Moav (2006) assume that individuals' propensity to save increases as they accumulate wealth. At the early stages of development, when physical capital accumulation is the primary driver of growth, higher levels of inequality can have a positive impact on growth. However, when human capital accumulation becomes the primary engine of growth, credit market imperfections become more important at later stages. In such cases, income equality can reduce the negative impact of credit constraints on human capital accumulation, leading to positive effects on economic growth. Mdingi and Ho (2021) suggest that income inequality can impact growth through technological development, political economy, social-political unrest, and credit markets. This relationship would

be either positive, negative, or inconclusive, depending on the model. In high-income countries, the majority of studies suggest a positive relationship, whereas in low-income countries, the relationship is negative. Additionally, certain studies have reported no significant association between income inequality and real economy. Fawaz et al. (2014) find that inequality is negatively related to growth in lower-income developing countries and positively related in relatively higher-income developing countries. Iyke and Ho (2017) find that income inequality slowed down growth both in the short-run and long-run in Italy. Some studies yield inconclusive findings on the inequality–growth nexus.

This study presents the income inequality, finance, and growth relationships via panel data methodology. Our dataset consists of emerging markets, and our data source is the World Bank database. Our study contributes to the existing literature with its results, which give evidence of a negative relationship between income inequality and economic growth with policy implications.

2 Data

We analyze the income inequality, finance, and growth relationships in 12 emerging markets, which are listed in Table 1, for the period 1990-2019.

Brazil	Czech Republic	Indonesia	Poland
China	Greece	Mexico	Thailand
Colombia	Hungary	Peru	Turkey

Table 1. *Countries in the Dataset* **Source:** *MSCI Emerging Markets Index.*

As an indicator of income inequality Gini index/coefficient (GINI) is used. The Gini index of 0 represents perfect equality, while an index of 100 implies perfect inequality. Annual real GDP per capita growth (GROWTH) is used for development. Banking sector activity (BAN) is an indicator of financial development. Inflation (INF), and openness to trade (OPE) are our control variables. Table 2 presents variable names and descriptions. Descriptive statistics are given in Table 3. The correlation matrix is presented in Table 4. Income inequality is observed to be negatively correlated with economic growth and financial development.

Variable Abbreviation	Name and Description
GINI	Gini index/coefficient
GROWTH	GDP per capita growth (annual %)
BAN	Private credit by deposit money banks to GDP (%)
INF	Inflation (annual %)
OPE	Openness to trade

Table 2. *Variable names and Descriptions* **Source:** *World Bank World Development Indicators.*

	GINI	GROWTH	BAN	INF	OPE
Mean	40.38	2.87	50.97	56.92	63.96
Median	39.10	3.26	37.42	5.03	50.55
Maximum	60.50	13.64	166.50	7481.66	168.24
Minimum	20.70	-14.48	6.95	-1.74	13.52
Std. Dev.	9.76	3.79	35.31	452.93	37.63
Observation	259	356	354	358	360

Table 3. *Descriptive Statistics*

	GINI	GROWTH	BAN	INF	OPE
GINI	1.000	-0.123	-0.137	0.196	-0.681
GROWTH	-0.123	1.000	0.037	-0.160	0.041
BAN	-0.137	0.037	1.000	0.062	0.147
INF	0.196	-0.160	0.062	1.000	-0.140
OPE	-0.681	0.041	0.147	-0.140	1.000

Table 4. *Correlation Matrix*

3 Methodology and Results

To analyze the relationship between income inequality, economic activity, and financial sector, the Panel Least Squares (LS) regression is implemented. Our regression equation is as follows:

$$y_{i,t} = \alpha y_{i,t-1} + \beta X_{i,t} + \varepsilon_{i,t} \tag{1}$$

Where y is GINI, X represents the set of explanatory variables including economic growth, financial development, and other macroeconomic control variables INF and OPE, ε is the error term, i and t are for country and period. We can rewrite the above equation as:

$$GINI_{i,t} = \alpha + \beta_1 GINI_{i,t-1} + \beta_2 GROWTH_{i,t} + \beta_3 BAN_{i,t} + \beta_4 INF_{i,t} + \beta_5 OPE_{i,t} + \varepsilon_{i,t} \qquad (2)$$

The effect of GINI on economic growth may be analyzed with the following regression:

$$GROWTH_{i,t} = \alpha + \beta_1 GINI_{i,t} + \beta_2 BAN_{i,t} + \beta_3 INF_{i,t} + \beta_4 OPE_{i,t} + \varepsilon_{i,t} \qquad (3)$$

Table 5 presents our LS estimations. The standard error values are reported in parentheses. *** is for significance at 1%; ** is for significance at 5%; * is for significance at 10%.

Dep. Var.: GINI			Dep. Var.: GROWTH		
GINI(-1)	0.936	***			
	(0.014)				
GROWTH	-0.058	*	GINI	-0.053	*
	(0.032)			(0.030)	
BAN	-0.239		BAN	0.375	
	(0.291)			(0.618)	
INF	0.398	***	INF	-0.222	**
	(0.072)			(0.096)	
OPE	-0.890	***	OPE	-0.724	
	(0.323)			(0.717)	
Constant	3.331	***	Constant	5.339	***
	(0.793)			(1.658)	
Number of Observations	201		Number of Observations	256	
R-squared	0.980		R-squared	0.039	
Adjusted R-squared	0.980		Adjusted R-squared	0.024	

Table 5. *Panel LS Regression Results*

Results show a negative and significant relationship between inequality and growth in emerging markets. Our findings give evidence for the view that as economies develop, inequality decreases. The growth of the per capita GDP can provide previously excluded low-income individuals with access to credit and finance, which would increase the income of low-income people. Additionally, our results show that as income inequality increases, economic growth decreases.

We also find that inflation has a positive relationship with income inequality, while openness to trade is negatively associated with inequality. However, we found no significant relationship between banking sector development and income inequality.

4 Conclusion

In light of extensive literature attempting to explain the income inequality-growth nexus, we have the opportunity to observe different views on the debate. The main purpose of our study is to examine the above-mentioned relationships in emerging markets. Our results show a negative and significant relationship between income inequality and growth. Our findings give evidence for the view that as economic growth increases, income inequality decreases. The growth of the per capita GDP may provide previously excluded low-income individuals with access to credit and finance, which would increase the income of low-income people. Our results also show that as income inequality increases, growth decreases.

In future research, we aim to conduct a more detailed examination of the relationship between financial development and income inequality. The possible effects of private credit, tax, and savings rates on income inequality and income distribution would be interesting to analyze.

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