



Does Fiscal Policy Affect Financial Development? The Case of Comparative Country¹

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ABSTRACT

This study examines the relationship between fiscal policy and financial development in developed and developing countries from 1990 to 2021. The objective is to investigate the impact of fiscal policy on financial development by employing panel data analysis. The empirical analysis focuses on G7 and D8 countries, using the Konya (2006) Panel Causality Test and Hatemi-J (2012) Panel Causality Test. The IMF Financial Development Index indicates financial development, while fiscal policy variables include tax revenue, public debt, and public expenditure. The findings show that when the asymmetric effect is not considered, there is a causal relationship between the variables in fewer countries. However, a causal relationship is found in more countries when the asymmetric effect is considered. The impact of changes in fiscal policy on financial development may not always be in the same direction or magnitude, as they can vary depending on the country and specific circumstances.

Keywords: Financial Development, Fiscal Policy, G7 Countries, D8 Countries

JEL Classification: C23, E62, G20

Maliye Politikası Finansal Gelişimi Etkiler mi? Karşılaştırmalı Ülke Örneği

ÖZ

Bu çalışma, 1990-2021 yılları arasında gelişmiş ve gelişmekte olan ülkelerde maliye politikası ile finansal gelişim arasındaki ilişkiyi incelemektedir. Çalışmanın amacı, panel veri analizi kullanarak maliye politikasının finansal gelişim üzerindeki etkisini araştırmaktır. Ampirik analiz, G7 ve D8 ülkelerine odaklanarak Konya (2006) Panel Nedensellik Testi ve Hatemi-J (2012) Panel Nedensellik Testi kullanılarak gerçekleştirilmiştir. Finansal gelişimi ölçmek için IMF Finansal Gelişim Endeksi kullanılırken, maliye politikası değişkenleri vergi gelirleri, kamu borcu ve kamu harcamalarını içermektedir. Bulgulara göre asimetrik etki dikkate alınmadığında daha az ülkede değişkenler arasında nedensel bir ilişki bulunmaktadır. Ancak, asimetrik etki dikkate alındığında daha fazla ülkede nedensel bir ilişki tespit edilmiştir. Maliye politikasındaki değişikliklerin finansal gelişim üzerindeki etkisi, ülkeye ve spesifik koşullara bağlı olarak değişkenlik gösterebildiğinden her zaman aynı yönde veya aynı büyüklükte gözlenmemektedir.

Anahtar Kelimeler: Finansal Gelişmişlik, Maliye Politikası, G7 Ülkeleri, D8 Ülkeleri

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1. INTRODUCTION

The primary goal of countries is to achieve economic growth and development. To pursue this goal, countries implement all coordinated and effective policies, including monetary and fiscal ones. Central banks implement monetary policies and independent institutions that maintain economic stability. On the other hand, fiscal policies are applied by governments with objectives such as economic growth and development, economic stability, optimal resource allocation, fair income distribution, and the reduction of regional disparities. From this perspective, achieving the economic development goals of a country depends on critical criteria such as sustainable economic growth, improved welfare for its citizens, and competitiveness on an international scale. The ability of countries to sustain long-term growth also depends on various factors. Furthermore, these factors and their order of importance vary based on the country's development level. According to Chirwa and Odhiambo (2016), the factors affecting economic growth in developing countries, in order of importance, foreign aid, foreign direct investment, fiscal policy, trade, physical capital, human capital, demographics, monetary policy, natural resources and geographic conditions, regional, political, and financial factors while in developed countries, key factors are physical capital, fiscal policy, human capital, trade, demographic factors, monetary policy, and financial and technological factors.

It is known that numerous variables impact economic growth; it is also important to understand the direction of relationships among these variables. This knowledge allows for identifying complex interconnections among the factors influencing economic growth, facilitating the selection and implementation of appropriate policies and strategies. Thus, this study examines the relationship between financial development and fiscal policy instruments that impact economic growth. Fiscal policy involves managing a country's public revenues, setting expenditure policies, and implementing borrowing strategies. On the other hand, financial development refers to the depth, diversity, accessibility, and efficiency of financial institutions and markets within an economy. Improvements in the financial sector institutions, tools, and markets that constitute financial development support economic growth by transforming savings into investments. Even though researching the relationship between countries' levels of financial development and economic growth is a current topic, it is not new; its roots date back to Bagehot's 1873 study named "Lombard Street: A Description of the Money Market". Bagehot emphasised the importance of a well-functioning financial system for economic growth. While not addressing financial development directly in today's terms, he analysed the financial structure of England, which had one of the most advanced banking systems of that era. He noted the contributions of a developed banking system to economic growth through credit provision, liquidity management, and investment incentives. One of the earliest studies positing the importance of financial development for economic growth was conducted by Schumpeter (1911), who argued that the banking system enables economic growth by financing productive investments. Subsequent early studies (e.g., King and Levine, 1993; Rajan and Zingales, 1998; Levine, 2005) also support the view that financial development positively impacts economic growth. Jung (1986) argued that economic growth increases demand for the financial sector, thereby fostering financial development, while Khan (2001) suggested a bidirectional causality where economic growth and financial development support each other. The literature contains numerous studies examining the relationship and direction of causality between economic growth and financial development; however, a consensus has not yet been reached.

The liberalisation in international trade and globalisation has also boosted financial liberalisation. Following the 1980s, the integration of financial markets accelerated, fostering more open and interconnected markets, which were expected to increase investment opportunities and accelerate economic growth. However, alongside these benefits, financial

liberalisation has made countries more vulnerable to global shocks and crises (Lehkonen, 2015:2040). Studies conducted, especially after the 2008 crisis, have identified that the impact of financial development on economic growth is positive up to a certain point but turns negative beyond that threshold. According to Rousseau and Wachtel (2011), the frequency of financial crises increases as the positive effect of financial deepening on growth decreases. Their study indicates that excessive financial deepening or rapid credit growth can lead to inflation and weaken banking systems, ultimately resulting in financial crises that prevent growth. In countries lacking a sufficiently robust regulatory framework to benefit from financial development, excessive financial deepening often leads to financial crises.

Fiscal discipline and stable macroeconomic policies are deemed necessary for the smooth operation of financial systems. Until the global crisis that originated in the United States in 2008, fiscal policies remained in the background among the economic policies. However, the crisis brought fiscal policy back into focus, and the subsequent European Debt Crisis further increased interest in fiscal policies and highlighted their long-term effects (İsmihan & Özkan, 2012:348). As the importance of fiscal policy grew, the number of studies began to increase that researched the impact of fiscal policy instruments such as public borrowing, tax revenues, and public expenditures on financial development (Duramany Lakkoh, 2020; Ma & Lv, 2023). Both monetary and fiscal policies influence the taxation of financial intermediaries as well as the provision of financial services (Demirgüç-Kunt & Levine, 2008:40). Financial markets are the primary channels for transferring tax revenues into the economic system (Arin et al., 2009:33). Tax reforms can also have significant effects on financial markets (Golob, 1995:19). Reforms to be made in the tax system may have direct and indirect impact on financial markets. Tax changes on capital income and the deductibility of interest expenses from taxes create a direct effect. Capital and interest income taxes directly affect individuals' saving and investment decisions. High capital taxes may reduce savings rates by reducing financial investment returns (Barro, 1990). While this causes a decrease in the amount of funds directed to financial intermediary institutions, it may also limit the deepening of capital markets. In addition, tax practices may affect the preferences between debt and equity financing. While the deductibility of interest expenses may lead firms to prefer debt financing, the existence of a capital gains tax may make equity financing less attractive (Modigliani & Miller, 1963). This may lead to inefficiencies in resource allocation. The fact that taxes positively affect financial markets through their positive effects on savings, investment and growth creates an indirect impact. An increasing income level means more savings and financial investments, which contribute to expanding banking and capital markets (Romer, 1990). Consequently, in contrast, transferring tax revenues through the financial system can positively impact financial development; tax revenues that reduce private sector investments may negatively affect financial development (Clark, 2006:106-107). Public expenditures, another fiscal policy tool, may lead to a crowding-out effect on private-sector spending and potentially cause a negative impact on financial development (Naceur et al., 2014:216). The effect of public expenditures on financial development varies depending on the composition and efficiency of expenditures. Public expenditures directed towards productive infrastructure investments, education, and digitalisation can increase financial inclusion by strengthening the infrastructure of the financial system (Beck et al., 2007). In addition, public expenditures on regulatory and supervisory capacity supporting financial systems increase confidence in the market and the efficiency of financial intermediation (La Porta et al., 1998). On the other hand, inefficient expenditures can negatively affect the private investment environment by causing distortions in resource allocation. This emerges as a factor limiting financial development. The primary source for financing public expenditures is tax revenue. However, due to insufficient tax revenues, the state may resort to borrowing, which can take the form of government bonds or treasury bills. The issuance of these government securities serves as a benchmark for private sector debt instruments, which can support financial system development (Kagochi, 2019). Consequently, since the government debt market partially funds

public expenditures, their movement also affects market depth, liquidity, returns, interest rates in financial markets, and financial development. Public borrowing can impact financial markets in two ways. First, the public debt market benefits the financial system by allowing the nominal yield curve to accurately inform actual borrowing costs by managing macroeconomic volatility, such as inflation volatility (which should ideally be low). Second, to ensure competitive borrowing costs for the government, sufficient issuance of debt helps to control inflation and maintain macroeconomic stability, allowing monetary policy to be effectively implemented (Kumhof & Tanner, 2005). This underscores the importance of stability in fiscal policy as well.

This study investigates the relationship between fiscal policy tools (taxes, public expenditures, and public debt) and financial development. In the literature, the relationship between a selected fiscal policy tool and financial development has often been examined independently. However, this study uses tax revenues, public expenditures, and debt variables as fiscal policy tools. The measure of financial development used is the Financial Development Index, first calculated by the International Monetary Fund (IMF) in 2012. A literature review shows that various variables, such as banking activities and credit to the private sector, have been used as indicators of financial development. In this study, the IMF Financial Development Index is preferred due to its comprehensive nature in line with recent studies (Svirydzenka, 2016; Jiang & Ma, 2019; Majeed et al., 2021; Emenekwe et al., 2022; Allam et al., 2024). Two country groups were selected to examine the relationship between fiscal policy and financial development by development level: G7 countries were chosen as a sample of developed nations, and D8 countries were selected as a sample of developing nations. This approach will allow insights into fiscal and financial development policies directly related to economic growth. In addition, G7 countries are economies with developed financial markets and strong institutional structures. In contrast, D-8 countries are developing countries with different economic and financial development levels. Comparing these two groups of countries is essential in understanding how the effects of fiscal policy instruments on financial development vary according to the level of development, institutional infrastructure and policy capacity of the countries (La Porta et al., 1998; Levine, 2005). In addition, the differences in the composition of public expenditures, the structure of tax systems and the nature of the implemented fiscal policies provide a suitable variety for empirical analyses (Beck et al., 2007). The availability of long-term and reliable data on these countries enables sound econometric analyses.

The study is expected to contribute to the literature in several ways. First, no previous studies were found that examine the impact of all fiscal policy tools on financial development together. Second, given the inclusion of both developed and developing countries, the findings can provide recommendations specific to these groups. The study will guide fiscal policies applicable in different financial contexts by clarifying the relationship between fiscal policies and financial development. Third, the relationship between fiscal policy tools and financial development is analysed using symmetric and asymmetric relationships. This approach highlights the importance of asymmetric information in markets by enhancing the realism of the findings.

2. LITERATURE REVIEW

2.1. Tax Revenues and Financial Development

The relationship between tax revenues, a key source of financing for public investments, and financial deepening has an influential role in determining fiscal policies. The amount of tax revenue affects public borrowing limits, thereby influencing the total amount of circulating funds in the markets, which positively contributes to the development of the financial system (Şahin, 2020:690). Most studies in the literature (Mohan, 2008; Oz-Yalaman, 2019; Pata & Ela,

2020; Gnanngnon, 2022; Lompo, 2023) focus on the impact of financial development on tax revenues. Only a few studies examine the effect of tax revenues on financial development. One of these studies, conducted by Akram (2016) in Pakistan, explored the role of financial markets in generating tax revenue from 1975 to 2014. The findings indicated that the number of bank branches and market value positively impacted tax revenues in both the short and long term. As a result, taxes influence the development of the financial sector, while the financial sector also affects tax collection. Maleki et al. (2017) found that capital formation is impacted by financial development and economic growth. Their study analysed capital gains tax across Iran, Denmark, Estonia, Italy, the Netherlands, and Sweden. The results showed that an increased rate of capital gains tax decreased the financial development growth rate with three periods lags, while it boosted the economic growth rate. Loganathan et al. (2017) examined the relationships among financial development, tax revenues, inflation, and economic growth in Malaysia from 1970 to 2015. Findings indicated a causal relationship flowing from taxation to inflation and financial development. Karakaş (2021) studied the impact of cumulative tax rates on dividend income on stock market trading volumes for OECD countries between 2000 and 2019. The results showed that reducing taxes on dividend income positively affected stock market trading volumes, suggesting a contribution to financial development. Lastly, Karakaş and Saygılı (2024) found that both direct and indirect taxes in Turkey positively impacted financial development in the short and long term from 2000 to 2022.

2.2. Public Expenditures and Financial Development

Another fiscal policy instrument, public expenditures, is used not only to meet social needs but also to achieve goals such as economic growth, increased welfare, and income equality (Karaş, 2022:13). Through public expenditures, governments intervene in markets to improve the efficiency of financial markets also fulfil their regulatory function by intervening in markets. Studies investigating the relationship between financial development and public expenditures are limited in the literature. Naceur et al. (2014), in their research on the factors affecting financial development in the MENA region from 1960 to 2006, found that public expenditures pull liquidity from financial markets, thereby reducing the ability of financial intermediation to mobilise the savings necessary for financing private sector investments. They observed that public expenditures significantly adversely affect stock market activities and transaction volume. Higher government expenditures increase uncertainty about fiscal sustainability, crowd out private investments, and negatively affect stock market size. According to Chen et al. (2019), countries with higher financial development tend to make less productive public expenditures. Li (2022) demonstrated that public expenditures and bank regulations simultaneously affect credit and money supply. The public expenditures have a multiplier effect on credit supply. In another study, Kapaya (2023) examined the role of public expenditures and demographic regulatory characteristics in selected African economies, specifically their impact on bank-based financial development through credit to the private sector. The findings confirm the positive effects of capital formation and final consumption expenditures on short-term and long-term financial development.

2.3. Public Debt and Financial Development

Another fiscal policy tool is public debt. It is known that domestic public borrowing has increased in recent years, especially in developing countries. While domestic public debt is considered to reduce macroeconomic risks, there is no consensus on its effect on financial development. Domestic public borrowing by the government reduces private-sector borrowing limits, leading to the crowding out of the private sector. Caballero and Krishnamurthy (2004)

examined this crowding-out effect of public debt on both developed and developing countries, finding that the effect is more pronounced in developing countries and becomes even more significant during crises. Hauner (2009) is a prominent study on this topic, examining the impact of domestic public debt through two perspectives: “safe assets” and “lazy banks.” The safe assets view suggests that when governments borrow from banks, in other words, banks hold government-issued bonds as part of domestic public debt, financial stability is enhanced, contributing positively to financial development. The lazy banks' view claims that banks prefer to debt to the government without taking risks, limiting their debt to the private sector and ultimately crowding out the private sector as public debt increases. Hauner tested these views on 73 middle-income countries and found support for the lazy banks perspective. Similar findings were reported by Ersoy (2012) and Altaylıgil and Akkay (2013), who examined Turkey using various techniques and found that increases in domestic public debt negatively impacted financial development. Kipyego et al. (2022) examined the period from 1964 to 2019 in Kenya, finding a statistically significant negative relationship between domestic public debt and financial development in the short and long term. Additionally, they found a positive relationship between external public debt and financial development. On the other hand, some studies support Hauner's view of safe assets. For instance, Sekmen et al. (2020) used the IMF index as a financial development measure in Turkey. They demonstrated that an increase in domestic public debt positively impacted financial development. Similarly, Abdel-Halim and Ghazi (2022) tested Jordan's safe assets and lazy banks hypotheses and found results supporting the safe assets view. In Jordan, the positive effect of domestic public debt on financial development. Abusomwan (2023) examined the relationship between financial development and public debt across 31 African countries. The finding supported the safe assets view in most countries, although the lazy bank's view was supported in Nigeria and a few others. Abbas, Ramzan, and Fatima (2021) explored the relationship between financial development and public borrowing, incorporating institutional quality into their analysis. Their findings suggest that while institutional quality and public debt positively affect financial development, public debt has an adverse effect on financial development without institutional quality. According to Ismihan and Ozkan (2012), public debt can harm financial development in countries where the government is the largest borrower from banks. Moreover, as financial depth decreases, the negative effects of public debt on financial development and macroeconomic outcomes increase.

3. METHODOLOGY

Identifying cross-sectional dependence between variables in panel data analyses is crucial for testing relationships. In today's world, shocks occurring in one country can affect others due to increased globalisation. Ignoring this phenomenon would lead to inconsistent and biased results in the analyses. For this reason, the importance of cross-sectional dependency has been highlighted in analyses conducted by Pesaran (2006). Based on this, it is essential to prioritise the analysis of cross-sectional dependence in panel data analyses. The LM test was first developed by Breusch and Pagan (1980) to test for cross-sectional dependence; the test is used mainly when the time dimension is greater than the cross-sectional dimension ($T > N$). In cases where the time and cross-sectional dimensions are large ($T = N$), the CD_{LM} test developed by Pesaran (2004) is used. The CD_{LM} test assumes no cross-sectional dependence when the time and cross-sectional dimensions approach infinity ($T \rightarrow \infty$ and $N \rightarrow \infty$). Therefore, deviations in the results may occur when $N > T$, Pesaran (2004) developed the CD test, which requires that N be greater than T ($N > T$). Furthermore, Pesaran et al. (2008) developed the LM_{adj} test, a modified version of the LM test that utilises the mean and variance of the LM statistic. This test can be applied in cases where the time dimension is greater than the cross-sectional dimension ($T > N$) and where the cross-sectional dimension is larger than the time dimension ($N > T$).

As mentioned, the cross-sectional dependence test is crucial for determining which tests should be used in subsequent stages. Therefore, it is essential to analyse the cross-sectional dependencies of the variables and models first. In this study, given that seven cross-sections are selected for G7 countries, 8 for D8 countries, and 32 years of sample, the results of cross-sectional analysis using the LM and LM_{adj} tests, which can be applied when $T > N$, have been taken into account.

In econometric analyses, it is essential to test the stationarity of variables before testing situations such as the existence of a long-term relationship and causality relationship between variables. This is done through unit root tests, which assess the stationarity of the variables and transform them into stationary forms using their differenced values if they are not stationary at their level values. Estimations made through models established with non-stationary series will lead to erroneous results. Therefore, in panel data analyses, it is necessary to consider cross-sectional dependence before testing the stationarity of the variables using unit root tests. Pesaran's (2007) CADF unit root test, a second-generation unit root test, has been employed to test the stationarity of the variables due to the presence of cross-sectional dependence among the variables used in this study. The CADF unit root test was developed by Pesaran (2007) and takes into account the lagged cross-sectional averages of the Augmented Dickey-Fuller (ADF) regression (Pesaran, 2007).

After determining the stationarity of the series, the next step is to test for causality between the series, for which the Konya (2006) Panel Causality Test is applied first, followed by the Hatemi-J (2012) Asymmetric Panel Causality Test. Konya's (2006) Panel Causality Test is based on the SUR (seemingly unrelated regressions) estimator and the Wald test using bootstrap probabilities specific to cross-sectional units. In this test, whether the series is unit-rooted or not and whether there is a cointegration relationship between the series is not crucial. This means the analysis is still feasible even if the series is unit-rooted and there is no long-term cointegration relationship (Konya, 2006). In this test, the null hypothesis (H_0) states no causal relationship between the series.

In Konya's (2006) Panel Causality test, causality is analysed only based on the series' movements, regardless of their shocks. By separating the series into positive and negative shocks, the analysis can include the asymmetric information problem, often viewed as market failure. Assessing the effects of asymmetric information is crucial, especially in contemporary contexts. In this regard, the Panel Asymmetric Causality Test was developed by Hatemi-J (2012). As mentioned, this test separates the series into positive and negative shocks, thus incorporating asymmetric information into the analysis (Hatemi-J, 2012). The Hatemi-J (2012) Asymmetric Panel Causality Test can be applied to both stationary and non-stationary series, with the null hypothesis (H_0) stating that there is no causal relationship between the series.

The study aims to measure the relationship between fiscal policy instruments and financial development by testing the following fundamental hypotheses:

H_{0A} : There is a direct relationship between tax revenues and financial development.

H_{0B} : There is a direct relationship between government expenditures and financial development.

H_{0C} : There is a direct relationship between public debt and financial development.

Based on this, the model constructed in the study is as follows:

$$fd_{it} = \beta_0 + \beta_1 exp_{it} + \beta_2 tax_{it} + \beta_3 debt_{it} + \varepsilon_{it}$$

In the equation, fd_i represents financial development, exp_i the share of public expenditures in GDP, tax_i the share of tax revenues in GDP, $debt_i$ the share of public debt in GDP, β_i the coefficient term of the variables, ε_i error terms, i cross-section units and t the time interval.

4. EMPIRICAL RESULTS AND DISCUSSION

This study examines fiscal policy instruments' impact on financial development in developed and developing countries from 1990 to 2021. The study covers the period 1990-2021, which creates a time constraint. The fact that the years in which the data of the sample countries are regularly obtained in the study are limited to this period causes a time constraint for the study. Within the scope of the study, public expenditures, tax revenues and external debt amounts were obtained from the World Bank database. The financial development index is calculated as a ratio between 0 and 1 among the variables used in the study. A value approaching 0 indicates low financial development in a country, while a value approaching 1 signifies high financial development. Fiscal policy instruments, government expenditures, tax revenues, and public borrowing are ratios within each country's GDP.

Table 1: Descriptive Statistics

Countries	Variables	Obs.	Mean	Std. Dev.	Min.	Max.
G7 Countries	fd	224	0.75	0.13	0.35	0.96
	exp (%)	224	19.21	2.73	13.55	24.94
	tax (%)	224	34.13	6.29	22.91	46.07
	$debt$ (%)	224	92.47	46.09	27.50	262.49
D8 Countries	fd	256	0.32	0.14	0.12	0.73
	exp (%)	256	9.74	3.57	0.91	16.06
	tax (%)	256	16.06	5.69	5.12	30.67
	$debt$ (%)	256	45.24	22.85	7.28	129.83

Source: Authors' results.

As seen in Table 1, financial development is higher in G7 countries than in developing countries. Regarding fiscal policy instruments, developed countries are observed to engage in higher government spending, tax collection, and borrowing levels than developing countries. Indeed, increased debt indicates greater financial development, as higher financial development facilitates access to borrowing channels. In the study, separate models were established and analysed for G7 and D8 countries. Because the economic structures, institutional arrangements, market depths, policies and reactions to shocks of developed and developing countries are different, the impact of fiscal policy instruments on financial development may produce different responses in developed and developing countries. In a single model, this difference is embedded in the average and increases the possibility of being ignored. In addition, group-based estimation is much more meaningful in developing policy recommendations for different groups. This study analysed the impact of fiscal policy instruments on financial development in developed and developing countries over the 1990-2021 period using the panel data method. In this context, Table 2 presents the cross-sectional dependence and homogeneity test results related to the variables and the model.

Table 2: Cross-Sectional Dependency Test Results

Countries	Variables and Model	LM		CD _{LM}		CD		LM _{adj}	
		Stats.	Prob.	Stats.	Prob.	Stats.	Prob.	Stats.	Prob.
G7 Countries	fd	52.497	0,000*	4.860	0,000	-3.595	0,000	4.665	0,000*
	exp	58.694	0,000*	5.816	0,000	-3.169	0,001	4.224	0,000*
	tax	36.165	0.021**	2.340	0.010	-3.112	0.001	3.338	0.000*
	debt	45.792	0,000*	3.825	0,000	-2.924	0,002	7.651	0,000*
	Model	269.580	0,000*	38.357	0,000	14.381	0,000	43.845	0,000*
D8 Countries	fd	41.056	0,053***	1.745	0,041	-2.801	0,003	15.703	0,000*
	exp	45.547	0,019**	2.345	0,010	-1.893	0,029	4.139	0,000*
	tax	64.173	0.000*	4.834	0.000	-2.885	0.002	2.474	0.007*
	debt	51.161	0,005*	3.095	0,001	-2.082	0,019	11.406	0,000*
	Model	142.019	0,000*	15.236	0,000	9.471	0,000	18.667	0,000*

Source: Authors' results. * at level %1, ** at level %5 and *** at level %10 indicates statistical significance.

According to the results presented in Table 2, the null hypothesis that there is no cross-sectional dependence between the units for each variable is rejected, indicating the existence of cross-sectional dependence at the unit level. In the cross-sectional dependency test for the models, the null hypothesis was again rejected, and the existence of cross-sectional dependency was confirmed. Furthermore, based on the homogeneity test results for the models in Table 2, the null hypothesis H_0 , proposing that the slope coefficient of the models is homogeneous for both country groups, was rejected, leading to the conclusion that the slope coefficient is heterogeneous.

The CADF unit root test results for the variables used in the study are presented in Table 3.

Table 3: CADF Panel Unit Root Test Results

			t-bar	cv10	cv5	cv1	z[t-bar]	Prob.
G7 Countries	fd	Cons.	-1.982	-2.210	-2.330	-2.550	0.570	0.284
		Cons.&Trend	-2.687	-2.730	-2.840	-3.060	-1.044	0.148
	exp	Cons.	-1.947	-2.210	-2.330	-2.550	-0.471	0.319
		Cons.&Trend	-0.735	-2.730	-2.840	-3.060	4.824	1.000
	tax	Cons.	-1.499	-2.210	-2.330	-2.550	0.790	0.785
		Cons.&Trend	-2.506	-2.730	-2.840	-3.060	-0.498	0.309

D8 Countries	I(1)	debt	Cons.	-1.449	-2.210	-2.330	-2.550	0.930	0.824
			Cons.&Trend	-1.264	-2.730	-2.840	-3.060	3.235	0.999
		fd	Cons.	-4.094	-2.210	-2.330	-2.550	-6.512	0.000*
			Cons.&Trend	-4.012	-2.730	-2.840	-3.060	-5.026	0.000*
		exp	Cons.	-3.692	-2.210	-2.330	-2.550	-5.382	0.000*
			Cons.&Trend	-3.809	-2.730	-2.840	-3.060	-4.416	0.000*
		tax	Cons.	-4.108	-2.210	-2.330	-2.550	-6.551	0.000*
			Cons.&Trend	-4.395	-2.730	-2.840	-3.060	-6.178	0.000*
		debt	Cons.	-3.872	-2.210	-2.330	-2.550	-5.889	0.000*
			Cons.&Trend	-4.475	-2.730	-2.840	-3.060	-6.419	0.000*
	I(0)	fd	Cons.	-2.083	-2.210	-2.330	-2.550	-0.912	0.181
			Cons.&Trend	-2.553	-2.730	-2.840	-3.060	-0.686	0.246
		exp	Cons.	-2.337	-2.210	-2.330	-2.550	-1.677	0.047*
			Cons.&Trend	-2.719	-2.730	-2.840	-3.060	-1.217	0.112
		tax	Cons.	-2.191	-2.210	-2.330	-2.550	-1.237	0.108
			Cons.&Trend	-2.309	-2.730	-2.840	-3.060	0.099	0.539
		debt	Cons.	-2.073	-2.210	-2.330	-2.550	-0.882	0.189
			Cons.&Trend	-2.544	-2.730	-2.840	-3.060	-0.657	0.256
		fd	Cons.	-4.373	-2.210	-2.330	-2.550	-7.803	0.000*
			Cons.&Trend	-4.564	-2.730	-2.840	-3.060	-7.149	0.000*
	I(1)	exp	Cons.	-3.980	-2.210	-2.330	-2.550	-6.619	0.000*
			Cons.&Trend	-4.803	-2.730	-2.840	-3.060	-7.918	0.000*
		tax	Cons.	-3.627	-2.210	-2.330	-2.550	-5.557	0.000*
			Cons.&Trend	-3.774	-2.730	-2.840	-3.060	-4.607	0.000*
		debt	Cons.	-3.670	-2.210	-2.330	-2.550	-5.686	0.000*
			Cons.&Trend	-4.411	-2.730	-2.840	-3.060	-6.657	0.000*

Source: Authors' results. * at level %1, ** at level %5 and *** at level %10 indicates statistical significance.

According to the results in Table 3, the stationarity of the variables used in the study was examined through two models: with a constant and with a constant and trend. In both models, the variables were founded non-stationary, as the p-values of the variables were greater than 0.05

at their level values indicating the presence of a unit root. The first differences in the variables were taken to achieve stationarity, and they were re-evaluated for unit roots using the two models. Since the p-values of the first-differenced variables were less than 0.05, they became stationary at the I(1) level.

In the Kónya (2006) Panel Granger Causality test, the null hypothesis assumes no causality relationship between the variables, while the alternative hypothesis assumes a causality relationship between the variables. The results of the Kónya (2006) Panel Granger Causality test conducted in this study are presented in Table 4.

Table 4: Kónya (2006) Panel Causality Test Results

G7 Countries		Canada	Germany	France	UK	Italy	Japan	USA	
	Wald Stats. (Bootstrap Prob.)								
	exp→fd	0.048 (0.767)	0.098 (0.833)	4.136 (0.031**)	1.376 (0.070***)	7.382 (0.038**)	9.797 (0.155)	2.652 (0.216)	
	tax→fd	13.847 (0.000*)	0.561 (0.553)	0.689 (0.655)	0.352 (0.818)	1.192 (0.599)	1.093 (0.792)	0.279 (0.445)	
	debt→fd	1.616 (0.138)	1.684 (0.541)	1.190 (0.487)	0.485 (0.410)	3.097 (0.184)	18.808 (0.065***)	0.026 (0.778)	
D8 Countries		Bangladesh	Egypt	Indonesia	Iran	Malaysia	Nigeria	Pakistan	Türkiye
	Wald Stats. (Bootstrap Prob.)								
	exp→fd	2.531 (0.651)	0.098 (0.878)	6.615 (0.008*)	2.201 (0.064***)	0.596 (0.334)	2.662 (0.955)	0.692 (0.923)	7.758 (0.071***)
	tax→fd	0.177 (0.767)	0.005 (0.970)	2.682 (0.185)	0.067 (0.997)	3.043 (0.912)	0.600 (0.515)	6.467 (0.137)	2.536 (0.438)
	debt→fd	4.119 (0.339)	0.007 (0.971)	9.197 (0.202)	0.715 (0.464)	0.440 (0.370)	12.292 (0.206)	0.320 (0.520)	0.864 (0.165)

Source: Authors' results. * at level %1, ** at level %5 and *** at level %10 indicates statistical significance.

According to Table 4, a causality relationship between government spending and financial development was found in France, the United Kingdom, and Italy among developed countries, from tax revenues to financial development in Canada and from borrowing to financial development in Japan. Accordingly, fiscal policy instruments are used to develop the financial system in developed countries. Among developing countries, causality from government spending to financial development was observed only in Indonesia, Iran, and Turkey. In developing countries, it is observed that fiscal policy tools cannot be used effectively to develop the financial system, since the main objectives are economic growth and development. This finding highlights the developmental differences between developing and developed countries more clearly. As these developed countries have already achieved economic maturity, they have established infrastructures that allow them to utilise fiscal and financial policies for different purposes from developing countries.

In Kónya (2006) Panel Causality test, causality relationships are analysed by examining the series' movements without considering shocks. To include the asymmetric information problem—which is often seen as a market failure—positive and negative shocks should be incorporated into the analysis, especially given the prevalence of asymmetric information today. In this context, Hatemi-J (2012) developed the Asymmetric Panel Causality Test, which separates the series into positive and negative shocks and includes asymmetric information in the analysis (Hatemi-J, 2012). Hatemi-J (2012) Asymmetric Causality Test can be applied to stationary and non-stationary series. In this test, the null hypothesis H_0 assumes no causality relationship between the series. The results of the Hatemi-J (2012) Asymmetric Causality Test for the G7 developed countries are presented in Table 5.

Table 5: G7 Hatemi-J (2012) Panel Asymmetric Causality Test Results

Countries	Causality	positives		negatives	
		Wald Stat.	prob.	Wald Stat.	prob.
Canada	exp→fd	1.797	0.616	1.635	0.743
Germany		0.565	0.904	3.407	0.613
France		242.298	0.000*	7.454	0.092***
UK		6.404	0.094***	1.76	0.958
Italy		0.252	0.969	1.503	0.769
Japan		1.857	0.603	7.221	0.005*
USA		5.506	0.138	0.912	0.894
Canada	tax→fd	3.065	0.382	2.099	1.000
Germany		1.265	0.737	1.109	0.981
France		2.537	0.469	8.739	0.161
UK		1.301	0.729	4.500	0.997
Italy		18.364	0.000*	2.306	0.951
Japan		834.015	0.000*	0.547	1.000
USA		15.305	0.002*	11.019	0.760
Canada	debt→fd	0.011	1.000	5.925	0.360
Germany		107.605	0.000*	1.068	0.678
France		2.507	0.474	9.626	0.012**
UK		0.078	0.994	5.254	0.285
Italy		0.011	1.000	2.041	0.359

Japan	11.98	0.007*	3.723	0.013**
USA	17.64	0.001*	3.276	0.176

Source: Authors' results. * at level %1, ** at level %5 and *** at level %10 indicates statistical significance.

Table 5 shows the causality relationships between the variables' positive and negative shocks. Accordingly, in France and the UK, an increase in government spending leads to an increase in financial development, while in France and Japan, a decrease in government spending results in a decline in financial development. It can be stated that public expenditures in the relevant countries are carried out to support the financial infrastructure for the development of the financial system. In Italy, Japan, and the USA, an increase in tax revenues drives financial development. The critical point is that tax policies in G7 countries are designed in a way that does not hinder financial development. On the contrary, tax policies are used to support financial development. This indicates that tax revenues in G7 countries are transferred to the market through financial systems. It can also be stated that tax policies in G7 countries do not affect the decisions of individuals and support the financial system by not affecting the amount of funds transferred to the financial system.

From the perspective of public borrowing, an increase in public borrowing in Germany, Japan, and the USA is a cause of financial development, while in France and Japan, a decrease in public borrowing leads to a reduction in financial development. The results indicate that the increase in public borrowing in Germany, Japan, and the USA supports the safe asset view, while the outcomes for Japan and France align with the lazy banks view. These findings are similar to previous studies conducted by Hauner (2009), Ersoy (2012), Altaylıgil and Akkay (2013), Mun and Ismail (2015), and Kipyego et al. (2022).

The results of the Hatemi-J (2012) Asymmetric Causality Test for the developing D8 countries are given in Table 6.

Table 6: D8 Hatemi-J (2012) Panel Asymmetric Causality Test Results

Countries	Causality	positives		negatives	
		Wald Stat.	prob.	Wald Stat.	prob.
Bangladesh	exp→fd	0.320	0.956	0.252	0.969
Egypt		10.09	0.018**	0.85	0.837
Indonesia		0.268	0.966	6.814	0.078***
Iran		14.453	0.002*	5.883	0.117
Malaysia		0.923	0.820	0.519	0.915
Nigeria		92.361	0.000*	2.169	0.538
Pakistan		0.529	0.912	6.922	0.074***
Türkiye		4.721	0.193	21.736	0.000*
Bangladesh	tax→fd	0.155	0.985	0.821	0.844

Egypt		10.968	0.012**	0.539	0.910
Indonesia		0.042	0.998	2.099	0.552
Iran		66.942	0.000*	10.149	0.017**
Malaysia		5.213	0.157	46.437	0.000*
Nigeria		1.853	0.603	103.981	0.000*
Pakistan		0.791	0.852	0.101	0.922
Türkiye		56.946	0.000*	2.127	0.546
Bangladesh		10.811	0.013**	1.858	0.602
Egypt		45.120	0.000*	0.058	0.996
Indonesia		2.045	0.563	2.289	0.515
Iran		2.359	0.501	1.528	0.676
Malaysia	debt→fd	60.810	0.000*	3.412	0.332
Nigeria		1.050	0.789	5.687	0.128
Pakistan		5.525	0.137	0.046	0.997
Türkiye		1.273	0.736	1.944	0.584

Source: Authors' results. * at level %1, ** at level %5 and *** at level %10 indicates statistical significance.

According to Table 6, in Egypt, Iran, and Nigeria, an increase in government expenditures leads to a rise in financial development, while in Indonesia, Pakistan, and Turkey, a decrease in government expenditures results in a decline in financial development. In Egypt, Iran, and Turkey, an increase in tax revenues drives financial development, whereas a decrease in tax revenues in Iran, Nigeria, and Malaysia contributes to a reduction in financial development. An increase in public borrowing in Bangladesh, Egypt, and Malaysia is also a cause of financial development. The findings regarding the effect of government expenditures on financial development align with the research conducted by Kapaya (2023). Results that prove that public debt positively influences financial development in Bangladesh, Egypt, and Malaysia support the view of safe assets. These findings are similar to studies by Abdel-Halim and Ghazi (2022) and Abusomwan (2023), which examine examples from developing countries.

The findings indicate a positive relationship between tax revenues and financial development, which is consistent with the studies of Bayar and Karamelikli (2017) and Pata and Ela (2020). Based on the findings obtained in this study, it was identified that when asymmetric effects are not considered, there are fewer instances of causality between fiscal policy instruments and financial development in a limited number of countries. However, when asymmetric effects are considered, there are causality relationships in more countries. Therefore, it can be stated that asymmetric effects are significant and that the asymmetric information problem is an essential factor in the markets. As a result, it can be stated that the asymmetric effect is greater in developing country markets and its impact on the markets is more pronounced than in developed countries.

5. CONCLUSION

This study investigates the relationship between fiscal policy tools and financial development in G7 and D8 countries, using annual data from 1990 to 2021, analysing both symmetric relationships and asymmetric relationships that account for information asymmetry—a critical factor in market failures.

The study's findings reveal that different development levels among countries significantly affect financial development, as seen in various macroeconomic indicators. Developed countries hold comparative advantages that position them as safe havens, attracting capital flows, both a cause and effect of their advanced financial development. Financial development is a crucial tool for countries, facilitating the effective transfer of tax revenues into the system through financial markets, directing public expenditures toward targeted areas, and providing easier access to financial resources for public borrowing. As a result, countries can leverage tax revenues by channelling them into financial markets to enhance investment and growth potential, distribute public expenditures efficiently to achieve social and economic objectives and benefit from more favourable terms in financial markets when borrowing. As the findings show, in developed countries, fiscal policy tools predominantly support goals such as sustainable economic growth and regional balance. In contrast, in developing countries, the focus remains on establishing and enhancing a healthy financial system. However, the findings suggest that developing D8 countries can not utilise fiscal policy tools effectively to promote financial development. As a consequence, challenges occur in accessing financial resources. At the same time, these countries may have to bear higher costs when borrowing from abroad.

The results support the claim that domestic public borrowing in developing countries bolsters confidence by encouraging participation in the financial system. In countries with relatively low financial development, public domestic borrowing may serve as a tool to strengthen confidence in financial markets. For developing countries, the effective use of fiscal policy tools is crucial for advancing financial development. This includes channelling public spending to promote the financial system, implementing tax incentives within relevant sectors, transferring tax revenues via financial markets, and using borrowed resources to ensure financial stability and foster financial system development. Additionally, fiscal policies must be internalised by the population. In the end, this study provides valuable implications for policymakers in crafting strategies that align fiscal policy tools with the goal of financial development.

Ethic Statement Acknowledgement

This study has been prepared by the rules of scientific research and publication ethics.

Authors' Contribution

The authors have contributed equally.

Declaration of Interest

There is no conflict of interest for the authors or third parties arising from the study

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