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RESEARCH ARTICLE

The Impact of Financial Development on Income Inequality: Evidence from OECD Countries

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Abstract
The financial system has an important component which adds to social welfare. Investment and consumption expenditures contribute to the increase in production by meeting the capital requirement. The study examines the impact of financial development on income inequality for 13 member nations of the OECD between 1993 and 2017 in light of the panel data method. In the study, income inequality is used as a proxy for the GINI coefficient, while the banks' domestic credit to the private sector is utilized to represent financial development. In addition, the model utilizes control variables, including per capita income, trade openness, inflation, and public spending. The panel data regression results reveal that financial development has a positive effect on income inequality. The results of the paper support the Income Inequality Widening Hypothesis, which suggests that the situation which favours individuals with high income levels who have access to financial resources continues when financial development increases, which in turn increases income inequality.

Keywords: Financial development, Income inequality, OECD countries, Panel data analysis

Introduction

Financial development exhibits various impacts on the economy (such as economic growth, foreign trade, inflation, and foreign direct investments). The impact of financial development on economic growth has received considerable attention in the literature. However, the importance of the effect of financial development on income inequality has only recently been revealed, with studies soon following, as income inequality has continued to rise around the world since the 1980s, despite high economic growth. Financial development is considered a significant factor which affects income inequality because it impacts access to financial services. Academics, policymakers, and international organizations are all interested in the influence financial development has on income inequality. For instance, policymakers want to know how income distribution and economic growth are affected by the policies. Understanding this relationship can make it possible for policymakers to evaluate

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whether financial development could build up inequality and when it would be beneficial to do so (Law and Tan, 2009: 155).

Financial development may reduce income inequality by increasing individual productivity and welfare to the degree that it provides equitable and simple access to financial services which would benefit everyone equally. Thus, financial development can help reduce income inequality to the extent that it enables the majority of society to easily access financial markets and benefit from financial services. In the presence of financial market imperfections, information asymmetry, transaction, and contract enforcement costs can produce binding credit constraints for the poor, who have poor credit and collateral histories and are not well-connected. Therefore, easing credit constraints through financial development can diminish income inequality by making it easier for the poor to borrow loans for projects, increasing efficiency in capital allocation, and facilitating the provision of funds to the poor through profitable investments (Aghion and Bolton, 1997; Galor and Moav, 2004; Galor and Zeira, 1993). Hence, income inequality can be reduced through financial progress to the extent that it loosens the credit constraints that the poor experience more and affects the poor more negatively, and to the extent that it allows and facilitates more entrepreneurs' access to financial services by including more financial intermediaries in the system (Claessens and Perotti, 2007:49). Otherwise, financial progress can increase income inequality in cases where individuals face difficulties accessing financial services and do not have equal opportunities (Ang, 2009). Financial market imperfections in the form of asymmetric information and contract costs can be particularly binding for the poor, who have difficulty providing collateral, and lack a credit history. The poor are thus the most affected by these financial imperfections (Banerjee and Newman, 1993; Galor and Zeira, 1993). Due to these conditions, the poor can be subjected to constraints in obtaining credit for their viable projects, resulting in inefficiency in capital allocation. As a consequence of this situation, financial development can increase income inequality.

There are three hypotheses suggested in terms of financial development's impact on income inequality: The inequality-widening (IW) hypothesis, the inequality-narrowing (IN) hypothesis, and the Greenwood and Jovanovic (1990) (GJ) hypothesis. The IW hypothesis suggests that income inequality rises as a result of financial development (Behrman et al., 2001; Bourguignon and Verdier, 2000; Claessens, 2006; Claessens and Perotti, 2007; Dollar and Kraay, 2002). Especially in societies with poor institutional quality, financial development provides benefits to the wealthy and well-connected individuals. Accordingly, the rich benefit from financial services while the poor borrow from the informal sector under difficult conditions. This is because well-connected, wealthy individuals are more likely to provide collateral and repay their loans than the poor, with vested interests affecting access to financial resources (Acemoglu et al., 2005; Rajan and Zingales, 2003; Perotti and Volpin, 2007). Thus, the poor people who have difficulty providing collateral and repaying loans may still

continue to have difficulty taking out loans even if financial markets develop. In this situation, financial development may increase inequality of income.

On the other hand, the IN hypothesis suggests that financial development reduces income inequality (Ang, 2010; Beck et al., 2004; Beck et al., 2007; Bittencourt, 2006; Clarke et al., 2006; Liang, 2006). This hypothesis contends that credit opportunities and simple access to credit expand as a result of financial development, and as a result, this enables the poor the opportunity to make investments by taking advantage of these credit opportunities. The poor have the opportunity to invest in physical and human capital for themselves and their families and establish small businesses with the credit opportunities they obtain (Ahmed and Masih, 2017; Banerjee and Newman, 1993; Canavire-Bacarreza and Rioja; 2008). Thus, financial development decreases income inequality by providing disadvantaged people with access to financial resources and expanding their financial options.

According to the GJ hypothesis, financial development and income inequality have a non-linear, inverted U-shaped connection. According to this hypothesis, income inequality increases with financial development when the development in financial markets is low at the first stages of financial development. After financial development reaches a particular threshold, it decreases income inequality. Accordingly, access to financial services is costly at the first stages of development, where financial markets are not developed enough and only the rich can access and benefit from financial services. Especially in the presence of powerful interest groups, access to credit can be costly. At this stage, where there is no equal access to financial services, income inequality increases with financial development. After financial development reaches a certain threshold value, the costs of financial intermediation services decrease, and a wider part of society benefits from accessing these services. Income inequality decreases with financial development as a result of more people benefiting from financial services.

Recent studies have examined financial development as a factor which affects income inequality. Therefore, while the existence of a financial system where the majority of society can benefit from financial resources can decrease income inequality, weakly functioning financial markets may be a factor that increases income inequality by preventing those with low incomes from investing in profitable assets or investments. Thus, one of the major instruments used in the fight against income inequality can be developments in the financial sector. Therefore, OECD countries that exhibit high levels of financial development constitute the main focus of the present study. The idea that this high level of development in OECD countries may enable a better determination of the effects of financial development on income inequality is one of the reasons for considering this group of countries in the analysis. Another motivation for the study is the detection that the number of studies in the literature which cover OECD countries is quite low. This study, which examines the relationship between

financial development and income inequality for 13 OECD countries with a panel data analysis approach for the period between 1993 and 2017, aims to contribute to the development of this gap in the literature.

The paper is comprised of five sections. In the second part, after this introduction, studies related to the subject in the literature have been analysed. The analysis data, the econometric technique, and the econometric results are presented in the third and fourth sections. The conclusion and evaluations are given in the fifth and final section.

Literature Review

As financial development has started to be seen as a factor affecting income inequality as well as a significant and effective instrument for reducing income inequality, researchers' interest in analysing the relationship between these two variables has increased in recent years. Consequently, the amount of research addressing the link between these two variables has also grown. The relationship between financial development and income inequality has been researched using the time series or panel data analysis approach for various time periods and countries.

The hypotheses explaining the link between financial development and income inequality are divided into two categories: linear and non-linear hypotheses. While the IW and IN hypotheses suggest that the relationship between these variables is linear, the GJ hypothesis suggests that the relationship in question is non-linear. The results of the studies investigating the impact of financial development on income inequality in the literature are contradictory in terms of the direction of this impact. The following studies have produced results that support the IW hypothesis: Adams and Klobodu, 2016; Altunbaş and Thornton, 2019; Argun, 2016; Arora, 2012; Balorinwa et al., 2020; Calderon and Serven, 2003; Chiu and Lee; 2019; Dabla-Norris et al., 2015; De Haan and Sturm, 2017; Demirgüç-Kunt and Levine, 2009; Denk and Cournede, 2015; Dollar and Kraay, 2002; Jaumotte et al., 2013; Kar and Kar, 2019; Li and Yu, 2014; Liu et al., 2017; Lopez, 2004; Motonishi, 2006; Rodriguez-Pose and Tselios, 2009; Sebastian and Sebastian, 2011; Sehrawat and Giri, 2015; Seven and Coşkun, 2016; Shahbaz et al., 2017; Topuz and Dağdemir, 2016; and Wahid et al., 2010, 2011). Conversely, the following studies have found results in favour of the IN hypothesis: Altunbaş ve Thornton, 2019; Ang, 2010; Barro, 2000; Batuo et al., 2010; Beck et al., 2007; Bittencourt, 2006, 2010; Bulir, 1998; Chiu and Lee, 2019; Clarke, Xu and Zuo, 2003; Hamori and Hashiguchi, 2012; Honohan, 2004; Jalil and Feridun, 2011; Kanberoğlu and Arvas, 2014; Kappel, 2010; Koçak and Uzay, 2019; Kunieda et al., 2014; Law and Tan, 2009; Li and Zou, 2002; Li Squire et al., 1998; Liang, 2006; Motonishi, 2006; Naceur and Zhang, 2016; Rashid and Intartaglia, 2017; Rehman et al., 2008; Shahbaz et al., 2015; Shahbaz and İslam, 2011; Thornton and Di Tommaso, 2019; Topuz and Dağdemir, 2016; and Westley, 2001, 2006. Some of the empirical

studies have concluded that the hypothesis of GJ is valid (Akıncı and Akıncı, 2016; Argun, 2016; Baiardi and Morana, 2016; Canavire-Bacarreza and Rioja, 2008; Chiu and Lee, 2019; Jalilian and Kirkpatrick, 2005; Kim and Lin, 2011; Koçak and Uzay, 2019; Law et al., 2014; Matsuyama, 2000; Nikoloski, 2012; Tan and Law, 2011; Tita and Aziakpono, 2016; Topuz, 2013; Topuz and Dağdemir, 2016; Zhang and Chen, 2015). The studies that use panel data analysis to examine financial development and the income inequality nexus have been examined following the methodology. The studies in question have been classified in a way to support three hypotheses in terms of their results and summarized to include author, period, and country information.

Table 1
Literature Review

Author/Period	Country	Hypothesis	Country Group Results
Lopez (2002)/1960-2000	87 countries	Inequality-widening hypothesis	FD→I (+)
Jaumotte et al. (2008)/1981-2003	51 developed, developing, and emerging countries	Inequality-widening hypothesis	FD→I (+)
Rodriguez-Pose and Tselios (2009)/1995-2000	102 European Union regions	Inequality-widening hypothesis	FD→I (+)
Sebastian and Sebastian (2011)/1960-2008	138 developed and developing countries	Inequality-widening hypothesis	FD→I (+)
Gimet and Lagoarde Segot (2011)/1994-2002	49 countries	Inequality-widening hypothesis	FD→I (+)
Jauch and Watzka (2012)/1960-2008	138 developed and developing countries	Inequality-widening hypothesis	FD→I (+)
Li and Yu (2014)/1996-2005	18 Asian countries	Inequality-widening hypothesis	FD→I (+)
Dabla-Norris et al. (2015)/1980-2012	97 countries	Inequality-widening hypothesis	FD→I (+)
Denk and Cournede (2015)/1970-2011	33 OECD countries	Inequality-widening hypothesis	FD→I (+)
Adams and Klobodu (2016)/1985-2011	21 Sub-Saharan African countries	Inequality-widening hypothesis	FD→I (+)
Argun (2016)/1989-2013	10 Developing countries	Inequality-widening hypothesis	FD→I (+)
Jauch and Watzka (2016)/1960-2008	138 developed and developing countries	Inequality-widening hypothesis	FD→I (+)
Seven and Coşkun (2016)/1987-2011	45 emerging countries	Inequality-widening hypothesis	FD→I (+)
Topuz and Dağdemir (2016)/1995-2011	94 countries	Inequality-widening hypothesis	FD→I (+) (Low and lower-middle, higher-middle-income countries)
De Haan and Sturm (2017)/1975-2005	121 countries	Inequality-widening hypothesis	FD→I (+)
Altunbaş and Thornton (2019)/1980-2015	121 countries	Inequality-widening hypothesis	FD→I (+) (Low and high-income countries)
Baysal-Kar and Kar (2019)/1990-2014	BRICS (Brazil, China, India, Russia and South Africa) countries	Inequality-widening hypothesis	FD→I (+)

Author/Period	Country	Hypothesis	Country Group Results
Chiu and Lee (2019)/1985-2015	59 countries	Inequality-widening hypothesis	FD→I (+) (Low-income countries
Li Squire et al. (1998)/1947-1994	49 developed and developing countries	Inequality-narrowing hypothesis	FD→(-)I
Clarke et al. (2003)/1960-1995	91 developed and developing countries	Inequality-narrowing hypothesis	FD→(-)I
Clarke et al. (2006)/1960-1995	83 countries	Inequality-narrowing hypothesis	FD→(-)I
Beck et al. (2007)/1960-2005	72 countries	Inequality-narrowing hypothesis	FD→(-)I
Batuo et al. (2010)/1990-2004	22 African countries	Inequality-narrowing hypothesis	FD→(-)I
Kappel (2010)/1960-2006	78 countries	Inequality-narrowing hypothesis	FD→(-)I
Hamori ve Hashiguchi (2012)/1963-2002	126 countries	Inequality-narrowing hypothesis	FD→(-)I
Kunieda et al. (2014)/1985-2009	120 countries	Inequality-narrowing hypothesis	FD→(-)I (Financially closed countries)
Naceur and Zhang (2016)/1961-2011	143 countries	Inequality-narrowing hypothesis	FD→(-)I
Topuz and Dağdemir (2016)/1995-2011	94 developed and developing countries	Inequality-narrowing hypothesis	FD→(-)I (High-income countries)
Rashid and Intartaglia (2017)/1985-2008	60 developing countries	Inequality-narrowing hypothesis	FD→(-)I
Altunbaş and Thornton (2019)/1980-2015	121 countries	Inequality-narrowing hypothesis	FD→(-)I (Upper-middle-income countries)
Chiu and Lee (2019)/1985-2015	59 countries	Inequality-narrowing hypothesis	FD→(-)I (High-income countries
Jalilian and Kirkpatrick (2005)/1960-1995	42 countries	Greenwood and Jovanovic (1990) hypothesis	Only above threshold of FD decreases I
Canavire-Bacarreza and Rioja (2008)/1960-2005	21 Latin American and Caribbean countries	Greenwood and Jovanovic (1990) hypothesis	Only above threshold of FD decreases I
Kim and Lin (2011)/1960-2005	65 countries	Greenwood and Jovanovic (1990) hypothesis	Only above threshold of FD decreases I
Tan and Law (2011)/1980-2000	35 developing countries	Greenwood and Jovanovic (1990) hypothesis	Only above threshold of FD decreases I
Nikoloski (2012)/1962-2006	76 countries	Greenwood and Jovanovic (1990) hypothesis	Only above threshold of FD decreases I
Topuz (2013)/1995-2011	94 developed and developing countries	Greenwood and Jovanovic (1990) hypothesis	Only above threshold of FD decreases I
Argun (2016)/1989-2013	10 developing countries	Greenwood and Jovanovic (1990) hypothesis	Only above threshold of FD decreases I
Baiardi and Morana (2016)/1985-2013	19 Euro Area countries	Greenwood ve Jovanovic (1990) Hipotezi	Only above threshold of FD decreases I
Tita and Aziakpono (2016)/1985-2007	15 African countries	Greenwood and Jovanovic (1990) hypothesis	Only above threshold of FD decreases I
Topuz and Dağdemir (2016)/1995-2011	94 developed and developing countries	Greenwood and Jovanovic (1990) hypothesis	Only above threshold of FD decreases I

Author/Period	Country	Hypothesis	Country Group Results
Azam and Raza (2018)/1989-2013	5 ASEAN (Malaysia, Singapore, Thailand, Indonesia and Philippines) countries	Greenwood and Jovanovic (1990) hypothesis	Only above threshold of FD decreases I
Chiu and Lee (2019)/1985-2015	59 countries	Greenwood and Jovanovic (1990) hypothesis	Only above threshold of FD decreases I

Note: FD: financial development, I: income inequality, →(+): positive effect, →(-): negative effect.

The studies in the literature have provided mixed findings in terms of country groups. In this context, there have been findings obtained that support both the IW and IN hypotheses as well as the GJ hypothesis for varying country groups. For example, the results of Topuz and Dağdemir (2016) indicated that the IW hypothesis is valid in low, lower-middle, and upper-middle income countries, while the IN hypothesis is valid in high-income countries, and the GJ hypothesis is valid in all the countries. Another study by Chui and Lee (2019) found that the hypothesis of GJ is valid in a total of 59 countries, 32 of which are high-income and 27 of which are low-income countries; however, the inequality-narrowing hypothesis was valid only in the high-income countries which were included in the study. Topuz and Dağdemir (2016) and Chui and Lee (2019) classified the countries that they analysed in terms of their income levels. Similarly, the findings of these two studies also supported the GJ hypothesis for all the examined countries.

Furthermore, a comprehensive review of the literature indicates that the number of studies concentrating on the OECD country group is quite low. Therefore, this study aims to contribute to the development of the literature in terms of the country group examined.

Data And Econometric Model

In this section, the effect of financial development on income inequality is investigated for 13 OECD countries,[1] including Türkiye, through the panel data method by implementing annual data from the period between 1993 and 2017 on Equation (1). In this regard, the study focused on OECD countries. One of the main characteristics of OECD countries is their high level of financial development. Therefore, the main reason for considering these countries in this study is that such an approach may enable a better definition of the effect of financial development on income inequality. However, the variables considered in the analysis were established by taking into account the criteria of both a balanced panel and the long-term availability of existing common data.

$$LGINI_{it} = \beta_0 + \beta_1 DCP_{it} + \beta_2 LPCGDP_{it} + \beta_3 LINF_{it} + \beta_4 GCE_{it} + \beta_5 LOP_{it} + \varepsilon_{it} \quad (1)$$

1 United States, United Kingdom, Denmark, Sweden, Norway, Türkiye, Australia, Mexico, Czech Republic, Hungary, Chile, The Republic of Korea, Israel.

The i and t subindexes in the equations represent region and time, respectively. Variables and their definitions are given in Table 2 below.

Table 2
Definitions of the Variables

Variables	Definition	Source
LGINI	Gini coefficient	World Bank
DCP	Domestic credit to private sector by banks (% of GDP)	
Control Variables		
LPCGDP	GDP per capita (constant 2010 US$)	
LINF	Consumer price index (2010 = 100)	
GCE	General government final consumption expenditure (% of GDP)	
LOP	OP= Exports of goods and services (current $)+ Imports of goods and services/GDP (current $)	

In the study, LGINI indicates income inequality, DCP indicates financial development, LPCGDP indicates per capita income level, LINF indicates inflation, GCE indicates government expenditures, and LOP indicates foreign trade. The L at the beginning of variables indicates the logarithmic transformation. The analyses have been conducted through Stata 14.0 and the Eviews 10 package programme.

Econometric Method and Results

In this section, tests and their results are provided using the panel data estimation method of Equation (1), which was set up to find out how economic growth affects income inequality. Tests were performed to notice whether the variables were cross-sectionally dependent. Then, the unit root test was used, which was chosen based on the cross-sectional dependency status. Finally, the method, selected according to the findings obtained, has been estimated, and the results have been presented.

Cross-Section Dependence Test

The use of 2nd generation unit root tests is more suitable in cases where there is cross-section dependence between units. Cross-section dependency of the variables is investigated by the Breusch-Pagan (1980) Lagrange multiplier (LM), which can be used in the case of T>N. Table 3 below reports the results of the cross-section dependence test.

Table 3
Breusch-Pagan LM Test Results

Variables	t-statistic
LGINI	962.4776[a]
DCP	843.8948[a]
LPCGDP	1739.578[a]
LINF	1813.356[a]
GCE	459.4832[a]
LOP	1847.524[a]

Note: a indicates the significance level of 1% statistically

As seen in Table 3, the basic hypothesis established as 'H_0: No cross-section dependence' for all the variables is rejected at the significance level of 1% statistically, and it is determined that there is cross-section dependence in the variables.

Unit Root Test

The Multivariate Augmented Dickey-Fuller (MADF) Unit Root Test, pioneered by Taylor and Sarno (1998), was used to check the variables' level of stationarity. It is a 2nd generation unit root test that is used when T>N and takes into account the correlation between units. The results are shown in Table 4 below. While the H_0 hypothesis reveals that the series have a unit root, the alternative hypothesis indicates that they do not have a unit root. The rejection of the H_0 hypothesis reveals that the variables are stationary at this level.

Table 4
MADF Unit Root Test Results

Variables	MADF (Level) test statistic	Critical value approximately 5%
LGINI	350.572	31.844
DCP	50.832	
LPCGDP	173.345	
LINF	2711.603	
GCE	308.412	
LOP	140.472	

Note: The lag length is determined as 1.

As seen in Table 4, the MADF test statistic value calculated for all variables is greater than the 5% critical value. Therefore, the H_0 hypothesis stating that the variables have a root has been rejected, and it has been determined that the variables do not have a unit root and are stationary at the level.

Results

the results of the tests applied to determine the estimator of the panel model, which is established to determine the effect of financial development on income inequality, are provided in Table 5 below.

Table 5
Test Results on The Determination of Equation (1) Panel Regression Estimator

Variables	POLS	FEM	REM	Resistant Estimator
c	4.376035[a] (0.2169728)	3.386966[a] (0.1426079)	3.470099[a] (0.1490618)	3.47[a] (0.594)
DCP	0.0003015 (0.0002326)	0.000677[a] (0.0000794)	0.000691[a] (0.0000797)	0.00069[a] (2.0e-04)
LPCGDP	-0.0940783[a] (0.0183769)	0.0064392 (0.0247572)	-0.0127511 (0.0238211)	-0.0128 (0.0728)
LINF	-0.0051086 (0.0145692)	-0.0171192[a] (0.0039164)	-0.0169251[a] (0.0039396)	-0.0169[a] (0.0065)
GCE	-0.0261545[a] (0.0023542)	-0.008023[a] (0.0013944)	-0.0083004[a] (0.0013978)	-0.0083[a] (0.0035)
LOP	0.0202342[b] (0.009887)	0.0070987 (0.0071203)	0.0115668[c] (0.0069563)	0.0116 (0.0187)
R^2		0.3328	0.3313	
F Test		639.98 [a]	1353.91[a]	
LM Test			3207.88[a]	
Hausman			6.75 REM	

Diagnostic Tests	Test Statistic	Decision
Levene, Brown and Forsythe Heteroscedasticity Test	W0 = 5.3270380[a] W50 = 4.5753401[a] W10 = 5.1727929[a]	H_0 is rejected. There is a heteroscedasticity problem.
Baltagi-Wu LBI Autocorrelation Test	0.40538876	There is an autocorrelation problem.
Breusch Pagan LM Test Cross-section Dependence Test	179[a]	H_0 is rejected. There is a cross-section dependence problem.

Note: The values between parentheses give the standard error. a, b, and c respectively indicate the significance level of 1%, 5%, and 10% statistically.

As seen in Table 5, firstly, the F test has been applied to choose between Pooled Ordinary Least Squares (POLS) and Fixed Effects Model (FEM) in the estimation of the established model, and then FEM has been chosen with the rejection of the H_0 hypothesis, which includes estimation by POLS, at the 1% significance level statistically. On the other hand, the Breusch-Pagan Lagrange Multiplier LM test has been applied to choose between the Random Effects Model (REM) and POLS, with REM being chosen with the rejection of the H_0 hypothesis, which includes estimation by POLS, at the significance level of 1% statistically. Finally, the fact that the H_0 hypothesis has not been rejected by the Hausman test applied to choose between FEM and REM has revealed the necessity of an estimate by REM. The regression model analyses the presence of unit and time effects. The F and LM test statistics for the existence of time effects are 0.46 and 0.01, respectively, and are statistically insignificant. Therefore, the null hypothesis H_0, which states that time effects are equal to zero, cannot be rejected. As a result, the estimations are continued through the unidirectional unit effect panel regression model.

If the basic assumptions of panel data models, such as autocorrelation, heteroscedasticity, and horizontal cross-section dependence in error terms, are not met, the estimates obtained are inconsistent and biased. Therefore, effective results are obtained by making robust estimations for correcting standard errors without touching the parameter estimates (Yerdelen Tatoğlu, 2016: 251-252). The heteroscedasticity problem has been investigated by the Levene, Brown, and Forsythe test to evaluate the diagnostic test results of the panel regression estimated by the REM estimator. As can be seen in Table 4 above, there is a heteroscedasticity problem detected by the rejection of the H_0 hypothesis. On the other hand, there is an autocorrelation problem determined by the Baltagi-Wu test. The Baltagi-Wu LBI test statistic has revealed the autocorrelation problem in the model. The results of the Breusch-Pagan LM test performed to determine whether there is a cross-section dependence problem in the estimated model have revealed the existence of cross-section dependence. The results of the Breusch-Pagan LM test performed to determine whether there is a cross-sectional dependence problem in the estimated model have revealed the existence of cross-sectional dependence. When cross-sectional dependency exists, disregarding it may result in estimates of regression coefficients that are biassed, inconsistent, and ineffective. The obtained test statistics revealed the existence of autocorrelation and cross-sectional dependency problems, as well as heteroscedasticity problems in the model. In such a case where all three problems are present, the panel regression equation must be estimated with the robust estimator method, which allows adjusted standard errors to be yielded. Considering all these results, the REM estimation has been reestimated through the resistant estimator method, taking all three problems into account.

The results in Table 4 have revealed that DCP, used as indicator of financial development, affects LGINI positively at the significance level of 1% statistically. Accordingly, financial development affects income inequality positively. On the other hand, when the results of the control variables are examined, it has been determined that the LINF and GCE affect income inequality negatively, at a significance level of 1% statistically. According to this result, government expenditures and inflation reduce income inequality.

Conclusion and Evaluation

Income inequality can cause poverty and worsen socioeconomic conditions in societies. These negative conditions naturally affect the investment level negatively, leading to low economic growth and a decrease in the living standards of societies. If income inequality is not tackled with appropriate policies, it can cause permanent harm to such societies, lasting for generations. Thus, it is important to establish policies to fight against the negative effects that income inequality creates on the economy. Inequality in access to resources and power distribution are important variables in the formation of income inequality. The functioning of financial markets affects income inequality in this setting. Therefore, the impact of financial

development on income inequality has been analysed through the panel data method for 13 OECD countries for the period between 1993 and 2017.

According to the panel regression results regarding 13 OECD countries, financial development affects income inequality positively by increasing the value of the GINI coefficient. The result in question reveals that financial development increases income inequality. This finding corroborates those found by Altunbaş and Thornton (2019), Denk and Cournede (2015), and Rodriguez-Pose and Tselios (2009). On the other hand, it has been determined that government expenditures and inflation, which have been used as control variables in the study, reduce income inequality. The finding, which determined that government expenditures decrease income inequality, supports the findings reached by Goni et al. (2011) and Kyriacou, MuineloGallo, and RocaSagalés (2016). Moreover, the finding which reveals that inflation decreases income inequality corroborates the results of Argun (2016), Topuz and Dağdemir (2016), and Emek and Tatoğlu (2020).

The panel regression analysis used to examine the influence of financial development on income distribution indicated that financial development increases income inequality. The rationale behind the outcome can be explained by the fact that loans are directed to capital-intensive sectors that use advanced technology and are more productive, rather than labour-intensive sectors that adopt simple technologies. Thus, the difference between the incomes of the workers in these sectors increases and produces income inequality. In other words, the increase in financial services may have increased income inequality by increasing the demand for skilled labour and thus increasing their wages. However, it can be said that transfers and the establishment of skilled labour, especially through public expenditures in the OECD countries, have contributed to the decrease in income inequality through public expenditures. The fact that increases in inflation reduce income inequality can be explained by this increase in inflation invigorates the economy and fosters economic growth. Accordingly, high-income groups are negatively affected by this increase compared to middle- and low-income groups. Another possible explanation is that inflation causes a change in income distribution from creditors to debtors through financial assets.

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