TECHNIUM
SOCIAL SCIENCES JOURNAL

www.techniumscience.com

Vol. 69/2025

A New Decade for Social Changes

PLUS COMMUNICATION
International Communication & PR

TECHNIUM SOCIAL SCIENCES JOURNAL

Technium Social Sciences Journal
Vol. 69, 244-258, March, 2025
ISSN: 2668-7798
www.techniumscience.com

Financial Market Development and Income Inequality: A Panel Data Analysis Across Europe

Ela-Andrada Pușcașu

Bucharest University of Economic Studies.

puscasuela15@stud.ase.ro

Abstract. Financial market development is often seen as a driver of economic growth, yet its impact on income inequality remains debated. While some argue that financial expansion broadens access to capital and reduces disparities, others suggest it disproportionately benefits higher-income groups. Building on this debate, this paper examines the relationship between financial market development and income inequality across European Union member states, Turkey, and the United Kingdom from 2014 to 2023. Using panel data regression techniques, we assess this link through OLS, pooled OLS, fixed effects, and random effects models. Results indicate that traditional financial indicators (market capitalization, value traded, turnover ratio) have limited direct effects on inequality, while broader financial system efficiency (Financial Markets Index, Financial Development Index) correlates with lower disparities. Labor market conditions, particularly unemployment, emerge as the strongest determinant of inequality, emphasizing that financial expansion alone cannot counteract structural economic imbalances. These findings suggest that financial markets must be accompanied by inclusive labor policies, financial literacy programs, and regulatory oversight to ensure equitable economic benefits. Future research could explore the role of institutional quality and financial innovation in shaping income distribution.

Keywords. Financial development, income inequality, financial markets, panel data, Gini coefficient, economic disparity.

1. Introduction & Motivation

Income inequality has been at the center of economic debates for decades, with its persistence raising concerns about social conditions, economic stability and long-term growth prospects (Piketty, 2014; Milanovic, 2016). The increasing gap between income groups enhances political instability, affects consumer demand, and can even slow economic expansion by limiting access to opportunities for large segments of the population. In parallel, financial development is often viewed as a key engine of economic progress by enhancing capital allocation, fostering entrepreneurship, and driving innovation. However, its impact on inequality and disparity remains highly contested.

On one hand, well-developed financial markets are thought to level access to credit and investment opportunities, allowing lower-income groups to engage in wealth-building activities such as entrepreneurship, homeownership, or education financing (Beck, Demirgüç-Kunt, & Levine, 2007; Clarke, Xu, & Zou, 2006). This perspective aligns with classic economic theories

Technium Social Sciences Journal
Vol. 69, 244-258, March, 2025
ISSN: 2668-7798
www.techniumscience.com

that suggest financial deepening should support inclusive growth by reducing entry barriers to capital. On the other hand, critics argue that financial market expansion primarily benefits wealthier individuals and large corporations, meaning those with greater financial literacy, access to networks, and existing capital, thereby reinforcing economic disparities rather than mitigating them (Stiglitz, 2012; Rajan & Zingales, 2003). Moreover, financial liberalization can sometimes lead to excessive speculation, credit booms, and financial crises that disproportionately harm lower-income groups, exacerbating inequality rather than alleviating it (Demirgüç-Kunt & Levine, 2009).

Considering this financial and macroeconomic environment, our study aims to provide a clearer empirical understanding of how financial market development influences income distribution. Adding on many previous studies that focus on a single measure of inequality, we take a more nuanced approach by alternating between the Gini coefficient and broader income inequality index as dependent variables. By doing so, we capture different dimensions of economic disparity and assess whether financial sector expansion plays a balancing role or reinforces existing differences.

Our analysis covers a panel dataset comprising multiple countries for a timeframe from 2014 to 2023, using a range of econometric models, including OLS, pooled OLS, fixed effects and random effects, to ensure the robustness of our findings. Key financial development indicators, such as market capitalization, value traded, and financial market indices, are integrated alongside macroeconomic control variables like GDP per capita, education levels, employment rates, inflation, and bond yields. This set-up allows the empirical analysis to account for broader structural economic forces that shape income distribution alongside financial market activity (Galor & Zeira, 1993; Arestis & Demetriades, 1997).

By providing a comparative, multi-model perspective, this study contributes to the growing literature on financial development and inequality in two key ways. First, it offers a broader empirical assessment of whether financial markets act as a balancing force or increasing disparities. Second, it provides insights into the policy implications of financial development—helping policymakers design regulations that promote inclusive economic growth. As financial markets continue to expand globally, understanding their distributional consequences is essential for establishing policies that ensure their benefits are shared across society, rather than concentrated among a privileged group.

2. Literature review

The link between financial development and income inequality has been the subject of extensive debate in both theoretical and empirical economic research papers. While the growth of the financial sector is often associated with higher economic efficiency and improved capital allocation, its impact on income distribution is far from straightforward. Depending on the institutional framework, financial market structure, and level of development, financial expansion can either facilitate upward mobility and economic inclusion or widen economic disparities by favoring already advantaged groups.

The Galor and Zeira (1993) model serves as a key research in understanding how financial constraints contribute to persistent income inequality. The study argues that when access to finance is restricted, individuals from lower-income groups face barriers to investing in education and entrepreneurship, preventing them from benefiting from economic opportunities. This creates a self-reinforcing cycle where inequality persists across generations. The model suggests that financial development can be a balancing force, allowing marginalized groups to invest in human capital and participate in wealth-generating activities. However, this assumes

Technium Social Sciences Journal
Vol. 69, 244-258, March, 2025
ISSN: 2668-7798
www.techniumscience.com

that financial access is equitable, a condition that is not always met in real economic environments, being rather a theoretical set-up.

Empirical studies provide mixed evidence on whether financial development helps or hinders income equality. Beck, Demirgüç-Kunt, and Levine (2007) present cross-country evidence showing that financial deepening improves access to credit and investment opportunities for lower-income groups, thereby reducing inequality. They emphasize the role of small and medium-sized enterprises (SMEs) in creating more inclusive economic growth, arguing that well-functioning financial institutions help individuals escape poverty through entrepreneurship and business expansion.

However, other research papers argue that financial development does not inherently benefit all segments of the population. Stiglitz (2012) and Rajan and Zingales (2003) highlight that financial liberalization often favors large corporations and wealthy individuals, as they have the expertise, networks, and initial capital to fully exploit financial markets. According to this perspective, as financial systems expand, those already in privileged economic positions can leverage capital markets more effectively, rising wealth concentration rather than mitigating it.

Moreover, a growing amount of research papers has attempted to empirically test these competing theories. Naceur and Zhang (2016) use panel data analysis across different countries and find that financial development is associated with lower income inequality only when institutional quality is high. They emphasize that without strong regulatory oversight, financial market expansion can disproportionately benefit high-income earners, rather than providing opportunities for broader economic participation.

A more recent study by Nguyen, Su, and Nguyen (2023) takes a long-term perspective, finding that while financial development contributes to overall economic growth, its impact on income distribution is highly dependent on the strength of social safety nets and redistributive policies. This suggests that the benefits of financial sector expansion are not automatic but must be channeled through appropriate policy mechanisms.

A multi-dimensional analysis by Huynh and Tran (2023) further highlights that institutional quality plays a key role in shaping the relationship between financial development and inequality. The study argues that in economies with weak governance and regulatory inefficiencies, financial deepening may lead to capital misallocation, benefiting politically connected groups rather than fostering widespread financial inclusion.

Meanwhile, country-specific analyses provide additional nuances. Destek, Sinha, and Sarkodie (2020) examine the case of Turkey, showing that financial development initially reduces inequality but, over time, tends to widen the income gap if not accompanied by inclusive financial policies. Similarly, Alshubiri (2021) studies OECD and Asian economies, revealing that financial deepening has heterogeneous effects, reducing inequality in some contexts but exacerbating it in others, depending on access to financial services and the effectiveness of financial regulation.

Another branch of the literature studies bank-based and market-based financial systems and their effects on inequality. Moradi, Mirzaeenejad, and Geraeenejad (2016) analyze selected economies and find that bank-based financial systems are generally more effective in reducing inequality, as they provide broader access to credit. In contrast, market-based financial systems, where wealth is largely accumulated through stock market participation, tend to favor high-income groups.

Supporting this perspective, Blau (2018) finds that highly liquid stock markets tend to be associated with higher income inequality, as capital market activity benefits a narrow segment of the population. Similarly, Beladi et al. (2019) argue that capital market distortions, including

Technium Social Sciences Journal
Vol. 69, 244-258, March, 2025
ISSN: 2668-7798
www.techniumscience.com

preferential access to financial instruments and speculation-driven wealth accumulation, contribute to wage inequality and market concentration.

This finding aligns with Charlton and Stiglitz (2008), who argue that capital market liberalization, when implemented without strong financial regulation, can increase poverty levels rather than reduce them. In their analysis, rapid adoption of finance mechanisms often leads to speculative bubbles and financial crises, which disproportionately harm the economically vulnerable.

Given these different findings based on distinct considerations and variables involved, the debate on whether financial development reduces or worsens inequality remains open. It is increasingly clear that financial sector expansion alone is not enough, if it is not supported by the institutional environment, financial access mechanisms, and macroeconomic policies, which influence who benefits and who is left behind.

Our study contributes to this discussion by adopting a comparative, multi-model approach, alternating between the Gini coefficient and broader income inequality index as dependent variables. We use panel data from 2014 to 2023 and apply OLS, pooled OLS, fixed effects, and random effects models to provide a comprehensive empirical assessment of financial development's role in shaping income disparities. By integrating macroeconomic control variables such as GDP per capita, education levels, employment rates, inflation, and bond yields, we account for structural economic factors that influence inequality alongside financial sector expansion.

As financial markets continue to evolve globally, understanding their distributional consequences is essential for policymakers aiming to promote inclusive economic growth. Whether financial markets act as a balancing force or deepen disparities remains context-dependent, which makes further research in this area critical.

3. Data and Methodology

This study draws upon multiple publicly available economic and financial databases, including Eurostat, the IMF's Financial Development Index, and the World Bank's Global Financial Development Database.

The present study employs panel data regression techniques to examine the relationship between financial market development and income inequality across multiple countries from 2014 to 2023. The analysis focuses on European Union member states, as well as Turkey and the United Kingdom, to capture regional financial dynamics within a diverse economic and institutional framework.

Considering the ongoing debate mentioned above, namely whether financial sector expansion mitigates or increases economic disparities, the study tests this relationship using alternative dependent variables: the Gini coefficient and a broader income inequality index, ensuring a more comprehensive analysis of inequality dynamics.

To account for both time-invariant and country-specific heterogeneity, we estimate four different econometric models:

1. Ordinary Least Squares (OLS) Regression
2. Pooled OLS Regression
3. Fixed Effects Model (FE)
4. Random Effects Model (RE)

These models allow us to compare how financial market indicators influence inequality under different structural assumptions. The inclusion of fixed effects captures unobserved heterogeneity specific to each country, while the random effects model assumes variability

Technium Social Sciences Journal
Vol. 69, 244-258, March, 2025
ISSN: 2668-7798
www.techniumscience.com

across countries follows a random pattern. We further enhance our robustness by estimating heteroskedasticity-consistent (robust) standard errors to account for potential heterogeneity in the dataset.

The core empirical model follows the general form:

$$\log(Y_{it}) = \alpha + \beta_1 \text{FinancialDevelopment}_{it} + \beta_2 \text{ControlVariable}_{it} + \mu_i + \varepsilon_{it}$$

where:

- Yit represents either the Gini coefficient or income inequality index, depending on the model specification.
- i and t denote country and year, respectively.
- α is the constant term.
- β coefficients capture the marginal effects of financial development and macroeconomic controls on inequality.
- μi represents country-specific effects (fixed or random).
- εit is the error term.

For the dependent variable, the empirical analysis uses alternatively the following two indicators:

- Gini coefficient – defined as the relationship of cumulative shares of the population arranged according to the level of disposable income, to the cumulative share of the total disposable income received by them.
- Income inequality – the ratio of total income received by the 20 % of the population with the highest income (top quintile) to that received by the 20 % of the population with the lowest income (lowest quintile). Income must be understood as disposable income.

To measure financial market development, we incorporate a selection of the following independent variables:

- Stock market capitalization to GDP – A proxy for stock market depth, calculated as the total value of all listed shares in a stock market as a percentage of GDP.
- Stock market total value traded to GDP – Capturing market liquidity, calculated as the total value of all traded shares in a stock market exchange as a percentage of GDP.
- Stock market turnover ratio – Total value of shares traded during the period divided by the average market capitalization for the period.
- Number of listed companies per 1,000,000 people – Reflecting market expansion, calculated as the number of domestically incorporated companies listed on the country's stock exchanges at the end of the year per 1,000,000 people.
- Financial Development Index – A relative ranking of countries on the depth, access, and efficiency of their financial institutions and financial markets.
- Financial Markets Index – An aggregate of financial market depth, access, and efficiency indicators which complies data on stock market capitalization to GDP, stocks traded to GDP, international debt securities of government to GDP, and total debt securities of financial and non-financial corporations to GDP, stock market turnover ratio etc.

Following on this, stock market capitalization to GDP and value traded are widely used proxies for financial depth and liquidity, as documented in Beck et al. (2007) and Naceur and Zhang (2016), while the Financial Development Index provides a broader measure that incorporates both institutional and market-based elements.

The control variables account for broader macroeconomic conditions that may influence inequality, as follows:

Technium Social Sciences Journal
Vol. 69, 244-258, March, 2025
ISSN: 2668-7798
www.techniumscience.com

- GDP per capita (EUR per capita) – calculated as the ratio of real GDP to the average population of a specific year. It is a measure of economic activity and is also used as a proxy for the development in a country's material living standards.
- Education attainment level - tertiary – Representing data on the tertiary level of education successfully completed by the individuals of a given population, the successful completion of an education programme being validated by a recognised qualification.
- Unemployment rate – The number of unemployed persons as a percentage of the labour force, meaning the total number of people employed and unemployed.
- Inflation rate (HICP) – Consumer price inflation to address price instability effects.
- Bond yields – Maastricht criterion bond yields are long-term interest rates, used as a convergence criterion for the European Monetary Union, based on the Maastricht Treaty, indicating financial stability and monetary policy stance.

The descriptive statistics summary for our entire dataset is presented in the table below:

Table 1 - Descriptive statistics

Variable	Average	Standard deviation	Median	Minimum	Maximum	Skew	Kurtosis	Standard error
Gini coefficient	30.32	4.55	29.60	20.90	45.30	0.68	0.55	0.27
Income inequality	0.05	0.01	0.05	0.03	0.09	1.01	0.51	0.00
Market cap to GDP	0.17	0.26	-	-	1.32	1.85	3.01	0.02
Value traded to GDP	0.06	0.16	-	-	1.21	3.73	16.01	0.01
Turnover ratio	0.16	0.44	-	-	3.66	4.82	28.74	0.03
Listed companies	10.32	19.25	-	-	81.58	2.10	3.41	1.13
GDP per capita	26,863.59	17,094.09	22,195.00	5,590.00	86,540.00	1.50	2.51	1,003.80
Education tertiary	0.30	0.08	0.30	0.14	0.47	(0.09)	(0.90)	0.00
Unemployment rate	0.08	0.04	0.07	0.02	0.27	2.06	5.52	0.00
HICP inflation rate	0.03	0.06	0.02	-	0.72	6.46	58.41	0.00
Bonds yield	0.02	0.02	0.01	0.00	0.10	1.57	3.31	0.00
Financial Development Index	0.55	0.17	0.55	0.20	0.90	(0.22)	(0.70)	0.01
Financial Markets Index	0.45	0.24	0.45	0.02	0.95	(0.29)	(0.78)	0.01

Source: Author's own research; Data from Eurostat, IMF and World Bank

For panel data estimation, we begin with OLS regressions to establish baseline estimates. We then apply pooled OLS, assuming no country-specific effects, followed by fixed effects (controlling for unobserved heterogeneity) and random effects (assuming country differences are random).

To ensure the reliability of our results, we apply multiple diagnostic tests. The Breusch-Pagan test assesses heteroskedasticity, verifying whether variance in residuals affects model efficiency. Variance Inflation Factor (VIF) analysis helps detect potential multicollinearity among independent variables (correlation matrix and VIF summary are presented in the appendix). The Hausman test determines whether fixed or random effects provide the most efficient estimates given the dataset characteristics. Lastly, the Ramsey RESET test assesses

Technium Social Sciences Journal
Vol. 69, 244-258, March, 2025
ISSN: 2668-7798
www.techniumscience.com

potential model misspecifications, ensuring that the functional form accurately captures the relationship between financial development and inequality.

By adopting the comprehensive multi-model estimation approach described above, the study provides a rigorous, data-driven evaluation of how financial development interacts with inequality dynamics. The results contribute to the growing policy debate on whether financial market growth reduces or reinforces economic disparity across different institutional and macroeconomic contexts.

4. Results

The relationship between financial market development and income inequality is rarely a simple one. While financial expansion is often presented as a pathway to inclusive growth, the reality is that its benefits are not evenly distributed, and in some cases, its effects appear marginal at best. Our findings highlight this complexity, revealing that while some aspects of financial market development align with lower inequality, others show little to no association. This suggests that financial deepening alone is not enough to reduce disparities unless it is accompanied by broader structural and institutional mechanisms.

Starting with the financial market indicators, the results suggest that simply expanding stock market size or liquidity does not necessarily translate into lower inequality. Market capitalization to GDP, total value traded, and turnover ratio do not exhibit consistent or significant relationships with inequality across models. This finding aligns with the idea that financial market expansion, while beneficial for overall economic activity, does not inherently improve access to financial resources for lower-income groups. Instead, financial deepening often benefits wealthier individuals and institutional investors who are already positioned to leverage capital markets effectively.

However, the overview changes when considering broader financial system efficiency. The Financial Markets Index and the Financial Development Index both show a significant negative association with the Gini coefficient, suggesting that more structured and well-regulated financial systems tend to support a more equitable income distribution. That said, when shifting the dependent variable to income inequality—a broader measure that captures deeper structural disparities—the effects of financial market development become weaker. This suggests that while an efficient financial system can help reduce overall income dispersion, it is far less effective in addressing entrenched economic divides related to wealth accumulation, labor market mobility, or access to financial instruments.

Beyond financial market indicators, labor market conditions emerge as a key driver of inequality. Unemployment consistently shows a strong and positive relationship with income inequality in every model. This finding reinforces a critical economic reality: when labor markets weaken, inequality rises. Financial market expansion alone does little to counterbalance the effects of job losses, wage stagnation, or precarious employment. Even in economies with highly developed financial systems, rising unemployment can deepen inequality by disproportionately affecting lower-income households who rely primarily on wages rather than capital income.

Similarly, GDP per capita remains one of the most consistent predictors of inequality reduction. The negative association between economic growth and inequality suggests that countries experiencing sustained economic expansion tend to see improvements in income distribution. However, growth alone is not a solution—without deliberate policies that ensure equitable access to opportunities, growth can still disproportionately favor those at the top.

Technium Social Sciences Journal
Vol. 69, 244-258, March, 2025
ISSN: 2668-7798
www.techniumscience.com

Education, on the other hand, presents a more complex picture. Tertiary education attainment, while a recognized driver of long-term economic mobility, does not show significant short-term effects on inequality in our models. This suggests that while education remains an essential tool for reducing disparities, its effects may take longer to materialize—likely through generational shifts in workforce skills and earning potential rather than immediate changes in income distribution.

The effects of inflation and bond yields, two key macroeconomic indicators, are less conclusive. While inflation could, in theory, erode real wages and exacerbate inequality, its effects in this analysis are weak and inconsistent across models. Similarly, bond yields, which are often seen as a reflection of broader financial stability, do not exhibit a significant relationship with inequality, suggesting that monetary conditions alone are not sufficient to drive distributional changes.

The table below summarizes the outputs of model involving Gini coefficient as a dependent variable:

Table 2 - The outputs of models 1-4 which involve Gini coefficient as a dependent variable

	Gini coefficient			
	Model 1	**Model 2**	**Model 3**	**Model 4**
Intercept	3.4012*** [0.0795]	3.4018*** [0.079485]	3.420648523*** [0.081960123]	3.4217*** [0.08197]
Market capitalization to GDP	0.0031 [0.01757]	0.002726 [0.017977]	0.004650567 [0.017735012]	0.0041476 [0.01806]
Total value traded to GDP	0.0021 [0.02109]		0.000419451 [0.021019234]	
Stock market turnover ratio		0.002288 [0.009715]		0.0015965 [0.00934]
Listed companies	-0.0004 [0.00047]	-0.000359 [0.000463]	-0.000345648 [0.000460382]	-0.00034628 [0.00046]
Financial Markets Index	-0.04285* [0.0231]	-0.043427* [0.023426]		
Financial Development Index			-0.059732456* [0.034242345]	-0.060395* [0.03441]
GDP per capita	-0.00000295*** [0.000000768]	- 0.000003*** [0.000001]	-0.000003027*** [7.94e-07]	-0.0000030319*** [0.00079]
Education attainment level - tertiary	0.1149 [0.20303]	0.11323 [0.204150]	0.100694853 [0.202043845]	0.098429 [0.20322]
Unemployment rate	0.87337*** [0.23359]	0.87297*** [0.233700]	0.871237845*** [0.234875432]	0.87038*** [0.23494]
Inflation rate (HICP)	0.0769 [0.08055]	0.082077 [0.088028]	0.089598234 [0.085058234]	0.094081 [0.09229]
Bond yield	-0.1013 [0.24665]	-0.10824 [0.252090]	-0.097989012 [0.25047389]	-0.10401 [0.25594]
R-squared	26.08%	26.11%	25.92%	25.94%

Technium Social Sciences Journal
Vol. 69, 244-258, March, 2025
ISSN: 2668-7798
www.techniumscience.com

	Gini coefficient			
	Model 1	Model 2	Model 3	Model 4
Adjusted R-squared	23.70%	23.73%	23.54%	23.56%

Source: Author's own research; Data from Eurostat, IMF and World Bank
Note: *** means significant at 0.01 level; ** means significant at 0.05 level; * means significant at 0.10 level.

And the following table, shows the output of model using income inequality as dependent variable:

Table 2 - The outputs of models 5-8 which involve Income Inequality as a dependent variable

	Income inequality			
	Model 1	Model 2	Model 3	Model 4
Intercept	-3.0557*** [0.14063]	-3.0572*** [0.13987]	-3.0342*** [0.14998]	-3.0353*** [0.1497]
Market capitalization to GDP	-0.0038 [0.028281]	-0.0025975 [0.028454]	-0.0018696 [0.028305]	-0.00089449 [0.028372]
Total value traded to GDP	0.0189 [0.04209]		0.017166 [0.042029]	
Stock market turnover ratio		0.0091417 [0.020463]		0.0084227 [0.019909]
Listed companies	-0.0004 [0.00066434]	-0.00037478 [0.00066218]	-0.00036906 [0.00066029]	-0.00036124 [0.00065797]
Financial Markets Index	-0.0457 [0.045854]	-0.046407 [0.047401]		
Financial Development Index			-0.065475 [0.06644]	-0.06608 [0.067886]
GDP per capita	-0.000005411*** [1.0949e-06]	-0.0000054123*** [1.0795e-06]	-0.0000054973*** [0.0011598]	-0.0000054999*** [1.1481e-06]
Education attainment level - tertiary	0.2795 [0.33069]	0.28222 [0.33099]	0.26502 [0.32937]	0.26679 [0.33009]
Unemployment rate	1.507*** [0.35411]	1.5105*** [0.355]	1.5049*** [0.35411]	1.5078 [0.35501]
Inflation rate (HICP)	0.0636 [0.14946]	0.076453 [0.16504]	0.077635 [0.15735]	0.089866 [0.17329]
Bond yield	-0.0279 [0.47534]	-0.043842 [0.47836]	-0.023933 [0.47762]	-0.038966 [0.48063]
R-squared	28.43%	28.50%	28.40%	28.47%
Adjusted R-squared	26.13%	26.21%	26.10%	26.17%

Source: Author's own research; Data from Eurostat, IMF and World Bank

Technium Social Sciences Journal
Vol. 69, 244-258, March, 2025
ISSN: 2668-7798
www.techniumscience.com

Note: *** means significant at 0.01 level; ** means significant at 0.05 level; * means significant at 0.10 level.

To ensure the reliability of these results, we conducted several robustness checks. The Breusch-Pagan test confirmed the presence of heteroskedasticity, reinforcing the need for robust standard errors to correct for variance inconsistencies across observations. At the same time, the Ramsey RESET test did not indicate major specification issues, suggesting that the functional form of the models appropriately captures the relationship between financial development and inequality.

Additionally, the F-test for individual effects confirmed the necessity of using panel data techniques, rejecting the null hypothesis that a pooled OLS model would be sufficient. This supports the decision to use fixed or random effects, ensuring that country-specific characteristics are accounted for. The Hausman test favored the random effects model, indicating that individual country differences do not systematically bias the results and that random effects estimation provides a more efficient and unbiased framework for analysis.

The results point to an important conclusion: financial market development alone is not a silver bullet for inequality reduction. While well-structured financial systems appear to contribute to lower overall income dispersion, they do not necessarily address deeper, more structural disparities. This has important implications for policymakers seeking to harness financial development as a tool for inclusive growth.

Regarding the policy implications of the study, first and foremost, labor market policies should remain central to any strategy aimed at reducing inequality. Financial deepening will not compensate for weak employment conditions or stagnant wages. Policies that support job creation, wage growth, and social safety nets will be far more effective in improving income distribution than simply expanding financial markets.

Second, financial inclusion efforts should go beyond market expansion and focus on ensuring that financial instruments, credit, and investment opportunities are accessible to broader segments of the population. Improving financial literacy, expanding access to credit for small businesses and lower-income households, and strengthening consumer protection mechanisms can help translate financial market development into real economic participation.

Third, economic growth strategies must be designed to be inclusive. While GDP per capita growth is linked to reductions in inequality, the extent to which this translates into tangible benefits for lower-income groups depends on broader fiscal and social policies. Investments in education and workforce development, and policies that promote entrepreneurship and SME growth will be essential in ensuring that financial expansion does not simply reinforce existing disparities.

Finally, regulatory oversight matters. The significance of the Financial Markets Index and Financial Development Index suggests that well-structured and efficiently regulated financial systems contribute to more equitable outcomes. Ensuring financial stability, preventing excessive speculation, and maintaining transparent market operations will be crucial in aligning financial development with inclusive economic progress.

Thus, the findings reinforce that financial markets are just one piece of the inequality puzzle. While they can play a role in reducing income disparities, their effectiveness depends on how they are structured and whether they are accompanied by broader labor market, fiscal, and social policies. A deep financial system is not enough, it must be accessible, well-regulated, and integrated with policies that ensure economic opportunities are widely shared.

Technium Social Sciences Journal
Vol. 69, 244-258, March, 2025
ISSN: 2668-7798
www.techniumscience.com

From the policy perspective, financial development should not be seen as a substitute for comprehensive economic policies, but rather as a complement to broader efforts aimed at achieving inclusive and sustainable growth. Without this integration, financial expansion risks benefiting only those who are in a privileged group, positioned to take advantage of it, leaving behind the very groups that policy efforts seek to uplift.

While this study provides valuable insights into the relationship between financial market development and income inequality, several areas remain open for further exploration. Future developments may include a more granular approach, to distinguish between different income groups to assess whether financial development disproportionately benefits middle-income versus high-income countries, a longer time-series analyses or structural break tests that could assess whether financial market development affects inequality differently in times of economic crisis versus stability or incorporating different factors or variables (institutional and governance factors or alternative financial indicators).

5. Conclusion

The research paper aims to examine the complex relationship between financial market development and income inequality, considering both theoretical perspectives and empirical evidence. The debate remains ongoing as regards the literature, while some argue that financial expansion broadens access to capital and promotes inclusive growth, others highlight its tendency to reinforce existing disparities. Our findings confirm that financial markets alone do not inherently reduce inequality, their effects depend on broader economic structures and policies.

Empirical results indicate that traditional financial indicators, namely market capitalization, value traded, and turnover ratio, show little consistent association with inequality. This suggests that financial deepening, while beneficial for economic activity, does not necessarily extend its advantages to lower-income groups. However, broader financial system efficiency, captured by the Financial Markets Index and Financial Development Index, correlates with lower income disparity, emphasizing the importance of well-structured, accessible, and regulated financial systems.

Labor market conditions emerge as the most significant driver of inequality. Across all models, higher unemployment is consistently linked to greater income disparities, reinforcing that without stable jobs and wage growth, financial expansion alone cannot correct economic imbalances. GDP per capita also shows a negative relationship with inequality, supporting the idea that sustained economic growth contributes to more equitable income distribution, but only if complemented by policies that ensure widespread benefits.

The findings highlight key policy considerations regarding the essential labor market policies and that financial inclusion must go beyond market expansion. Financial development must be accompanied by job creation strategies, fair wages, and employment protections to meaningfully reduce inequality. Moreover, ensuring access to credit, improving financial literacy, and protecting consumers can help extend the benefits of financial markets to a broader population.

Financial markets are not a standalone solution to inequality. While they can support broader economic efficiency, their impact on income distribution depends on who benefits from financial expansion. Without complementary labor, fiscal, and regulatory policies, financial development risks reinforcing disparities rather than mitigating them. Thus, the challenge is not merely to expand financial markets, but to ensure that they serve as instruments of inclusive economic progress rather than amplifiers of existing divides.

Technium Social Sciences Journal
Vol. 69, 244-258, March, 2025
ISSN: 2668-7798
www.techniumscience.com

References

[1] Piketty, T. (2014). Capital in the twenty-first century. Harvard University Press.

[2] Milanovic, B. (2016). Global inequality: A new approach for the age of globalization. Harvard University Press.

[3] Beck, T., DemirgÃ¼Ã§-Kunt, A., & Levine, R. (2007). Finance, inequality, and the poor. Journal of Economic Growth, 12(1), 27-49.

[4] Clarke, G. R. G., Xu, L. C., & Zou, H. (2006). Finance and income inequality: What do the data tell us? Southern Economic Journal, 72(3), 578-596.

[5] Charlton, A., & Stiglitz, J. E. (2008). Capital market liberalization and poverty. Capital Market Liberalization and Development, 121-138.

[6] Stiglitz, J. E. (2012). The price of inequality: How today's divided society endangers our future. W.W. Norton & Company.

[7] Nguyen, C. P., Su, T. D., & Nguyen, T. V. H. (2023). The long-run effects of financial development on income inequality. International Review of Financial Analysis, 86, 102529.

[8] Destek, M. A., Sinha, A., & Sarkodie, S. A. (2020). The relationship between financial development and income inequality in Turkey. Journal of Economic Structures, 9(1), 11.

[9] Alshubiri, F. (2021). Financial deepening indicators and income inequality of OECD and Asian countries. The Journal of Economic Asymmetries, 24, e00211.

[10] Moradi, Z. S., Mirzaeenejad, M., & Geraeenejad, G. (2016). Effect of bank-based or market-based financial systems on income distribution in selected countries. Procedia Economics and Finance, 36, 510-521.

[11] Blau, B. M. (2018). Income inequality, poverty, and the liquidity of stock markets. Journal of Development Economics, 130, 113-126.

[12] Wooldridge, J. (2010). Econometric Analysis of Cross Section and Panel Data. MIT Press.

[13] Eurostat. Database on Income and Living Conditions (EU-SILC). Retrieved from https://ec.europa.eu/eurostat

[14] International Monetary Fund (IMF). Financial Development Index Database. Retrieved from https://data.imf.org

[15] World Bank. World Development Indicators (WDI). Retrieved from https://databank.worldbank.org/source/world-development-indicators

[16] World Bank. Global Financial Development Database (GFDD). Retrieved from https://databank.worldbank.org/source/global-financial-development

Technium Social Sciences Journal
Vol. 69, 244-258, March, 2025
ISSN: 2668-7798
www.techniumscience.com

[17] Arestis, P., & Demetriades, P. O. (1997). Financial development and economic growth: Assessing the evidence. The Economic Journal, 107(442), 783-799.

[18] Beladi, H., Chao, C.-C., Ngo, T.-W., & Yu, E. S. H. (2019). Capital market distortion, firm entry and wage inequality. China Economic Review, 56, 101312.

[19] Demirguc-Kunt, A., & Levine, R. (2009). Finance and inequality: Theory and evidence. Annual Review of Financial Economics, 1(1), 287-318.

[20] Galor, O., & Zeira, J. (1993). Income distribution and macroeconomics. Review of Economic Studies, 60(1), 35-52.

[21] Huynh, C. M., & Tran, N. H. (2023). Financial development, income inequality, and institutional quality: A multi-dimensional analysis. Cogent Economics & Finance, 11(2).

[22] Naceur, S. B., & Zhang, R. (2016). Financial development and income inequality: A panel data approach. Economic Modelling, 58, 81-91.

[23] Rajan, R., & Zingales, L. (2003). Saving capitalism from the capitalists: Unleashing the power of financial markets to create wealth and spread opportunity. Crown Business.

TECHNIUM SOCIAL SCIENCES JOURNAL

Technium Social Sciences Journal
Vol. 69, 244-258, March, 2025
ISSN: 2668-7798
www.techniumscience.com

Appendix
Correlation matrix

	Gini coefficient	**Income inequality**	**Market cap to GDP**	**Value traded to GDP**	**Turnover ratio**	**Listed companies**	**GDP per capita**	**Education tertiary**	**Unemployment rate**	**HICP inflation rate**	**Bonds yield**	**Financial Development Index**	**Financial Markets Index**
Gini coefficient	1.00	0.97	(0.03)	0.27	0.35	0.12	(0.33)	(0.20)	0.29	0.30	0.17	(0.13)	(0.07)
Income inequality	0.97	1.00	(0.05)	0.29	0.37	0.10	(0.41)	(0.31)	0.32	0.30	0.20	(0.20)	(0.14)
Market cap to GDP	(0.03)	(0.05)	1.00	0.44	0.28	0.45	0.25	(0.01)	0.19	(0.21)	(0.12)	0.37	0.31
Value traded to GDP	0.27	0.29	0.44	1.00	0.88	0.23	(0.06)	(0.17)	0.27	(0.01)	(0.01)	0.26	0.33
Turnover ratio	0.35	0.37	0.28	0.88	1.00	0.12	(0.13)	(0.29)	0.20	0.06	0.06	0.12	0.23
Listed companies	0.12	0.10	0.45	0.23	0.12	1.00	0.00	0.02	0.38	(0.20)	0.08	0.10	0.03
GDP per capita	(0.33)	(0.41)	0.25	(0.06)	(0.13)	0.00	1.00	0.61	(0.17)	(0.14)	(0.34)	0.56	0.50
Education tertiary	(0.20)	(0.31)	(0.01)	(0.17)	(0.29)	0.02	0.61	1.00	(0.06)	(0.09)	(0.30)	0.27	0.25
Unemployment rate	0.29	0.32	0.19	0.27	0.20	0.38	(0.17)	(0.06)	1.00	(0.17)	0.29	0.16	0.18
HICP inflation rate	0.30	0.30	(0.21)	(0.01)	0.06	(0.20)	(0.14)	(0.09)	(0.17)	1.00	0.20	(0.05)	(0.02)
Bonds yield	0.17	0.20	(0.12)	(0.01)	0.06	0.08	(0.34)	(0.30)	0.29	0.20	1.00	(0.16)	(0.12)
Financial Development Index	(0.13)	(0.20)	0.37	0.26	0.12	0.10	0.56	0.27	0.16	(0.05)	(0.16)	1.00	0.96
Financial Markets Index	(0.07)	(0.14)	0.31	0.33	0.23	0.03	0.50	0.25	0.18	(0.02)	(0.12)	0.96	1.00

Technium Social Sciences Journal
Vol. 69, 244-258, March, 2025
ISSN: 2668-7798
www.techniumscience.com

VIF summary

	Gini coefficient			
	Model 1	**Model 2**	**Model 3**	**Model 4**
Market capitalization to GDP	1.7701	1.6362	1.8008	1.6754
Total value traded to GDP	1.5286		1.4331	
Stock market turnover ratio		1.3244		1.2563
Listed companies	1.4948	1.4916	1.4646	1.4659
Financial Markets Index	1.7701	1.6936		
Financial Development Index			1.8296	1.7712
GDP per capita	2.5065	2.4397	2.5998	2.5484
Education attainment level - tertiary	1.7918	1.8704	1.7944	1.8733
Unemployment rate	1.5437	1.5389	1.5347	1.5316
Inflation rate (HICP)	1.1760	1.1797	1.1749	1.1801
Bond yield	1.3495	1.3414	1.3513	1.3443

	Income inequality			
	Model 5	**Model 6**	**Model 7**	**Model 8**
Market capitalization to GDP	1.7701	1.6362	1.8008	1.6754
Total value traded to GDP	1.5286		1.4331	
Stock market turnover ratio		1.3244		1.2563
Listed companies	1.4948	1.4916	1.4646	1.4659
Financial Markets Index	1.7701	1.6936		
Financial Development Index			1.8296	1.7712
GDP per capita	2.5065	2.4397	2.5998	2.5484
Education attainment level - tertiary	1.7918	1.8704	1.7944	1.8733
Unemployment rate	1.5437	1.5389	1.5347	1.5316
Inflation rate (HICP)	1.1760	1.1797	1.1749	1.1801
Bond yield	1.3495	1.3414	1.3513	1.3443