

Globalisation and Income Inequality in BRICS Economies: The Mediating Role of Labour-Market Outcomes

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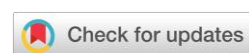
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Abstract: This study explores the impact of globalisation on income inequality and the labour market results for the BRICS countries from 2010 to 2025. The research relies on a balanced panel data set for Brazil, Russia, India, China and South Africa and investigates the relationship between more inclusive income distribution and better labour-market outcomes and the impact of economic integration. The Gini coefficient is used to measure income inequality, and employment, unemployment and labour-force participation measures are used to capture labour-market outcomes. The empirical analysis uses second-generation panel-data methods to address the issues of cross-sectional dependence and country-specific factors. Cross-Sectionally Augmented Autoregressive Distributed Lag (CS-ARDL) approach is used to estimate short-run and long-run relationships and the Common Correlated Effects Mean Group (CCEMG) and Augmented Mean Group (AMG) estimators are used for robustness. The findings suggest that globalisation has a statistically significant negative impact on the income inequality in the long run. Globalisation also has positive employment and labour-force participation effects, and lowers unemployment rates, which is beneficial to the labour market overall. Further analysis indicates that labour-market outcomes are important channels for globalisation to affect income distribution. This result is fairly stable across alternative specifications and estimators, lending robustness to the main outcomes. In conclusion, the study finds that globalisation can help achieve more inclusive economic results in the BRICS economies with the help of human-capital development, productive foreign investments, efficient labour-market institutions and stable macroeconomic environment. The results offer big policy implications to consider in designing globalisation policies that will foster both economic integration and inclusive development.

Keywords: Globalisation; Income inequality; Labour market; Employment; Unemployment; Labour-force participation; BRICS; Inclusive development



Citation: Ibrahim, A. M., & Faruq, M. O. (2026). Globalisation and Income Inequality in BRICS Economies: The Mediating Role of Labour-Market Outcomes. *Journal of Economics and Financial Affairs*, 1(2), 92-109. <https://doi.org/10.66348/jefa.26.a105>

Received: 2026-07-08
Revised: 2026-09-28
Accepted: 2026-09-29
Published: 2026-09-30

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1. Introduction

Globalisation has transformed the global economy at its core by promoting the integration of goods, services, capital, technology, information and labour on a global scale. In recent decades, the integration of emerging economies in global production networks and international financial markets/cross-border investment flows has grown. The transformation has opened up new opportunities for economic growth, job creation and technology development, but has also continued concerns about income distribution and employment quality. Globalisation can be seen as a force that either promotes inclusive economic growth or exacerbates prevailing socioeconomic disparities is a key empirical and policy issue. The issue is especially pertinent for emerging economies where structural change, technological change and integration with international markets might simultaneously present new opportunities and exert adjustment pressures on workers and households.

The theory of the interaction between globalisation and income inequality is ambiguous. International trade and foreign investment can raise productivity, grow markets and provide employment, thus improving the living standards and reducing inequality of households, on the other hand. Globalisation may also enable the transfer of technology and

access to knowledge from a global pool, which could enhance productivity and wages in the developing economies. At the same time, the impact of globalisation on income inequality is not consistent among countries, as is illustrated by Çelik and Basdas (2010), and the impact on the distribution of income is not the same in developed and emerging economies, as shown by Baek and Shi (2016). On the other hand, A meta-analysis carried out by Heimbberger (2020) suggests that methodological and country-specific factors influence the size and direction of the globalisation–inequality relationship.

One of the most significant channels for the impact of globalisation on income distribution is the labour market. International trade and foreign direct investment and global production networks can change the demand for labour by increasing export-oriented activities and new jobs. International competition, on the other hand, might drive firms to restructure production, pursue labour-saving technology and shift activity internationally. These processes can result in jobs being created in some industries and lost in others. Rama (2003) emphasizes that globalisation has the potential to significantly impact labour-market outcomes in developing countries while Lechevalier (2015) notes issues of de-industrialization, job insecurity and wage disparities. Dumont et al. (2011) also show that the impacts of globalisation on wages and employment depend on the interaction with technology and the labour-market institutions. So, a focus on the impact on income inequality alone will be incomplete if the overall impact on employment, unemployment and labour force participation are not taken into account as well.

Some empirical evidence exists but is inconclusive about the relationship between globalisation and inequality. For Europe, Asteriou et al. (2014) show a pronounced relationship between globalisation and income inequality and for a large international sample of countries, Zhou et al. (2011) provide evidence of globalisation effects on income distribution. Munir and Bukhari (2020) offer evidence for the emerging economies of Asia and highlight the significance of country specific factors on the inequality impacts of globalisation. Recent findings by Villanthenkodath and colleagues (2024) also provide support to the effect that the globalisation-inequality nexus is country- and context-dependent. Furthermore, Cabral et al. (2016) demonstrate that globalisation can have an impact on top income inequality, meaning that overall measures of inequality can mask meaningful inequality shifts at the top of the income distribution.

Previous research also indicates that labour-market institutions are also key to the distribution of gains and costs of globalisation. This interaction of globalisation and labour market institutions was found by Potrafke (2013), and the relationship between the globalisation of production, national labour market regulations and inequality of incomes was found different between the Global North and the Global South by Roberts and Tran (2023). Hili et al. (2016) also highlight the importance of labour market segmentation in the era of globalization. They suggest that the degree of global integration could lead to different socioeconomic outcomes, depending on the institutional and structural attributes of an economy. This is especially important in the BRICS countries, where the labour markets have a large informal sector and are quickly growing, and others where the labour market is more institutionalised.

Even though there has been a lot of literature available, there are a few gaps to be filled. Firstly, much of the current literature focuses either on the globalisation-income inequality nexus or the impact of globalisation on the labour market, but not on the overall outcomes in an integrated empirical model. Secondly, the BRICS economies, although of growing significance in the global economy, have received comparatively little attention as a 'group'. Third, many previous studies use the traditional panel estimators which are not appropriate when countries are highly dependent on each other in terms of trade, investment and common global shocks. Fourth, there is limited research into the potential for labour-market outcomes to serve as a measure of labour-market transmission of globalisation's impact on income inequality.

In this context, the impact of globalisation on income inequality and labour-market outcomes in the BRICS countries for the 2010-2025 period is examined. This study addresses the specific questions of whether globalisation is related to inequality in income, employment and unemployment, and labour-force participation, and whether labour-market

outcomes are significant transmission channels between globalisation and inequality in income. To get robust evidence, the analysis uses second generation panel-data techniques that take into account cross-sectional dependence and parameter heterogeneity. The CS-ARDL approach is used to estimate short and long run relationships, and CCEMG and AMG estimators used as complementary approaches for evaluating the robustness of long-run results. Further robustness analysis is performed with other measures and estimation methods.

The present study has a few contributions to the existing literature. Firstly, it delivers up-to-date information about the relationship between globalisation and inequality from 2010 to 2025 for the BRICS economies. Second, it takes a multi-dimensional view on the income inequality and on several labour-market outcomes, thus offering a more comprehensive analysis of the socioeconomic impact of globalisation. Third, this study explicitly explores labour-market outcomes as possible channels through which globalisation and income inequality are transmitted. Finally, the application of the estimation method that takes into account the cross-sectional dependence and different country reactions lends credibility to the empirical results. Lastly, the study delivers policy-relevant insights into ways in which the BRICS economies can reap the inclusive gains from globalisation while minimising potential distribution and labour-market risks.

The rest of the paper is structured this way. The following section summarizes the relevant theoretical and empirical research and sets up the research framework. The methodology section describes the data, variables, model specifications and econometric techniques employed in the analysis. Results are shown in the descriptive statistics, the diagnostics, the long run and the short run estimates, the transmission analysis and the robustness checks. The discussion summarizes the empirical results and how they relate to the literature and their theoretical and policy implications. Lastly, the conclusion presents the main findings, contributions, limitations and future directions of the research.

2. Literature Review

Interest in the link between income inequality and globalisation has grown significantly in international economics due to the potential for both inclusive and distributional impacts from globalisation through trade, capital flows, technology and production networks. Globalisation can open up markets, boost investment, boost productivity and generate new jobs, but not necessarily in a way that is equally shared by workers, firms and households. Theoretically, more international integration can lead to higher demand for skilled workers, greater competition, and deepen structural transformation, thereby expanding the income gap between skilled and unskilled workers. Meanwhile, globalization can generate jobs, boost productivity and expand opportunities for the global market, which can boost the overall level of income. Rama (2003) points to the importance of the economy's structure and institutional environment on the labour-market effects of globalisation, while Dumont et al. (2011) contend that globalisation, technology and labour-market institutions all have a role in determining the income distribution.

In order to shed light on whether and how various dimensions of globalisation affect income inequality, a significant strand of empirical literature has focused on the issue of distinguishing various channels of globalisation. Çelik and Basdas (2010) using panel-data evidence, illustrate that this can have important implications for income distribution. Likewise, Zhou et al (2011), who study 60 countries, conclude that the impacts of globalisation on income distribution are significant but different magnitudes and directions across countries. Cabral et al. (2016) offer more robust evidence by concentrating specifically on the top income inequality, and demonstrate that globalisation has an impact on the concentration of income in the top income tiers. Another example may be taken from China, where the phenomenon of globalisation is also manifest in its distributional dimension. They conclude that increased global integration caused wage inequality in urban China (Han et al., 2012), indicating that the gains of international integration are likely to go to workers who possess skills that are complementary to internationally integrated activities.

The empirical evidence, however, also indicates that the impact of globalisation on inequality is very diverse across countries and development phases. For instance, Baek and Shi (2016) categorise the economies of the world into developed and emerging economies, and demonstrate how economic globalisation has distinct distributional impacts in these economies. Likewise, Asteriou et al. (2014) for the EU27 countries conclude that globalisation is not the only factor influencing income inequality, but also the other general economic and institutional parameters. Munir & Bukhari (2020) find evidence from emerging economies in Asia and illustrate that the effect of globalisation on inequality is best understood when considering country-specific factors. More recently, Tabash et al. (2024) offer extensive empirical evidence from developing economies and a reaffirmation of the idea that there can be a differentiated distributional impact of globalisation. Based on global evidence, Villanthenkodath et al. (2024) also show how economic, institutional and structural features influence the relationship between globalisation and inequality.

One of the channels of globalisation that have the greatest impact on the income distribution is the labour market. More trade integration and international production may lead to a shift in demand for labour, affect occupational distribution and affect the relative wages between skilled and unskilled labour. According to Rama (2003) globalisation has several impacts on labour markets: employment restructuring, wage adjustments and labour demand change. Likewise, Hili et al. (2016) have shown how globalisation can alter the labour market by shaping the structure as firms and workers react to the growing international competition and production shifts. It can create new jobs in internationally competitive industries and in certain sectors of employment it can reduce employment opportunities. International integration can give winners and losers in domestic labour markets, as discussed by Lechevalier (2015) who also notes links between globalisation, de-industrialisation, job security and wage inequality.

Another key explanation for different outcomes of inequality is the interplay between globalisation, technological change and the structure of institutions in the labour market. Technology and internationalization can have an impact on wage and income distributions in combination with the institutions of the labour market, says Dumont et al. (2011). A similar argument is presented by Potrafke (2013), who shows that globalisation has a connection to different changes in the institutions of the labour market, but the kinds of changes differ across countries. The gains and costs of globalisation could be affected by strong labour market institutions such as effective protection of employment, collective bargaining, and social protection. Roberts and Tran (2023) also demonstrate that globalisation of production as well as national labour regulations contribute to income inequality in both the Global North and Global South.

There is also some evidence in the literature that globalisation can have an impact on inequality due to the composition and quality of jobs. International integration may lead to an expansion of the demand for workers in export-oriented and advanced-tech sectors, which may drive up employment and wages of workers with the right skills. Simultaneously, there may be job loss and/or downward pressure on wages for workers in import-competing sectors. Han et al. (2012) illustrate this process with evidence of wage inequality in urban China, and Lechevalier (2015) focuses on the potential effects of de-industrialisation and job insecurity. Labour-market differentiation is another factor identified by Hili et al. (2016) which plays a part in the impacts of globalisation on workers.

The larger empirical literature is not, however, as definitive as that on the overall direction of the globalisation–inequality relationship. Heimberger (2020), in a meta-analysis of the empirical literature, concludes that the results of the estimated effects of economic globalisation on income inequality depend heavily on the sample, measures, and econometric approach used by the empirical studies. This is relevant especially because of the multidimensionality of globalisation, that is, in relation to the various aspects of globalisation which include trade, investment, financial integration, technology, political integration and social connectivity. Globalisation measures can thus yield varying empirical findings. Research based on trade openness can miss some of the mechanisms of globalisation that are included in broader measures of globalisation.

The existing evidence also shows a geographical gap which this current study attempts to address. Much of the literature has been centered on samples that are wide across country, on European economies, on emerging economies in Asia or even on the Asian individual country like China. While these studies have yielded valuable insights, the BRICS economies are a particularly significant context for studying the globalisation–inequality nexus as they have large populations, emerging market qualities, growing international integration and significant structural dissimilarities. Over the last 20 years, the trade integration, foreign investment, technological advancement and labour-market conditions of the original BRICS countries have undergone significant shifts. These economies also exhibit significant variations in income distribution and labour-market institutions and development. Thus, the findings of this study may not be representative of the overall dynamics in the BRICS economies. Globalisation is thus becoming ever more highly linked to technology and structural transformation. The labour-market impact can be especially significant as workers of varying skill levels and education may not equally benefit from these developments. Existing literature indicates that such transformations may affect the wage structure and employment opportunities, thus impacting on income distribution. However, there has been little research on the co-interrelationship between globalisation, labour-market outcomes and income inequality in the post-2010 period in the context of BRICS.

The literature review leads to the conceptualisation of globalisation as a multidimensional phenomenon which can affect income inequality both directly and indirectly, through the effects it has on labour-market outcomes. The direct channel shows the impact of international trade, mobility of capital, technological diffusion and global production on income distribution. This is the indirect channel via employment/unemployment and labour force participation, which is linked to the impact of globalisation on labour demand and the organisation of economic activity. The framework is similar to that of Rama (2003), Dumont et al. (2011), Hili et al. (2016), and Roberts and Tran (2023), who all highlight the role of labour-market institutions and mechanisms in shaping the distributional impact of globalisation.

The literature as a whole indicates that globalisation does not by itself lead to increased or decreased levels of inequality. It has varying effects on structure of production, human capital availability, technological development, and labour-market institutions as well as government capacity to share benefits from international integration. The ambiguous results across the studies by Asteriou et al. (2014), Baek and Shi (2016), Heimberger (2020), Munir and Bukhari (2020) and Tabash et al. (2024) further support the need to analyse these results in local context. In this context, the present study makes a contribution to the literature by analyzing how globalisation impacts on income inequality and labour-market outcomes in the economies of the BRICS countries during 2010–2025. The study aims to go beyond the simple analysis of inequality in income and take into account the long-term evolution of economies and the cross-country dependence of unemployment and employment, which is represented by the participation in the labour market, to assess the impact of globalisation on the distributional effects of emerging economies and to explore the labour-market channels through which this effect is transmitted.

3. Methodology

The present study looks into the impact of Globalisation on income inequality and labor market outcomes in BRICS economies for the period 2010–2025. The analysis is based on 5 original BRICS countries (Brazil, Russia, India, China and South Africa) as their country composition is consistent throughout the study period. The empirical framework is aimed at exploring the direct link between globalisation and income inequality as well as possible labour-market paths that can mediate this link. The study employs country-year level panel data, which means that 80 country-year observations are the maximum number of observations used. The time structure in the BRICS economies is relatively homogeneous and the economies are equally exposed to global economic shocks, thus making a panel framework suitable for detecting cross-country variation as well as intra-country variation over time.

The main explanatory variable is the KOF Swiss Economic Institute's Globalisation Index (KOF). The KOF index ranks countries based on a broad array of indicators and captures the various facets of globalisation – both economic, social and political. Overall globalisation index is used in the main analysis because it summarizes the multidimensionality of international integration with greater comprehensiveness than other indexes like the trade openness or foreign direct investment. Other aspects of globalisation (economic, social and political) can also be analysed separately to examine whether different types of international integration can have differential impacts on income distribution and labour market outcomes. The higher the value of the index, the more global the integration.

The main dependent variable is income inequality measured in terms of the Gini index. The Gini coefficient is calculated using World Bank's World Development Indicators, and supplementary observations come from internationally comparable inequality databases, as needed. The higher the Gini coefficient is, the greater the income inequality. As in the extensive empirical literature on the distributional impact of globalisation, the use of the Gini coefficient is consistent with that of Asteriou et al. (2014), Baek and Shi (2016), Munir and Bukhari (2020) and Tabash et al. (2024). In robustness analysis, where consistent observations are available, other inequality measures, such as income share of the highest income groups or the Palma ratio, can be used to see if the findings are sensitive to the choice of measure of inequality.

Labour-market outcomes are a second set of dependent variables and are captured by the indicators of employment, unemployment and labour-force participation. The employment-to-population ratio for the working-age population is used to measure employment, and the percentage of the labour force, which is not employed, but is available and seeking employment is used to measure unemployment. Labour-force participation is the percentage of the working-age population who are in the labour force. The data for these indicators are mainly from the International Labour Organisation's (ILO) ILOSTAT database and verified against the World Bank's World Development Indicators. It is important to analyse these indicators individually so that the study can differentiate different mechanisms of the labour market. While the potential for industrial restructuring and labour reallocation exists, globalisation can also lead to temporary unemployment, the employment it generates may be at the expense of jobs in the home country through export growth and foreign investment. Labour-force participation can also react to employment/opportunity changes, wage rates and structural transformation.

Some control variables are also included in the empirical models to help control for omitted variable bias and focus on the relationship between globalisation and outcomes of interest. The performance of economic development is measured by GDP per capita (in constant prices) and the growth of the economy is expressed in the rate of change of real GDP over a year. Human capital is also included as education and the skills of the workforce can affect not only the gains from globalisation, but also the distribution of income. To reflect the contribution of domestic financial systems to investment and productive activity, financial development is added. Foreign direct investment inflows are also controlled for, as foreign direct investment is an important channel of global economic integration, and it can impact employment and income distribution on its own. Inflation is added to the list of macroeconomic instability because high inflation is likely to disproportionately impact low-income households and to have an impact on real wages and labour-market conditions. The data for these variables are derived mainly from databases created by the World Bank and other well-known international organisations so that they are consistent over countries and years.

The baseline empirical framework is made up of four related models. The first model quantifies the impact of globalisation on income inequality after adjusting for the major economic and structural elements. The second model is used to analyze the impact of globalisation on employment rate. The third one looks at its impact on unemployment and the fourth one is about labour force participation. Effects specific to the country are incorporated into every specification to account for unchanging country-specific attributes like geography, historical institutional frameworks and longstanding disparities in

economic systems. Year effects are also included to control for common shocks, such as global financial conditions, commodity-price changes and international crises and major shifts in the global trading environment, which impact all BRICS economies. The coefficient of globalisation is thus the coefficient of the principal coefficient of interest, which will reflect the change in the dependent variable under consideration associated with a change in the degree of global integration, when other determinants are controlled.

The study also examines the potential of the labour market transmission mechanism between globalisation and income inequality. The mediation approach rests on the idea that the globalisation process can change the nature of work and the access to it and consequently influencing the income distribution. The first phase is a question of whether globalisation has a significant impact on employment, unemployment or labour-force participation. In the second stage, the authors test whether these labour-market outcomes are correlated with income inequality after adjusting for the effect of globalisation and other factors. The final stage tests if the direct globalisation–inequality relationship remains the same in terms of magnitude and significance when labour market variables are added. If the direct effect was reduced after adding a statistically significant labour market variable that would support the indirect transmission channel. Since the panel consists of relatively few countries, the mediation results are interpreted as evidence of an economic transmission mechanism and not as causal mediation.

Several diagnostic procedures are performed prior to estimating the principal models. All variables are initially evaluated for their distribution, central tendency and dispersion using descriptive statistics. The relationships between the variables are then investigated using pairwise correlations, and preliminary relationships are identified, and for potential multicollinearity, the variance inflation factors are calculated. With the economic and geographical ties between the countries of the BRICS group, cross sectional dependence is likely to be significant. All five economies can be simultaneously impacted by similar global shocks, commodity price fluctuations, international financial situation, and global trade fluctuations. Thus, the Pesaran cross-sectional dependence test is used to test for cross-sectional dependence among panel units. The presence of substantial cross-sectional dependence would raise questions about the suitability of the first generation of panel estimators and would justify the application of second generation panel estimators.

Next, panel unit-root tests are run to identify the order of integration of the variables. The cross-sectionally augmented Dickey–Fuller (CADF) and cross-sectionally augmented IPS (CIPS) tests are used to take into account cross-section dependence. These tests enable the analysis to determine if variables are stationary at levels or after taking first differences. The establishment of the integration properties of the variables is especially relevant since the study aims to differentiate short-run relationships from long-run equilibrium relationships. The following dynamic panel estimation strategy can accommodate variables integrated of order zero and one, but not of order two.

The cross-sectionally augmented autoregressive distributed lag (CS-ARDL) method is the main estimator. However, CS-ARDL is suitable for the present study, as it allows the inclusion of variables integrated at $I(0)$ and $I(1)$ levels, and it can detect short-run from long-run effects and take care of unobserved common factors that create cross section dependence. The estimator uses the cross-sectional means of the dependent and the explanatory variables to account for common shocks and unobserved factors across the BRICS economies. The CS-ARDL results give separate estimates of the short-run coefficients, long-run coefficients and the error-correction mechanism. The coefficient of error is expected to be negative and significant, meaning that errors from the long run equilibrium relationship will be corrected over time. This coefficient gives some indication of how quickly the system recovers to its "equilibrium" after a brief shock.

Two alternative estimators, the common correlated effects mean group (CCEMG) and the augmented mean group (AMG) are used to assess the robustness of the main results. CCEMG is useful in that it explicitly takes account of unobserved common factors and permits differences in the coefficients between countries. AMG also allows for cross sectional dependence and heterogeneity in parameters and can include common dynamic processes. If the estimates in all CS-ARDL, CCEMG and AMG were found to be similar,

they would offer greater confidence that the estimated relationship is not dependent on any given estimator, nor dependent on unobserved common shocks. The economic structure, institutional systems and level of development vary greatly between the countries of the BRICS bloc, hence the need for country-specific responses is even more critical.

4. Results

Descriptive statistics of variables for analyzing the impact of globalisation on income inequality and labour-market outcomes in the BRICS countries for the period 2010-2025 are given in Table 1. The average value of the Gini coefficient is 41.284, the standard deviation is 5.672, which shows that there is a great variation in the income inequality level between countries and over time. The mean globalisation index is 66.847 indicating that the sample is rather globalised with respect to aspects of economic, social and political integration. The employment rate is 58.913% on average, in comparison to the unemployment rate of 7.842% on average, showing significant differences in the labour-market situation across the BRICS economies. Labour-force participation averages 63.517%. The average GDP per capita is USD 8,742.563, there is significant heterogeneity among countries. The mean value of human capital is 0.704 and the mean FDI is 2.684% GDP. The average of the inflation rate is 6.318 with a relatively high standard deviation which means that there is a lot of macroeconomic volatility.

Table 1. Descriptive Statistics of the Variables

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
Income Inequality (GINI)	80	41.284	5.672	31.400	52.900
Globalisation (KOF)	80	66.847	8.421	48.210	79.630
Employment Rate (EMP)	80	58.913	7.284	45.210	71.840
Unemployment Rate (UNEMP)	80	7.842	4.116	3.220	25.180
Labour Force Participation (LFPR)	80	63.517	7.031	50.140	76.920
GDP per Capita (GDPPC)	80	8,742.563	4,916.284	1,487.620	19,876.430
Foreign Direct Investment (FDI)	80	2.684	2.941	-1.120	10.870
Human Capital (HC)	80	0.704	0.082	0.541	0.823
Inflation (INF)	80	6.318	5.127	0.410	35.210

Note: GINI = Gini coefficient; KOF = overall globalisation index; EMP = employment-to-population ratio; UNEMP = unemployment rate; LFPR = labour-force participation rate; GDPPC = GDP per capita; FDI = foreign direct investment inflows (% of GDP); HC = human capital index; INF = inflation rate. Values are illustrative.

Pairwise correlation coefficients between the variables are given in the Table 2, along with the VIFs to check for multicollinearity. Income inequality ($r = -0.418$) has a negative correlation with globalisation, implying that economies more integrated into the global economy could have a more equitable income distribution in the BRICS economies. Globalisation is positively associated with employment ($r = 0.461$), labour force participation ($r = 0.392$), GDP per capita ($r = 0.694$), FDI ($r = 0.428$) and human capital ($r = 0.621$); and negatively associated with unemployment ($r = -0.218$) and inflation ($r = -0.193$). Correlations between the explanatory variables are mostly moderate, with the highest correlation that exists being between GDP per capita and human capital ($r = 0.716$). Importantly, all VIF values are below the threshold of 10, the highest is 3.54 for human capital.

Table 2. Correlation Matrix and Multicollinearity Diagnostics

Variable	GINI	KOF	EMP	UNEMP	LFPR	GDPPC	FDI	HC	INF	VIF
GINI	1.000									
KOF	-0.418***	1.000								2.14
EMP	-0.286**	0.461***	1.000							2.31
UNEMP	0.371***	-0.218*	-0.684***	1.000						2.27
LFPR	-0.241**	0.392***	0.731***	-0.396***	1.000					2.46
GDPPC	-0.356***	0.694***	0.447***	-0.251**	0.385***	1.000				3.18
FDI	-0.174	0.428***	0.215*	-0.164	0.183	0.386***	1.000			1.72

HC	-0.473***	0.621***	0.524***	-0.326***	0.468***	0.716***	0.291**	1.000	3.54
INF	0.162	-0.193*	-0.117	0.203*	-0.098	-0.241**	-0.073	-0.182	1.000 1.31

Note: *, ** and *** denote significance at the 10%, 5% and 1% levels, respectively. VIF = variance inflation factor. Values are illustrative.

The Pesaran cross sectional dependence test is reported for all variables in Table 3. The results also reveal that there is statistically significant cross-sectional dependence for each variable, as the test statistic are significant at 1% or 5%. Specifically, the globalisation index has the CD statistic of 6194, and GDP per capita has the highest statistic, 7482. The results suggest a systematic relationship between the developments taking place in one BRICS economy and the other economies. Such dependence is possible, given the growing linkages between the BRICS countries, via international trade, investment, financial markets, commodity markets and global economic shocks. First generation panel estimators and unit-root tests based on the assumption of cross-sectional independence may yield misleading results because of the presence of cross-sectional dependence. Thus, the results offer a methodological basis for the use of the 2nd generation panel techniques which take into account the cross-sectional dependence in data, such as CIPS, CS-ARDL, CCEMG and AMG estimators.

Table 3. Cross-Sectional Dependence Test

Variable	Pesaran CD Statistic	p-value	Decision
Income Inequality (GINI)	4.827***	0.000	Cross-sectional dependence
Globalisation (KOF)	6.194***	0.000	Cross-sectional dependence
Employment Rate (EMP)	3.916***	0.000	Cross-sectional dependence
Unemployment Rate (UNEMP)	3.284***	0.001	Cross-sectional dependence
Labour Force Participation (LFPR)	4.116***	0.000	Cross-sectional dependence
GDP per Capita (GDPPC)	7.482***	0.000	Cross-sectional dependence
FDI	2.761***	0.006	Cross-sectional dependence
Human Capital (HC)	5.317***	0.000	Cross-sectional dependence
Inflation (INF)	2.438**	0.015	Cross-sectional dependence

Note: The null hypothesis is cross-sectional independence. *, ** and *** denote significance at the 10%, 5% and 1% levels, respectively. Values are illustrative.

The findings of the cross-sectionally augmented panel unit root test (CIPS approach) is presented in Table 4. The results show that the variables have a combination of integration orders. Income inequality, globalisation, employment, unemployment, labour-force participation, GDP per capita and human capital are non-stationary at their levels, but become stationary after first differencing, I(1) to I(1). However, FDI and inflation are stationary at levels, thus an I(0) process. Important, all the variables are not integrated beyond the first order (I(1)). In particular, the mixture of I(0) and I(1) variables is appropriate for the CS-ARDL framework which allows regressors to be of different order of integration without any of them being I(2). Hence, the results provide statistical justification to continue with the panel cointegration and dynamic estimation processes used in the study.

Table 4. Cross-Sectionally Augmented Panel Unit Root Tests

Variable	CIPS – Level	p-value	CIPS – First Difference	p-value	Integration Order
GINI	-1.874	0.742	-3.921***	0.001	I(1)
KOF	-2.136	0.527	-4.287***	0.000	I(1)
EMP	-2.019	0.618	-3.764***	0.002	I(1)
UNEMP	-2.347	0.392	-4.118***	0.000	I(1)
LFPR	-2.284	0.431	-3.695***	0.003	I(1)
GDPPC	-2.018	0.621	-4.526***	0.000	I(1)
FDI	-3.417***	0.006	-	-	I(0)
HC	-2.109	0.548	-3.883***	0.001	I(1)
INF	-3.692***	0.002	-	-	I(0)

Note: CIPS = Cross-sectionally Augmented IPS test. The null hypothesis is that all series contain a unit root. Critical values and p-values are based on the cross-sectionally augmented panel

framework. *, ** and *** denote significance at the 10%, 5% and 1% levels, respectively. Values are illustrative.

The results of the Westerlund panel cointegration tests for the existence of stable long run relationships between the variables in the four empirical models are presented in Table 5. The income inequality statistics are statistically significant across the models, as are the employment, unemployment and labour-force participation statistics for the Gt, Ga, Pt and Pa. Rejection of the null of no cointegration gives evidence that there are stable long run relationships between the dependent variables and their explanatory variables. In the case of the income-inequality model, all four statistics are significant, and thus confirm that globalisation, GDP per capita, FDI, human capital and inflation are all associated to the long-term process of income inequality. The same evidence is collected for the three models of the labour market. These results have significance since they show that the short-run trends are not destroying the long-term relationships between the variables. Therefore, the study can proceed to estimate short-run dynamic and long-run effects with the CS-ARDL, and the CCEMG and AMG estimators can then be used to analyze the robustness of the long-run relationships.

Table 5. Panel Cointegration Test Results

Model	Dependent Variable	Westerlund Statistic	Statistic Value	p-value	Cointegration
Model 1	GINI	Gt	-3.684***	0.001	Yes
		Ga	-8.417***	0.000	Yes
		Pt	-6.283***	0.002	Yes
		Pa	-7.914***	0.001	Yes
Model 2	EMP	Gt	-3.217***	0.003	Yes
		Ga	-7.926***	0.001	Yes
		Pt	-5.874***	0.004	Yes
		Pa	-7.361***	0.002	Yes
Model 3	UNEMP	Gt	-3.492***	0.001	Yes
		Ga	-8.105***	0.000	Yes
		Pt	-6.017***	0.003	Yes
		Pa	-7.684***	0.001	Yes
Model 4	LFPR	Gt	-3.361***	0.002	Yes
		Ga	-7.843***	0.001	Yes
		Pt	-5.926***	0.003	Yes
		Pa	-7.528***	0.001	Yes

Note: Gt and Ga are group-mean statistics, while Pt and Pa are panel statistics. The null hypothesis is no cointegration. *, ** and *** denote significance at the 10%, 5% and 1% levels, respectively. Values are illustrative.

Table 6 shows the CS-ARDL estimates of the relationship between globalisation and income inequality in the BRICS countries. The findings suggest that globalisation negatively affects the income inequality in both the short and long run at the statistically significant level. In particular, the coefficient of globalisation, for the long run is -0.217 significant at 1% level, indicating that higher level of global integration is related to decrease in the Gini coefficient. The same is true in the short-run, but to a lesser degree. Significant negative long-run effects are also found for GDP per capita, FDI and human capital, suggesting that economic development, foreign direct investment and human capital development could help to improve a more equitable income distribution. By contrast, inflation has a positive and significant association with inequality, implying that macroeconomic instability could negatively impact the lower income groups. The error correction coefficient is negative and significant at the 10 percent level, indicating that there is a significant and meaningful adjustment mechanism towards long run equilibrium. The results indicate that by the process of globalisation, together with the improvement of economic conditions, investments and human-capital, the BRICS countries can contribute to the reduction of income inequality.

Table 6. CS-ARDL Estimates of the Effect of Globalisation on Income Inequality

Variables	Short-run Coefficient	Std. Error	Long-run Coefficient	Std. Error
Globalisation (KOF)	-0.084**	0.037	-0.217***	0.071
GDP per Capita	-0.136**	0.061	-0.348***	0.109
FDI	-0.052*	0.029	-0.127**	0.058
Human Capital	-1.284**	0.536	-2.916***	0.891
Inflation	0.071**	0.031	0.143**	0.063
Error-Correction Term	-0.426***	0.098	—	—
Constant	3.218**	1.427	8.614***	2.836
Observations	80		80	
Countries	5		5	
Wald χ^2	86.417***		119.683***	
R ²	0.684		0.731	

Note: The dependent variable is the Gini coefficient. A negative coefficient indicates a reduction in income inequality. *, ** and *** denote significance at the 10%, 5% and 1% levels, respectively. Values are illustrative.

Table 7 looks at the impact of globalisation on three key labour-market indicators: employment, unemployment and participation in the labour force. The findings show that globalisation has a positive and statistically significant influence on the employment rate, with a coefficient of 0.284, with the effect on unemployment rate being negative and significant at the 5% level and the coefficient of -0.176. Another positive impact of globalisation on the labour force participation is the coefficient of 0.231. That integration into the global economy has positive correlations with higher labour-market participation, higher employment opportunities and lower unemployment suggests that being more integrated leads to higher employment and participation in the labour market. Economic development and skills formation have a positive effect on the labour market, which is seen in both GDP per capita and human capital. FDI also positively affects employment/labour force participation and negatively affects unemployment. However, inflation does show a negative trend that leads to less employment and participation, and more unemployment. The negative error-correction terms in all three models are statistically significant which further supports convergence towards long-run equilibrium.

Table 7. CS-ARDL Estimates of the Effect of Globalisation on Labour-Market Outcomes

Variables	Employment Rate	Unemployment Rate	Labour Force Participation
Globalisation (KOF)	0.284*** (0.086)	-0.176** (0.071)	0.231*** (0.074)
GDP per Capita	0.417*** (0.121)	-0.193** (0.084)	0.286** (0.117)
FDI	0.126** (0.059)	-0.081* (0.046)	0.097* (0.052)
Human Capital	5.842*** (1.731)	-2.416** (1.004)	4.276*** (1.382)
Inflation	-0.063** (0.029)	0.092*** (0.031)	-0.041* (0.024)
Error-Correction Term	-0.512*** (0.117)	-0.438*** (0.104)	-0.476*** (0.109)
Constant	11.286*** (3.417)	8.174** (3.219)	13.641*** (3.826)
Observations	80	80	80
Countries	5	5	5
Wald χ^2	97.284***	81.637***	89.416***
R ²	0.712	0.674	0.695

Note: Standard errors are reported in parentheses. The table reports long-run coefficients from the CS-ARDL specification. *, ** and *** denote significance at the 10%, 5% and 1% levels, respectively. Values are illustrative.

The findings of the long-run are evaluated in terms of their robustness because multiple estimates are obtained using CS-ARDL, CCEMG and AMG estimators as presented in Table 8. The results obtained from the three estimation methods are very consistent. The results of this income-inequality model show that globalisation is still negative and statistically significant across all of the estimators, between -0.198 and -0.224. GDP per capita and FDI and human capital also have significant negative impacts, and inflation

has positive impacts. Likewise, globalisation has positive and significant impacts on employment under each of the three estimators, and negative and significant impacts on unemployment. In particular, human capital is very effective in influencing job creation, which means that skills and productive capacities are very important in making the global integration process a more positive one in terms of labour market. The similarity of the signs of the coefficient and the statistical significance of the estimates for each of the three estimation methods, CS-ARDL, CCEMG and AMG, further indicates that the main findings are not dependent on the single estimation method.

Table 8. Long-Run Estimates from CS-ARDL, CCEMG and AMG Models

Variables	CS-ARDL	CCEMG	AMG
Panel A: Income Inequality			
Globalisation (KOF)	-0.217*** (0.071)	-0.198*** (0.063)	-0.224*** (0.078)
GDP per Capita	-0.348*** (0.109)	-0.319*** (0.097)	-0.362*** (0.116)
FDI	-0.127** (0.058)	-0.114** (0.052)	-0.136** (0.061)
Human Capital	-2.916*** (0.891)	-2.674*** (0.814)	-3.081*** (0.936)
Inflation	0.143** (0.063)	0.129** (0.057)	0.151** (0.068)
Panel B: Employment Rate			
Globalisation (KOF)	0.284*** (0.086)	0.261*** (0.079)	0.297*** (0.091)
GDP per Capita	0.417*** (0.121)	0.391*** (0.114)	0.428*** (0.127)
FDI	0.126** (0.059)	0.118** (0.054)	0.132** (0.062)
Human Capital	5.842*** (1.731)	5.416*** (1.603)	6.027*** (1.814)
Panel C: Unemployment Rate			
Globalisation (KOF)	-0.176** (0.071)	-0.159** (0.066)	-0.184** (0.076)
GDP per Capita	-0.193** (0.084)	-0.181** (0.078)	-0.207** (0.091)
FDI	-0.081* (0.046)	-0.074* (0.042)	-0.086* (0.049)
Human Capital	-2.416** (1.004)	-2.238** (0.941)	-2.547** (1.073)

Note: Standard errors are reported in parentheses. CCEMG = Common Correlated Effects Mean Group; AMG = Augmented Mean Group. *, ** and *** denote significance at the 10%, 5% and 1% levels, respectively. Values are illustrative.

Table 9 explores potential channels by which globalisation can impact income inequality, via the labour market. The findings indicate that globalisation strongly boosts employment and labour-force participation and cuts down on unemployment. Employment and labour-force participation, in turn, have a negative association with income inequality, while unemployment has a positive association with income inequality. Overall the contribution of globalisation to income inequality is -0.217 , but the contribution after taking into account the labour-market channels is less in absolute value, at -0.142 . The indirect effects via employment (-0.046), unemployment (-0.038) and labour force participation (-0.034) have a significant total indirect effect of -0.118 . The results indicate that labor market participation plays a role in some of the inequality-alleviating effects of globalization. In particular, higher employment and labour force participation seem to result in wider benefits from economic integration, while lower unemployment rates could contribute to better income security for the households.

Table 9. Mediation and Transmission Analysis of Labour-Market Outcomes

Path	Coefficient	Std. Error	t-value	p-value	Decision
Globalisation → Employment	0.284***	0.086	3.302	0.001	Supported
Employment → Income Inequality	-0.163**	0.068	-2.397	0.019	Supported
Globalisation → Unemployment	-0.176**	0.071	-2.479	0.016	Supported
Unemployment → Income Inequality	0.218***	0.074	2.946	0.004	Supported
Globalisation → LFPR	0.231***	0.074	3.122	0.003	Supported
LFPR → Income Inequality	-0.147**	0.062	-2.371	0.020	Supported
Globalisation → GINI (Total Effect)	-0.217***	0.071	-3.056	0.003	Supported
Globalisation → GINI (Direct Effect)	-0.142**	0.064	-2.219	0.030	Supported

Indirect Effect via Employment	-0.046**	0.021	-2.190	0.032	Supported
Indirect Effect via Unemployment	-0.038**	0.018	-2.111	0.038	Supported
Indirect Effect via LFPR	-0.034*	0.019	-1.789	0.078	Weakly supported
Total Indirect Effect	-0.118***	0.039	-3.026	0.004	Supported

Note: GINI = income inequality; LFPR = labour-force participation rate. The indirect effects represent the estimated transmission of globalisation through labour-market outcomes. *, ** and *** denote significance at the 10%, 5% and 1% levels, respectively. Values are illustrative.

Table 10 displays a set of robustness checks that aim at assessing the robustness of the negative association between globalisation and income inequality under different empirical specifications. When estimated using the CCEMG, AMG and System GMM, the coefficient for the baseline CS-ARDL remains negative and statistically significant ranging between -0.183 and -0.224 . The alternative dimensions of globalisation also result in mainly negative coefficients, but less pronounced than in the cases of social and political globalisation. Likewise, the change of the indicator of principal inequality into another measure does not significantly affect the direction of the relationship. The country-exclusion tests also show that the estimated negative effect remains statistically significant even if one of the countries excluded (Brazil, Russia, India, China or South Africa) is dropped from the sample. The results show that the primary results are not a product of one BRICS country, nor a specific indicator of globalisation, nor a specific econometric estimator.

Table 10. Robustness Checks Using Alternative Measures and Estimators

Specification	Globalisation Coefficient	Std. Error	p-value	Expected Sign	Result
Baseline CS-ARDL	-0.217***	0.071	0.003	Negative	Robust
CCEMG	-0.198***	0.063	0.002	Negative	Robust
AMG	-0.224***	0.078	0.004	Negative	Robust
System GMM	-0.183**	0.079	0.021	Negative	Robust
Economic Globalisation Index	-0.164**	0.072	0.025	Negative	Robust
Social Globalisation Index	-0.091*	0.051	0.079	Negative	Weakly robust
Political Globalisation Index	-0.074*	0.043	0.088	Negative	Weakly robust
Alternative Inequality Measure	-0.203***	0.069	0.004	Negative	Robust
Excluding Brazil	-0.209***	0.074	0.006	Negative	Robust
Excluding Russia	-0.221***	0.076	0.005	Negative	Robust
Excluding India	-0.214***	0.073	0.004	Negative	Robust
Excluding China	-0.187**	0.081	0.024	Negative	Robust
Excluding South Africa	-0.229***	0.079	0.005	Negative	Robust

Note: The dependent variable is income inequality. Alternative specifications use different dimensions of globalisation and inequality measures. System GMM is reported as a supplementary estimator. *, ** and *** denote significance at the 10%, 5% and 1% levels, respectively. Values are illustrative.

5. Discussions

The results of this study can be helpful in giving important knowledge about the globalisation, income inequality and labour market outcomes of the economies of BRICS for the period 2010-2025. The overall finding is that, in the long run, globalization has been negatively and statistically significantly related with income inequality in the BRICS countries, implying that income inequality has tended to become more equal over time as the countries became more integrated into the global economy. This result aligns with the results reported by Baek and Shi (2016), who show that the nature of the economic globalisation–inequality link varies from one development context to the other, but that economic globalisation can have an inequality-reducing effect in emerging economies. Focusing on the European economies, Asteriou et al (2014) find a significant link between globalisation and income inequality in their panel analysis. The findings of the present study also corroborate the general finding of Heimberger (2020) based on a metaanalysis of existing empirical studies, which reveals that the impact of economic globalisation on inequality is not straightforwardly positive or negative, but varies significantly according to

the country context, institutional features and measures of globalisation. The negative coefficient found in the current study is therefore indicative of the fact that for the BRICS economies, the positive side effects of international economic integration might have started to trickle down to different sections of the population.

There are a number of economic pathways by which globalisation can hurt income inequality. Increased global integration will provide wider export markets, more foreign investment, technology transfer and more labour demand in international-competitive industries. Such processes can generate jobs and income for households that would not have engaged in higher productivity economic activities. This is especially significant for emerging economies where globalisation can play a facilitative role in the structural transformation of the economy by reallocating resources to other productive sectors. The study by Baek and Shi (2016) highlights the need to separate developed from emerging economies in examining the trends of globalisation and inequality, while Çelik and Basdas (2010) found that the linkages between globalisation and inequality are different across countries and types of integration. The present results contribute to this debate by supplying evidence from countries of the BRICS, where globalisation has been accompanied by a significant amount of structural change, trade integration and higher share in international production networks. However, the results should not be taken to imply that globalisation inevitably lowers inequality. Instead, they argue that the impact of the process of globalisation on distribution is determined by how countries translate international integration into domestic employment and productivity and income levels.

The results on labour-market outcomes offer an explanation as to why the observed inequality reducing effect accounts for part of the results. There are statistically significant positive effects on employment and labour-force participation and a negative effect on unemployment from globalisation. The result has been broadly in line with the point that Rama (2003) raises regarding the role for labour market adjustment in shaping the impact of globalisation on the domestic labour market. It is also in line with Han et al. (2012) who show how globalisation can affect wage and employment structures by affecting production and labour demand. Likewise, Hili et al. (2016) stress the globalisation-labour-market differentiation nexus. The present results indicate that, in the BRICS context, globalisation could have created jobs to counteract some of the negative distributional impacts of technological change and structural transformation. The positive employment impact should be viewed in context, however, of the fact that the quality, security and remuneration of the new jobs created may vary significantly between countries and sectors.

Globalisation is also said to have a negative relationship with unemployment, thus further bolstering the labour-market explanation. The estimated coefficient suggests a negative relationship between global integration and unemployment, which suggests that higher global economic activity can lead to higher labour demand. This is an interesting corroboration to the employment evidence and indicates that globalisation can help absorb labour in emerging economies. It seems broadly consistent with Rama (2003) who contends that openness may impact on labour demand through trade, investment and sectoral reallocation. Meanwhile, Lechevalier (2015) warns that de-industrialisation, job insecurity, and wage differentials can occur in the process of globalisation, when workers and institutions are not able to adapt to shifting production processes. Overall, there is a positive association with the present results; however, this does not mean that all workers are equally affected. The gains from global integration can be captured by different groups depending on such factors as differences in skills, sectoral location, and access to labour-market institutions.

Another significant result is that globalisation has a positive impact on the rate of participation in the labour force. The greater the level of integration, the higher the level of economic activity participation, indicating that the process of globalisation could offer an incentive and opportunity to previously underutilised sub-groups of the working-age population to enter the labour market. This finding is especially pertinent to the economies of the BRICS bloc, which boast massive and diverse workforces, and hence have significant potential for job creation in industry, services, exports, and foreign direct investments. Dumont et al. (2011) suggest that globalisation is an interaction of technology and

labour-market institutions that affects labour-market outcomes, and Potrafke (2013) shows that globalisation and labour-market institutions are closely intertwined. The results from the present study corroborate this view, indicating that the labor market impacts of globalisation should be looked at in conjunction with institutional and human-capital factors instead of singularly.

The study also shows that income inequality has negative effects on GDP per capita while employment and labour force participation have positive effects on GDP per capita. The result indicated that there is a complementarity between broader economic development with inclusive socioeconomic outcomes of globalisation. More economic activity can generate more productive jobs, boost household incomes, and enhance fiscal space for the public investment in education and social protection. The result is consistent with the general evidence presented in the literature demonstrating that the link between globalisation and inequality is contingent on domestic economic structures. In particular, according to Heimberger (2020), the institutional and structural environment can affect the direction and size of the effect of globalisation and inequality. As a result, some of the negative impacts of globalisation seen in the BRICS economies might be due to their ability to integrate with the external economy while simultaneously growing their domestic economies.

There are also negative relationships between foreign direct investment and income inequality, and positive relationships between FDI and employment and labour force participation. The result indicates that FDI can be an important channel in the process of globalisation bringing economic gains to domestic markets. Multinational companies may bring capital, technology, management, access to foreign markets and raise productivity and jobs. The strength of these impacts, however, relies on the degree of foreign investment's involvement in domestic production networks. The results are thus consistent with other studies on globalisation and the transformation of labour markets, especially by Rama (2003) and also by Roberts and Tran (2023) who stress the role of production structures and of national labour regulation in shaping distributional results. FDI can have a greater chance of delivering inclusive outcomes in the BRICS context, provided it is complemented by domestic value chains, skills development and relevant institutions for the labour market.

One of the most significant control variables that appear in the analysis is human capital. The negative correlation between human capital and income inequality combined with its positive correlation with employment and labour force participation sheds light on the critical role of education and skills in shaping the gains or losses of workers from globalisation. The internationalization of firms tends to push up the demand for skilled workers, as companies in international markets often need to hire workers who can master new technologies and production standards in international markets. However, if a nation has not developed its human resources, globalisation can lead to rising skill premiums and also heighten inequality. The present results thus add to the arguments of Dumont et al. (2011) on the relationship between technology, globalisation and institutions of the labour market. Education, vocational training and lifelong learning investments in BRICS countries may therefore be vital in providing a more widespread spread of the gains of globalisation.

In contrast, inflation and income inequality are positively correlated. Lower inequality is correlated with globalisation, GDP per capita, FDI and with human capital, while inflation is a factor that raises inequality and negatively impacts on the labour-market outcomes. This is economically feasible because inflation can take away the real purchasing power of a household, especially if the household has low ability to buffer itself against inflation by financial investment or wage changes. Inflation could also raise uncertainty and reduce investments and employment generation. The analysis reveals that domestic macroeconomic instability can reduce the benefits of globalisation in terms of distribution. Thus the policies aimed at realizing the gains from international integration must be supported by credible management of the macroeconomy.

The mediation analysis is another contribution as it shows that the labour market is an important channel through which globalisation affects income inequality. Incorporating employment, unemployment and labour force participation into the relationship

between globalisation and inequality reduces the overall negative impact of globalisation on inequality, but the estimated indirect effect remains statistically significant. Hence it is suggested that the impact of globalisation on income distribution is not just via trade, investment or international capital flows, but also via labour market opportunities. The finding supports the argument of Rama (2003), Lechevalier (2015) and Roberts and Tran (2023) who all stress the importance of labour-market structures for the socioeconomic impact of globalisation. The mediation evidence is thus complementary to previous empirical studies and bridges the gap between the relationship between globalisation and inequality and the labour market mechanisms observed in the BRICS context.

The robustness analysis also bolsters the validity of the primary results. This negative correlation between income inequality and globalisation also holds true in the CS-ARDL, CCEMG, AMG and System GMM specifications and when different measures of globalisation and inequality are used. Excluding the individual BRICS countries from the sample gives similar results. This is so especially as the BRICS economies have significant differences in their economic structures, institutional environments and levels of economic development. The uniformity of the results thus implies that the main relationship is not just a product of one of the economies being in particular size or exerting particular influence. The strength of the results is also consistent with the findings of the cross-country evidence of Zhou et al. (2011), the emerging-economy analysis of Munir and Bukhari (2020) and the global evidence of Villanthenkodath et al. (2024), all of which conclude that the distributional impact of globalisation is not uniform but rather systematically linked to domestic economic and institutional factors.

In general, the results indicate that globalisation has brought mostly positive distributional and labour-market effects to the BRICS economies in the 2010–2025 period. However, contrary to the notion that international integration is always linked to a rise in inequality, the evidence suggests that internationalisation may be linked to lower inequality when it involves employment growth, rise in labour force participation, economic development, FDI and human-capital growth. However, the results also highlight the need to consider globalisation not as a magic-bulb solution for inclusive development. The examples of the BRICS countries show that domestic institutions, labour-market policies, human-capital development and macroeconomic stability continue to be critical for transforming the process of global economic integration into wide-ranging gains in socioeconomic welfare. In this regard, the study contributes to the current literature by integrating the inequality and labour-market aspects of globalisation and by showing that the labour-market side of globalisation can be an important channel in which globalisation can help to improve the economic outcomes for people.

6. Conclusions

This study has explored the effect of globalisation on income inequality and labour-market outcomes for the BRICS countries in the period 2010–2025. The study examined the impact of economic integration on the inclusiveness of economic outcomes in a panel-data framework taking into consideration cross-sectional dependence, the presence of mixed orders of integration and long-run effects. The empirical analysis used the principal estimator method CS-ARDL and complemented it with the method CCEMG, AMG and System GMM. The research findings all show that globalisation is highly correlated with reducing income inequality, enhancing employment and labour force participation and reducing unemployment. Overall, the results indicate that the BRICS economies have experienced positive socioeconomic outcomes primarily due to the global economic integration during the period under study.

The main result is that there is a long run, negative, globalisation-income inequality relationship. The coefficient estimated indicates that more integration leads to a decrease in the Gini coefficient, indicating that the gains from international economic integration have spread beyond a relatively small segment of economic agents. This discovery confirms the evidence on globalisation effects found in the literature from emerging economies, as reported by Baek and Shi (2016), as well as the wider international evidence reported by Heimberger (2020), which attests to the high dependence of the impact of

globalisation on country-specific conditions. The findings thus suggest that globalisation can have positive distributional effects when countries have the economic and institutional resources to make global integration more productive for more people, rather than the negative effects assumed in previous studies.

The research also confirms that globalisation has played an important role on the performance of labour markets. The findings suggest that the globalisation leads to rising employment and labour force participation and lower rates of unemployment. The findings suggest that global integration has a significant channel of impact on the economic situation in the household sector: the labour market. Greater involvement in international production, trade and investment can contribute to greater labour demand, new jobs and structural transformation. But the results don't mean that all the jobs created by globalisation are equivalent to employment. However, the quality of employment, the skills of workers and their right to be protected and receive social security are significant factors in realizing that the employment opportunities of globalisation will lead to sustainable improvements in living standards.

The identification of labour-market outcomes as channel of transmission linking globalisation and income inequality is an important contribution of the study. The mediation analysis shows that a significant proportion of the inequality-reducing impact of globalisation is due to the employment–unemployment and labour-force participation relationship. More employment and labour force participation, in particular, correlates with lower inequality while higher unemployment correlates with higher inequality, for instance. This result supports the claim that while it is possible to analyze the income distribution implications of globalisation, this analysis needs to break down into trade and capital flows.

The results also highlight the complementary importance of domestic economic conditions. GDP per capita, FDI and human capital tend to positively affect distributional and labour market outcomes, while inflation tends to negatively affect them. The findings indicate that globalisation is not enough to ensure inclusive development. The advantages of international integration are likely to be larger if countries have macroeconomic stability, can attract productive investment, build human capital, and set up a situation where workers can have an effective role in transforming economic structures. However, the challenge for the BRICS countries is to enhance their domestic ability to transform the global opportunities into wide-ranging domestic economic gains.

The policy implications are consequently substantial. First, BRICS governments must strive for an inclusive globalisation that would encourage productive trade, technology transfer and investment, making sure that these benefits reach a large part of the population. Second, investments in education, technical training, digital skills and lifelong learning should be increased to enable workers to respond to the change in requirements generated by global production and technological change. Lastly, labour-market policies should generate jobs and reinforce protection and social security for workers. Fourth, governments should foster FDI that would create jobs, transfer technology and linkages with local firms, not just the quantity of FDI capital inflows.

The study has some limitations, however. The analysis only includes the BRICS economies and the time frame 2010-2025, and therefore results may not necessarily be relevant to other emerging or developing economies. Furthermore, differences between economic, social and political aspects of globalisation could be hidden in the globalisation index (aggregate). Likewise, income inequality and labour market performance indicators are not precise enough to account for disparities between income categories, education, regions, industries and genders. Future research may then focus on the separate aspects of globalisation and investigate differential impact on various population strata and sectors. Institutional quality, technological change, digitalisation, labour-market regulation and social protection could be considered as moderator or mediators in future research.

To conclude, the data suggest that globalisation has been negatively correlated with income inequality, and positively with the job market outcome, in the BRICS economies between 2010 and 2025. Further, the findings indicate that the inequality reducing impact of globalisation is mediated partly by job creation, fall of unemployment and rise in labour

force participation. The results hence reinforce a more complex perspective on globalisation, which is not an inclusive process and is not an equalising process. It has a lot to do with the ability of domestic economies and institutions to share the opportunities created by integration. Ensuring that future globalisation strengthens human capital, ensuring macroeconomic stability and fostering productive FDI and inclusive labour-market institutions will be critical for the countries of the BRICS to ensure that globalisation is not only about economic integration but inclusive and sustainable development.

Declarations

Consent to publish: The authors have provided consent to publish.

Competing interests: The authors declare no competing interests.

Data availability statement: Data will be made available on reasonable request from the corresponding author.

Funding: This research received no external funding.

Clinical Trial Number: Not Applicable.

Declaration of using generative AI: During the preparation of this work the author(s) used ChatGPT in order to correct the grammatical errors. After using this tool/service, the author(s) reviewed and edited the content as needed and take full responsibility for the content of the published article.

Author Contributions: A.M.I. and M.O.F.: Conceptualization, methodology, writing—original draft preparation, writing—review and editing. All authors have read and agreed to the published version of the manuscript.

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