



Does Capital Account Liberalization and Foreign Banks Ownership Lead to Income Disparity? An Analysis of BRICS Economies

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ABSTRACT

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The purpose of the study is to evaluate the impact of capital account liberalization and foreign bank ownership on income inequality. In this study, we have analyzed BRICS countries. In this study, we have used an unbalanced panel dataset. The timeline was 1991-2020, and the BRICS countries (Brazil, Russia, India, China, and South Africa) were analyzed. To measure the data on capital account liberalization, we have used the KAOPEN index. We used income inequality as the independent variable in the study, and we measured it through Gini Coefficient. At the same time, the capital account liberalization is taken as the dependent variable and measured it through the KAOPEN index. The author analyzed per capita income, unemployment rate, inflation, and population growth as controlled variables. In robustness analysis, institutional quality variables such as corruption and government stability ratings were included. The study found that sustainable capital account liberalization and foreign banks ownership could help to reduce income inequality.

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1. Introduction

Capital account liberalization is a process that removes restrictions on the flow of capital in international transactions. It may include unrestricted international financial transactions by residents and public foreign investment in the home country. Liberalization can be carried out both inside and outside the capital. Capital account restrictions come in many forms, including foreign borrowing restrictions by domestic banks, control of the inflow of foreign capital into the economy. Restrictions on the industry segments in which foreign investors can invest and restrictions on the ability of to return investment funds to the local economy. Income inequality has long been a contentious issue among economists. Increasing income inequality is a worldwide concern and is consequently among the provocative financial, communal, and political matters. The noticeable and visible difference between rich and poor in developed economies has widened for decades, while inequalities in developing markets and developing countries have become increasingly complex (Dabla-Norris, Ji, Townsend, & Unsal, 2021). Economic theory generates contradictory philosophies regarding capital account liberalization and income inequality association and connection (Greenwood and Jovanović, 2021; Newman, 2016). Several studies (al, 2012; Levine, 2021; Rioja, 2015; Zoo, 1997) claimed adverse effects of free capital movement and income gap.

Studies on pecuniary inequality are insufficient. Greenwood and Jovanović (2021) argue that income inequality proliferates in the initial stages of financial growth and that inequality decreases when inflation reaches a certain level. Newman (2016) have found that income inequality will have a declining effect when the development of financial markets is done. Similarly, a well-functioning financial market plays a crucial role in reducing income inequality. In contrast, Ryan and Zingles (2021) argue that growth in the financial sector can increase income inequality. In recent decades, the association between open capital account system and income disparity created the interest of academics & experts, especially policy makers (Agnello,

Mallick, & Sousa, 2012; Ang, 2020; Perotti, 2021; Zoo, 1997) and decisions on income inequality (A. e. al, 2021; Atkinson, 2021; Lee, 1995).

D. e. al (2021) has concluded that unrestricted capital account, as expressed by the overall liberalization index, increased income from 1997-to 2005. Furthermore, they have presented an indication that the increment of privatization laws, removal of the credit restrictions, and the reduction of barricades to entry can decrease income inequality. Although a reduced negative impact of unrestricted capital flow on income disparity has been noticed, there have been found insignificant in indigent nations. In addition, the liberalization of stock markets has exacerbated income inequality. Gamot et al. (2021) found that globalization of business reduced income inequality, while financial globalization increased income inequality.

Much has been written about how foreign bank ownership structure affects financial operations (Babu, 2002; Jenkins, 2015; Velunga, 2002). Numerous studies have been led to explore the impact of different categories of foreign bank ownership structures on the sustainable development and transformation of the economy. In Atkinson (2021) have shown that foreign bank ownership and foreign currency are closely related to increased productivity and income inequality. In Mexico, Perez-Gonzalez (2021) showed that foreign bank ownership and international corporate governance promote the overall productivity of manufacturing companies, especially those that rely on technological innovations driven by their parent companies. However, it is negatively linked to income inequality. This study aims to analyse the effect of capital account liberalization and foreign bank ownership on income inequality in BRICS countries by keeping this background in view.

2. Literature Review

Capital account liberalization in the neoclassical paradigm improves the international distribution of resources and has beneficial consequences. In industrialized economies with enough wealth, the margin is low, whereas in emerging economies with low invested capital, the return on capital is considerable. There are several ways to regulate the foreign exchange account: domestic banks' international credit limits and regulations on foreign currency volume in the economic system. Restrictions on industrial sectors wherein international investors can invest; and restrictions on the investors' ability to restore invested funds in the domestic economy. Capital account liberalization is a state decision to shift from a closed capital accounting system where capital cannot enter into an open capital accounting system inside and outside the country where capital can move in and out. On a generic level, two diverse schools of thought and viewpoints on the knowledge of capital account for liberalization as a strategy selection for emerging countries.

Levine (2021) pointed out that the theory makes vague predictions about the impact of Capital account liberalization and foreign bank ownership on income inequality. The influence of taxes on broader and larger rates may diverge. Inordinate interest is related to using financial facilities by persons who are not using such facilities. To illustrate, it can be stated that improving income may be supportive for deprived families to borrow money. Models vary in following this way. The outcome of economic progress on income discrimination is diverse. The development of the quality and scope of financial services has been found insignificant in the upsurge of access to financial services. However, there is a substantial and positive influence on the quality of already purchased financial services (Greenwood and Jovanović, 2021). The benefits of this moderate outcome extend to a wide range of the rich, increasing income distribution.

Capital account liberalization will increase domestic income, and therefore employment opportunities need to be created. The need for skilled workers will be greater than the need for un-skilled workers. This situation exacerbates inequality between expert and inexperienced employees. Wage inequality in accounting may be due to a reduced share of employment income. FDI allows investors to export their products to reduce production costs but can exacerbate income inequality by alleviation the share of employee pay. There are diverse studies about the Impact of Capital Account Liberalization on Income Inequality. Studies like (Castello-Climont, 2020; Clark, 2013; Doepke, 2000; Moav, 2019; Piroti, 1998) have found a negative relationship between capital account liberalization and income inequality, while on the contrary studies (Ahluvalia, 1996; Conbor, 2018; Sarkin, 2009) have found a positive relationship between capital account liberalization and income inequality. There are various thoughts

regarding the relationship between foreign bank ownership and income inequality. Studies (Aitken, 2017; Harrison, 2004) supported this relationship, while on the other hand, studies (Borenstein, 2018; Lee, 1995; Mello, 2017) have shown a negative relationship between foreign bank ownership and income inequality.

Bumann and Lensink (2016) established theoretic approaches to defining the part of capital account liberalization and foreign bank ownership in terms of marginal differences and income discriminatory effects. The classical believes that there are 2 economic factors: the investor and the return on savings, and the other is payment and investment for employers. Researchers have argued that financial independence generally makes banks more efficient, which reduces the cost of borrowing. The reshaping of the financial market will lead to higher prices. Increased savings can help the regulator accelerate earnings, closing the income division between lenders and, investors. However, countries with great financial depth have increased their mandate for credit due to very volatile credit levels. However, the opposite is also possible. For example, caregivers will accumulate savings when financial independence leads to economic transformation. Reducing stock prices leads to income inequality (De Han et al, 2010).

Different theoretical approaches for emphasizing conditional characteristics have been identified. Lower capital account liquidity volatility in countries with greater financial depth leads to income inequality. Even in economically strong countries (Agnello et al., 2012), investing in free accounts is risky. Many prior studies, like Furceri and Loungani (2018), have shown three main mechanisms between the consequences of financial liberalization and the implications of wealth distribution. The 1st medium is through the influence of monetary freedom on risk-sharing. Academically, the liberalization of investment accounts should increase opportunities for idiosyncratic global risk division and encourage internal consumption. However, the eminence of good financial establishments plays a vital part in exploiting these opportunities (Kaj, Prasad, and Tirone, 2021).

In nations with good financial institutions, free capitalization can decrease income variation and costs while minimizing economic transformation. Alternatively, in countries with equal access to high-quality financial institutions and credit, free access to accounts can lead to income inequality in a favorable environment without access to financial services. Another channel for the effects of financial relief, on the other hand, is that the financial predicament can reduce income gap driven by poverty, leading to a sharp decline in the value of goods leading to a decline in property values. Furthermore, if the economic crisis persists for an extended period, it will impend the well-being of the deprived. The 3rd is increasing FDI in emerging states (Applebaum, 1997). Releasing investments will increase the need for domestic investments and job creation. The need for skilled workers will be greater than the need for unskilled workers. This situation increases inequality between skilled and unskilled workers. Inequality of income due to accounting may be due to a small portion of operating income. FDI allows investors to release their products to reduce production costs but can increase income inequality by reducing workers 'wages (Cause, 2003).

3. Research Methodology

In this study, we have used an unbalanced panel dataset. The timeline was 1991-2020 and the BRICS economies (Brazil, Russia, India, China, and South Africa) were analysed. To measure the capital account liberalization data measurement, we have used the KAOPEN index, and for foreign bank ownership, we used the database of (Perotti, 2021). In the study, we used income inequality as independent variable and we measured through Gini Coefficient, while we took capital account liberalization as dependent variable and we measured through KAOPEN index while the foreign banks ownership was constructed through the database of Claessens and Van Horen (2014). We analysed per capita income, unemployment rate, inflation and population growth as controlled variables. In robustness analysis, a set of institutional quality variables such as corruption rating and government stability rating were included.

3.1. Empirical Model

We have designed the following econometrical model

$$Inequality_{it} = \alpha + \beta CAL_{it} + \gamma FBO_{it} + \delta X_{it} + \varepsilon_{it} \quad (1)$$

Where, t is time, i is country, $Inequality_{it}$ is income inequality of BRICS economies, CAL_{it} is capital account liberalization, FBO_{it} is foreign bank ownership, X_{it} is control variables, ε_{it} is the error term. Below is equation, which represents the static framework of baseline income inequality model:

$$Inequality_{it} = \mu_i + \delta_t + \beta (X_{it}) + \varepsilon_{it} \tag{2}$$

Where, $Inequality_{it}$ is income inequality of BRICS, X_{it} is vector of explanatory variables including both main variables of interest, "capital account liberalization" and "foreign bank ownership" δ_t is time-specific country invariant effect which captures the impact of shocks that influence inequality in several countries at the same time, μ_i represents the country-specific time-invariant effect, β is scalar vector of coefficients, $\beta_1, \beta_2, \dots, \beta_5$, and ε_{it} is the disturbance term with $var(\varepsilon_{it}) = \sigma_\varepsilon^2$ and $E(\varepsilon_{it}) = 0$ and $\varepsilon_{it} \approx IID(0, \sigma_\varepsilon^2)$. We have applied 2-step difference GMM and 2-step system GMM.

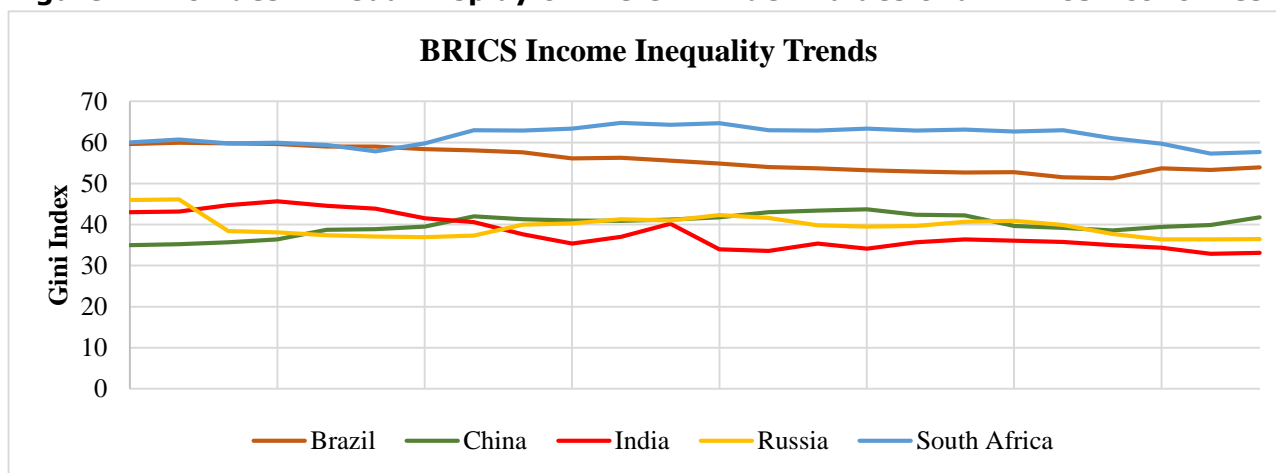
4. Empirical Results

The Table below has given the descriptive statistical summary of variables. As per the analysis, mean value of the Gini index of BRICS economies is 47.1, which relatively unequal distribution. The mean value report that, on average, South Africa has the highest Gini index value, followed by Brazil and China. In other words, South Africa has the highest income inequality among BRICS economies, while India has lowest.

Table 1: Comparative Analysis of Gini Index

Country Name	Mean	Standard Deviation	Observations
Brazil	42.6153	2.7847	30
China	54.1487	2.4080	30
India	38.2819	2.5972	30
Russia	39.7468	2.7818	30
South Africa	59.4788	2.4837	30

Figure 1: Provides A Visual Display of The Gini Index Values of all BRICS Economies



BRICS Income Inequality (1991-2020)

Table 2: Pairwise Correlation Matrix

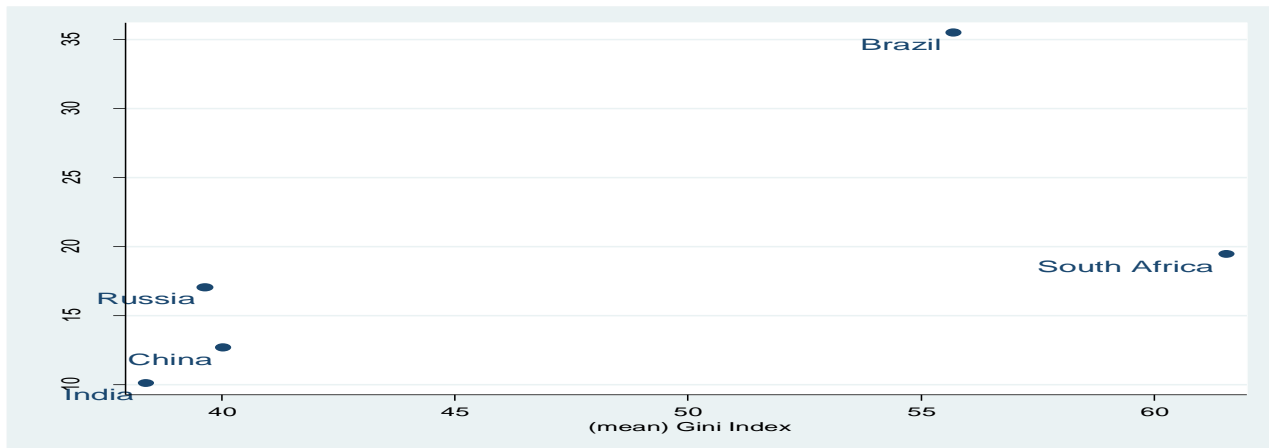
Variable Name	(1st)	(2nd)	(3rd)	(4th)	(5th)	(6th)	(7th)
(1) Gini Index	1						
(2) Foreign Bank Ownership	0.624*	1					
(3) Capital account Liberalization	-0.231*	0.486*	1				
(4) Per Capita Income	-0.489*	0.417*	0.325*	1			
(5) Unemployment Rate	-0.583*	-0.544*	-0.313*	0.283*	1		
(6) Inflation	-0.660*	0-.168	-0.373*	-0.609*	-0.408*	1	
(7) Population Growth	-0.139	-0.239	-0.166	-0.178	-0.349*	-0.144	1

Table 2 provides a correlation matrix detail. The correlation matrix reports that Foreign Bank Ownership is statistically positively and significantly correlated with income inequality,

proxy by Gini Index. On the other hand, it has been found that Capital Account liberalization is statistically significant and negatively correlated with income inequality.

Figure 2 provides the linkages between foreign banks ownership and income inequality among the undertaken BRICS economies. The figure below has a clear indication that higher average value of the Gini index of a country has a higher average value of foreign bank ownership.

Figure 2: Foreign Bank Ownership and Income Inequality



On the other end, Figure 3 has explored a connection between capital account liberalization and income differences in BRICS economies. However, this graph does not provide any clear picture of the association between the average values of both variables.

Figure 3: Capital Account Liberalization and Income Inequality

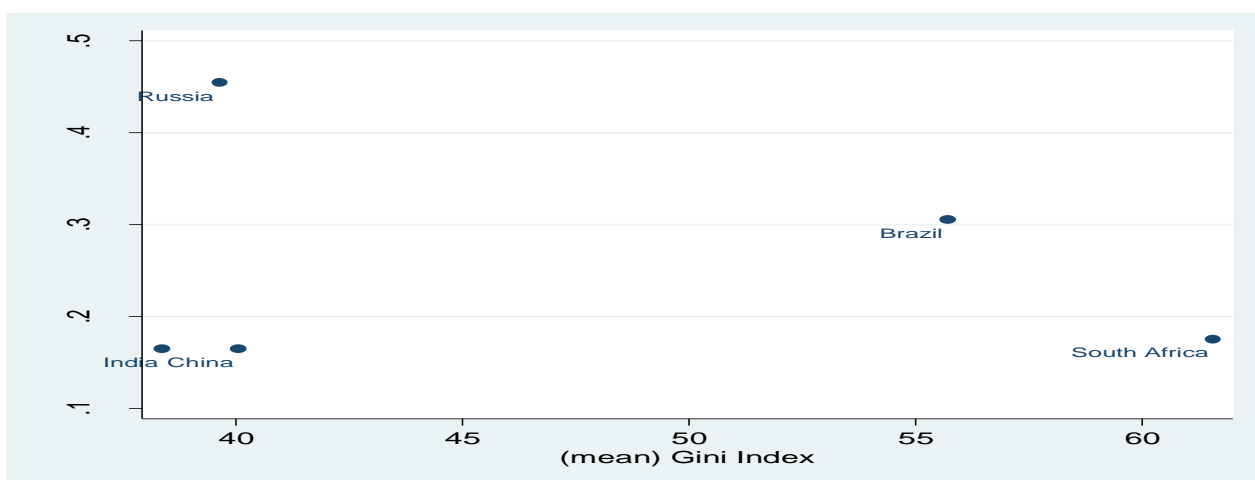


Table 3 has represented the estimated findings of the baseline model of the study as per the implementation of the Gini index as a dependent variable used as a substitution of income variation. Table 3 provides the estimated coefficients of our baseline model by using the distributional process (i.e., added one variable at a time to get a more robust picture) where model 1 includes only one explanatory variable and includes all variables containing independent and control variables.

For sensitivity analysis and a more robust picture of our previous findings, we employ alternative panel estimation techniques on our baseline model. The analysis has revealed the positive and substantial impact of foreign bank ownership on the income inequality and further the contrasting results also found which have revealed that there is a negative impact of capital account liberalization on income inequality.

Table 3: Baseline Panel Regression (Fixed Effects Model)

Explanatory Variables	Dependent Variable = Gini Coefficient	
	Model 1	Model 2
Variables of Interest		
Foreign Bank Ownership	0.3158** (0.2317)	0.2562* (0.2116)
Capital Account Liberalization	-2.7993* (3.7015)	-6.4277*** (3.1874)
Control Variables		
Per Capita Income		11.2762*** (2.8899)
Unemployment Rate		-0.4569*** (0.2232)
Inflation		-0.1007 (0.2576)
Population Growth		0.16466** (0.1687)
Constant	46.7788*** (2.2784)	-66.8457*** (21.3916)
Time Effects	Yes	Yes
Prob>F	[0.0000]	[0.0000]
R-Squared (within)	0.249	0.765

Table 4: Alternative Panel Estimation Techniques (Pooled OLS and Random Effects)

Explanatory Variables	Dependent Variable = Gini Coefficient	
	Model 3	Model 4
	Pooled OLS	Random Effects
Variables of Interest		
Foreign Bank Ownership	0.5262*** (0.0574)	0.5262*** (0.0574)
Capital Account Liberalization	-5.3718** (4.2949)	-5.3718** (4.2949)
Control Variables		
Per Capita Income	0.3384 (2.8537)	0.3384 (2.8537)
Unemployment Rate	-0.5699** (0.2898)	-0.5699** (0.2898)
Inflation	0.6318*** (0.0733)	0.6318*** (0.0733)
Population Growth	0.0534 (0.0545)	0.0534 (0.0545)
Constant	27.5571 (21.1818)	27.5571 (21.1818)
Time Effects	Yes	Yes
Prob > F	[0.0000]	[0.0000]
R-Squared (within)	---	0.348
Adjusted R-Squared	0.9814	---
Hausman Test	---	135.55
P-Value	---	[0.0000]

4.1. Robustness Analysis

The analysis has found that the key results have no inclination of modification with the usage of alternative econometrical estimation techniques, alternative income inequality measurement, i.e., income distribution by quintiles, or more control variables measuring corruption and institutional quality.

Table 5: Arellano-Bond Approach vs. Arellano-Bover Approach

Explanatory Variables	Model 5		Model 6	
	Arellano-Bond Approach		Arellano-Bover Approach	
	Coefficient	S.E	Coefficient	S.E
Lagged Term				
Gini (t – 1)	0.75821***	(0.05771)	0.73532***	(0.05034)
Variables of Interest				
Foreign Bank Ownership	0.09384***	(0.03141)	0.15342***	(0.04376)
Capital Account Liberalization	-1.63419***	(0.22640)	-2.53426**	(1.19061)
Control Variables				
Per Capita Income	1.20050***	(0.44335)	1.89801**	(0.92183)

Unemployment Rate	0.02490	(0.02636)	-0.09018	(0.06955)
Inflation	0.08674	(0.09279)	0.07819	(0.05062)
Population Growth	-0.01220*	(0.00675)	-0.03040*	(0.01774)
Constant	168.84550**	(69.7428)	31.18245***	(10.5499)
Time Effects	Yes	---	Yes	---
Prob>F	---	[0.0000]	---	[0.0000]
Wald (Joint) Test	118.04	[0.0000]	1117.6	[0.0000]
AR2 Test (p-value)	---	[0.3981]	---	[0.9352]

Table 5 report the GMM based estimated coefficients in case of Gini index as a dependent variable. Results suggest that income inequality is divergent across BRICS economies, the early inequality level is statistically significant and positive.

4.2. Income Distribution by Quintiles

Results indicate that foreign bank ownership has no significant impact or plays no role in defining the richest quantile of national income distribution in BRICS economies.

Table 6: Sensitivity Analysis: Alternative Definition of Income Inequality Variable

Explanatory Variables		Dependent Variable = National Income Proportion held by Richest Quantile				
Variables of Interest		Model 7	Model 8	Model 9	Model 10	Model 11
Foreign Bank Ownership	Bank	0.0469 (0.0913)	0.0687 (0.0889)	0.0799 (0.0901)	0.0792 (0.0845)	0.0469 (0.0913)
Capital Account Liberalization	Account	-5.5272*** (1.9397)	-3.1911** (1.9052)	-3.3674** (1.7648)	-3.6606** (1.7395)	-5.5272*** (1.9397)
Control Variables						
Per Capita Income		0.0309 (0.0296)	0.0341 (0.0279)	0.0284 (0.0282)	0.0292 (0.0283)	
Unemployment Rate			2.1908*** (0.7500)	2.3872*** (0.7650)	2.2988*** (0.7767)	
Inflation				0.0657 (0.0548)	0.0647 (0.0551)	
Population Growth					-0.0135 (0.0179)	
Constant		-27.383 (20.731)	-33.009* (21.402)	-32.127* (20.175)	-34.896** (20.233)	-31.884 (20.698)
Time Effects	Yes	Yes	Yes	Yes	Yes	Yes
Prob > F		[0.0000]	[0.0000]	[0.0000]	[0.0000]	[0.0000]
R-Squared (within)		0.54	0.55	0.62	0.63	0.64

Note: *** means significant at 1s%, ** at 5%, and * at 10% level of significance

However, capital account liberalization has been found with the positive impact and adverse impact on the wealthiest quantile of the national income distribution, suggesting that these kinds of financial developments can help to reduce the national proportion held by the top 20% of the economy.

Table 7 provides the estimated coefficients of this robustness check with the outcome variable of the research which is Gini index. The analysis has found that there is a positive effect of foreign bank proprietorship on the income inequality but on the contrary, there have been found a negative impact of Capital Account Liberalization on income inequality.

Table 7: Role of Institutional Quality in Income Inequality (Fixed Effect Method)

Explanatory Variables	Dependent Variable = Gini Coefficient	
	Model 15	Model 16
Variables of Interest		
Foreign Bank Ownership	0.1441*	0.2089*
Capital Account Liberalization	-7.3166***	-8.983***
Control Variables		
Per Capita Income	10.1651***	12.510***
Unemployment Rate	-0.3458***	-0.2481**
Inflation	-0.0996	-0.1429
Population Growth	0.0536**	0.0284
Institutional Quality		

Corruption		-0.5462**
Government Stability		0.0980
Constant	-67.9377***	-83.1371
Time Effects	Yes	Yes
Prob>F	[0.0000]	[0.0000]
Number of Groups	5	5
Number of Observations	120	120
R-Squared (within)	0.674	0.75
Hausman Test	---	137.8
P-Value	---	[0.0000]

5. Conclusion and Policy Implications

The influence of economic upturn on income inequality has been gaining growing consideration for the last couple of decades. This research study examining capital account liberalization and foreign banks ownership can help reduce income inequality among BRICS economies, focusing on capital account liberalization and foreign banks requests. It implies that financial liberalization from capital account openness perspectives alleviates income inequality. While the presence of foreign banks ownership in the BRICS domestic market significantly increases the income inequality.

This research has some caveats that remain for future research. It would be excellent to access more balanced panel data over the broader period, allowing for unobserved effects in the model. We recognized that the mechanism of foreign banks ownership and capital account liberalization affecting the distribution of national income. Also, it would be interesting to check that the findings proposed in this study are robust in other datasets from European and advanced economies.

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