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The Impact of Shadow Banking on Government Size in Selected Countries

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Abstract:
Objective: Shadow banking comprises a set of non-bank financial intermediaries such as pension funds, investment funds, insurance companies, and other non-bank financial intermediaries that function similarly to traditional banks in terms of performance but are not supervised by the central bank. Given the expansion of shadow banking activities and its impact on real sectors of the economy, this research aims to investigate the effect of shadow banking on the size of government in selected countries (including two groups of developed and developing countries).
Methods: This research was conducted using the Panel Vector Autoregression (VAR) model over the period 2002-2022 in selected countries.
Results: The results obtained for the group of developed countries indicate that the expansion of shadow banking assets has not led to an increase in the size of government. However, conversely, according to the research findings for the group of developing countries, there is a positive relationship between shadow banking and the size of government. That is, the expansion of shadow banking assets in the group of developing countries has resulted in an increase in the size of government.
Conclusions In this study, the impact of shadow banking on the size of government in selected countries has been examined using the Panel VAR model. The results indicate that the expansion of

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shadow banking assets in developed countries has not led to an increase in the size of government. However, conversely, in developing countries, the expansion of shadow banking assets has led to an increase in the size of government.

1. Introduction

Shadow banking comprises non-bank financial intermediaries whose activities are conducted outside the regulations of traditional banks. This means that the activities of these financial intermediaries are not supervised by the central bank (Rottner, 2023). Although shadow banking is not a precisely defined concept, many experts believe that regulatory arbitrage is one of its fundamental drivers (Huang, 2018). Shadow banking has existed in various forms in developed economies for a long time, such as asset-backed securities, repurchase agreements, commercial paper with asset backing, and collateralized debt obligations. For example, Pozsar et al. (2013) conducted a study showing that in the United States, shadow bank debt exceeded $20 trillion in the mid-1990s, surpassing traditional bank debt.

From a performance perspective, shadow banks resemble traditional banks. Both lend to their customers, but their capital procurement methods differ. This can be considered one of the differences between shadow banks and traditional banks. Another difference between shadow banks and traditional banks is government supervision of their activities. Since traditional bank activities are regulated by the government, traditional banks must bear the costs of this intervention. However, such costs do not exist in the shadow banking system, resulting in lower loan interest rates in shadow banks compared to traditional banks (Agirman et al., 2013). One consequence of regulating traditional bank activities has been the expansion of shadow banking activities. For example, in the 1980s, 15% of total credits in the United States were provided by shadow banks, a figure that increased to 40% before the financial crisis of 2007-2008. Additionally, according to the argument put forward by Bojak et al. in 2018, the share of shadow banks in mortgage lending between 2007 and 2015 nearly doubled (Hasman & Samartin, 2022)

The term "shadow banking" was first coined by Paul McCulley in 2007, defining it as institutions and financial intermediaries whose activities are wholly or partially outside the traditional banking system. Shadow banks contribute to economic growth by improving credit availability, reducing the cost of financial products, and offering services that traditional banks cannot provide. Shadow banks can promote economic growth through lower interest rates and higher returns. However, because these financial intermediaries are not subject to supervision, they may be highly exposed to risks such as maturity mismatch, liquidity, and leverage, ultimately becoming a source of systemic risk for financial systems (Athari et al., 2024; FSB, 2020). Considering the role of shadow banks in injecting more liquidity, it may improve the performance of financial markets and

economic activities. However, increased liquidity injection by shadow banks alongside traditional banks may also lead to market instability.

Given the role of shadow banking systems in various sectors of the economy, numerous studies have been conducted. Estiak and Serletis (2016) demonstrated in their study that the relationship between leverage in shadow banks and the level of economic activity is nonlinear and asymmetric. This means that compared to positive rates, stronger effects are observed on real production growth rates. Conversely, in traditional banks, the relationship between leverage and the level of economic activity is linear and symmetrical due to the active management of their balance sheets and targeting a constant leverage ratio (Serletis & Xu, 2019). Istiak (2019) examined the nature of leverage shocks in shadow banking systems. In this research, they investigated how the overall economy is affected by the shadow banking sector over time. The results showed that contractionary monetary policy to control shadow bank leverage was not effective, suggesting that controlling shadow bank leverage alongside contractionary monetary policy could prevent asset bubbles and maintain financial stability. Buta et al. (2016) demonstrated in their study how securities and shadow banking facilitate profitability for the entire financial sector. Additionally, studies by Five et al. (2022), Meeli et al. (2021), Kojoufski et al. (2020), Five et al. (2019), Yang et al. (2019), Gorten & Metrik (2010, 2012), Sitorli et al. (2012), and Koval et al. (2009) have examined the impact of expanding shadow banking activities on various sectors of the economy. However, relatively little attention has been paid to the consequences of shadow banking development on macroeconomic variables such as economic growth, government size, income distribution, and overall macroeconomic stability. Therefore, this research aims to investigate the effect of expanding shadow banking activities on government size in selected countries.

The relationship between the financial sector, especially shadow banking, and government size is currently of great importance to most world economies, as governments need financial resources to cover budget deficits and perform their duties. Therefore, governments secure funding through various means such as borrowing from central banks, foreign borrowing, asset and wealth sales, tax revenues, and securities issuance. Each of these methods has its limitations. For example, increasing taxes leads to negative societal reactions. Alternatively, selling more national assets such as oil, gas, coal, and precious metals is subject to internal factors such as extraction and production capacity, domestic consumption, as well as external factors such as demand conditions and global market prices, a country's share and position in regional and global markets, and the political relations between countries. To reduce costs and limitations, countries should seek to design savings-based financial instruments such as asset-backed securities, commercial papers with asset backing, and repurchase agreements to finance themselves.

Given the importance of shadow banking and its impact on real sectors of the economy, this research aims to investigate the effect of shadow banking on the size of government in selected countries (including both developed and developing countries) during the period 2002-2021, using the Panel VAR method. To estimate this effect, data from 27 selected countries (including two groups of developed and developing countries) have been utilized. Accordingly, based on the research objective, the following hypothesis is proposed:

1. Shadow banking has a positive effect on the size of government.

This research is organized as follows: after the introduction, empirical studies on shadow banking and its effects on various economic sectors are examined in the second section. The third section discusses the research methodology and introduces the model. Finally, the research concludes with model estimation and result interpretation.

Research Background

The impact of shadow banking on various economic sectors after the financial crisis of (2007-2008) has received attention. However, direct studies on the effect of shadow banking on the size of government have not been found, and most studies conducted have focused on the impact of the expansion of shadow banking activities on the stability of financial markets, the effectiveness of monetary policy, and macroeconomic consequences, especially economic growth. Among these studies, mention can be made of Gong et al. (2021), Wang et al. (2020), Zhang et al. (2020), Yang et al. (2019), Zhou and Tuvari (2019), Kronick & Wu (2019), Chen et al. (2018), among others. These are among the researchers who have examined the impact of shadow banking on financial stability and the effectiveness of monetary policy. Additionally, researchers such as Zhang et al. (2020), Zhou and Tuvari (2019), Parisi and Komorowski (2019), Yang et al. (2019), Feve et al. (2019), Ratiwa and Azikpona (2017), Cho et al. (2017), and Barbo and Siwak (2016) have examined the macroeconomic consequences of the expansion of shadow banking activities. However, Morera and Savo (2017), Turner (2017), Adrian (2014), Pozsar et al. (2010), Adrian and Shin (2009), and Adrian and Shin (2008) are among the researchers who have theoretically examined the subject of shadow banking. For example, Adrian and Shin (2009) examined the causes of the financial crisis and the role of shadow banking in this crisis. Turner (2017) in his book states that financial markets play an important role in economic growth by creating credit, but if credit creation exceeds a certain limit, it may lead to financial instability and economic crises.

Zhang et al. (2020) examined the effects and macroeconomic consequences of shadow banking in the United States. For this purpose, a dynamic stochastic general equilibrium model was used, and the results showed negative relationships between the overall productivity factors and the development of the shadow banking system. Zhou and Tuvari (2019) investigated the impact of shadow banking on economic growth in 27 developed and developing countries. For this

purpose, panel data using the GLS method for the years (2006-2018) were used. The results of this study showed a positive long-term relationship between shadow banking and economic growth. Parisi and Komorowski (2019) conducted research with the aim of shadow banking and economic efficiency. For this purpose, data from 26 countries were used. The results of this study showed that the effect of shadow banking on macroeconomic variables such as economic growth, unemployment, liquidity, interest rates, and inflation has been negative after the financial crisis. In addition, the results of this study show that shadow banking had no direct effect on inflation unless it affected due to weak financial regulations. Also, according to the results of this study, the impact of shadow banking on interest rates was weak. Yang et al. (2019) examined the effect of shadow banking on economic activities in China. For this purpose, they used a dynamic stochastic general equilibrium model for analysis. The results of this study showed that regulatory shocks were the main reason for the growth of shadow banking in China from 2009 to 2016. Additionally, financial friction in shadow banking creates a dual financial accelerator mechanism and thus shows how shadow banking negatively affects the effectiveness of macroeconomic precautionary policies. Fu et al. (2019) investigated the interaction between shadow banking and traditional banking in the US economy using a dynamic general equilibrium model. Their findings indicate that the increase in shadow banking activity strengthens the transmission of shocks to the real economy by increasing regulatory arbitrage. Ratiwa and Azikpona (2017) examined the long-term equilibrium relationship between economic growth and the development of non-bank financial institutions and its causality in three African economies, namely Egypt, Nigeria, and South Africa. For this purpose, panel data for the period (1971-2013) and the vector error correction model test and the Johansen test were used. The results showed a significant positive relationship between the development of non-bank financial institutions and economic growth, and this relationship was mostly bilateral. In South Africa, the relationship between the development of non-bank financial institutions and economic growth was positive and significant, but the relationship between the development of non-bank financial institutions and economic growth in this country was one-sided and mostly from the development of non-bank financial institutions. In addition to the above results, the results of this study for Nigeria showed that there is a weak relationship between the development of non-bank financial institutions and economic growth.

Chu and colleagues (2017) examined the impact of shadow banking on real production in both the long and short terms using data from China. The results indicated that in the long term, the expansion of shadow banking activities could lead to an increase in the wage gap between skilled and unskilled workers, which might result in a decrease in real production, whereas in the short term, the development of the shadow banking system could lead to an increase in economic

growth. Barbou and Sivak (2016) conducted a study titled "Determinants of Macroeconomic Indicators" using quarterly panel data from 2008 to 2015 in 15 European Union countries, including Romania. The results of this research show that changes in shadow banking assets in the aforementioned countries are negatively influenced by GDP growth, the liquidity ratio to GDP, short-term interest rates, and the ratio of investment fund assets to GDP. Conversely, stock indices and long-term interest rates have a positive impact on changes in overall shadow banking. Based on the findings of previous research, it can be stated that, to the best of the researcher's knowledge, no study has been conducted on the impact of shadow banking on the size of the government in selected countries. Therefore, the present study is novel and innovative.

Research Methodology

In this study, a Panel VAR model is employed to investigate the shadow banking effect on economic growth and the size of the government during the period of 2002 to 2022; a method that combines the autoregressive model with panel data. In this method, all model variables are endogenous, allowing the researcher to account for cross-sectional heterogeneity in the model (Love and Zicchino, 2006). The Panel VAR model has the same structure as the VAR model, meaning all variables are assumed to be endogenous, with the addition of a time-series dimension. Thus, the Panel VAR model used in this study can be represented as follows:

$$Y_{it} = (G, SH, GDP, GFC, TRADE) \qquad \text{Equation (1)}$$

where:

- Y_{it}: the vector of endogenous variables, including the government size.
- SH: shadow banking. The shadow banking variable uses the index of shadow banking assets.
- GDP: economic growth. The economic growth variable uses the index of per capita income.
- G: government size. The government size variable uses the index of government's share of gross domestic product (GDP).
- GFC: gross fixed capital formation. The gross fixed capital formation variable uses the index of gross fixed capital formation as a percentage of GDP.
- TRADE: trade openness. The trade openness variable uses the index of trade volume as a percentage of GDP.

To estimate the model, data from 27 selected countries (including both developed and developing countries) are used. Shadow banking index data are collected from the Financial Stability Board's annual reports, while data for economic growth, government size, gross fixed capital formation, and trade openness variables are collected from the World Bank database.

Since the aim of this study is to examine the effect of shadow banking on government size, the first step involves conducting the Fisher unit root test to

determine the variables' stationarity, followed by determining the long-term equilibrium relationships among variables using the Kao cointegration test, which is suitable for panel data. Subsequently, the instantaneous response function indices and variance decomposition analysis are used to examine the dynamic relationships and interactions among the model variables.
Descriptive statistics of the data used in this study are presented in Table (1).

Table (1): Descriptive Statistics of Variables Used in the Model

Development countries							
Variables	**Obs**	**Mean**	**Std. Dev.**	**Maximum**	**Minimum**	**Skewness**	**Kurtosis**
G	336	17.94875	4.566274	26.24334	8.418385	-0.438565	2.244880
GDP	336	49108.05	20126.12	112417.9	24368.97	1.576574	4.868185
GFC	336	22.37826	3.942312	54.27419	15.71163	2.133342	16.33581
NBFI	336	7.761114	12.99759	85.56320	0.051300	3.564632	16.51867
Trade	336	135.1709	115.1656	442.6200	22.28663	1.234130	3.177247
Developing countries							
Variables	**Obs**	**Mean**	**Std. Dev.**	**Maximum**	**Minimum**	**Skewness**	**Kurtosis**
G	231	15.13239	4.269551	29.32164	7.257458	0.422939	2.828053
GDP	231	8837.753	4797.591	21138.65	793.1010	0.406305	2.864385
GFC	231	24.37632	7.487571	44.51877	11.96065	0.945009	3.354085
NBFI	231	0.933833	2.877960	18.73930	0.000600	4.869978	26.55306
Trade	231	51.39524	15.51850	96.10264	22.10598	0.351582	2.927879

Source: Researcher's Calculation

Estimation of Empirical Model

In this section of the study, the estimation of the empirical model and the results obtained from it are discussed.

1.1. Reliability Test

Before estimating the model, it is necessary to examine the reliability of the variables because the unreliability of the variables causes problems with false regression both in panel data and time series data. In this study, to examine the reliability of the model variables, the Fisher test, which is suitable for tabular data, has been used. In this test, the null hypothesis indicates the unreliability of the variables, and the alternative hypothesis confirms the reliability of the variables. The results obtained from this study are presented in Table (2). As can be seen, in developed countries, all variables have become stationary in first differences. However, in developing countries, the economic growth and gross domestic investment variables have been stationary at the level, but the government size, shadow banking, and trade openness variables have become stationary with one differentiation.

Table (2): Results of Variable Reliability Test Using Fisher Test

Unit root test – Fisher – PP						
	Development countries			Developing countries		
Variable	Test statistics	P-Value	Degree of convergence	Test statistics	P-Value	Degree of convergence
G	176.783	0.0000	I(1)	153.124	0.0000	I(1)
GDP	328.940	0.0000	I(1)	42.6198	0.0053	I(0)
GFC	175.186	0.0000	I(1)	40.9840	0.0083	I(0)
NBFI	127.165	0.0000	I(1)	100.447	0.0000	I(1)
TRADE	206.742	0.0000	I(1)	125.600	0.0000	I(1)

Source: Researcher's Calculation

1.2. Cointegration Test

The cointegration test is used to examine the long-term equilibrium relationship between several economic variables. In this study, to examine the long-term equilibrium relationship between the variables used in the model, the Kao cointegration test, which is suitable for tabular data, is used. In this test, the null hypothesis indicates the absence of a long-term equilibrium relationship between the variables. The results obtained from the Kao cointegration test are shown in Table (3). As can be seen, there is a long-term equilibrium relationship between the variables used in the model for both groups of developed and developing countries.

Table (3): Results of Kao Cointegration Test

	Development countries			Developing countries		
ADF	t-Statistic	Prob	Result	t-Statistic	Prob	Result
	-1.966495	0.0246	Existence of co-occurrence vector	-4.374241	0.0000	Existence of co-occurrence vector

Source: Researcher's Calculation

1.3. Optimal Break Selection

Before estimating the autoregressive model with either tabular data or time series data, it is necessary to determine the optimal break for the model. Various indicators such as AIC, Hannan-Quinn, Schwarz, and likelihood ratio are used to determine the optimal break. Since the Schwarz criterion gives more weight to the loss due to the reduction in degrees of freedom compared to the AIC criterion, in this study, the Schwarz information criterion is used to determine the optimal break for the model. According to Table (4), based on the Schwarz criterion, the optimal break for developed countries is 1, but for developing countries, 2 is selected as the optimal break.

Table (4): Determination of the optimal number of model breaks

	Development countries			Developing countries		
Lag	**AIC**	**SC**	**HQ**	**AIC**	**SC**	**HQ**
0	53.61732	53.68091	53.64280	44.52370	44.60674	44.55731
1	34.64878	35.03034*	34.80169	27.11431	27.61253	27.31597
2	34.58192	35.28144	34.86224	26.60463**	27.51804**	26.97434**
3	34.37664***	35.39413	34.78438***	26.67287	28.00146	27.21064

Source: Researcher's Calculation

1.4. Impulse Response

Using the instantaneous response analysis index, the impact of impulses resulting from independent variables of the model on the dependent variable is examined. That is, if an impulse of one standard deviation occurs from each of the model variables, what effect does it have on the dependent variable in subsequent periods. In this research, the response of the variable of government size to shadow banking in selected countries (developed and developing countries) is investigated. It is shown here how the effectiveness of such a sudden change in the variables used in the model will affect the size of the government over different periods. Based on these results, the estimated analysis of instantaneous response for the group of developed countries is shown in Figure (1).

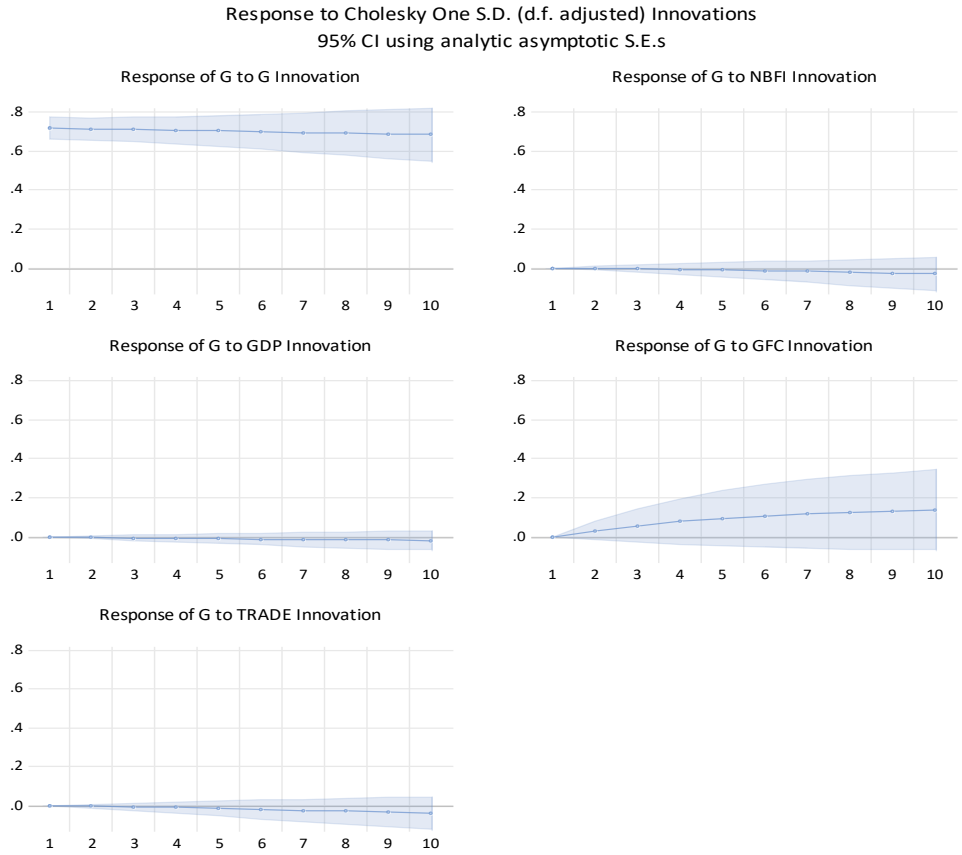


Figure 1. The impulse response results for developed countries

Source: Researcher's Calculation

Graph (1) depicts the results of immediate response analysis for the group of developed countries. According to the chart above, the response of the variable of government size to shocks originating from itself has been positive, and it does not tend towards zero even after 10 periods. Additionally, the expansion of shadow banking activities in the group of developed countries has not led to an increase in the size of government. The results contradict the hypothesis stated at the beginning of this research. One reason why the expansion of shadow banking activities in developed countries has not led to an increase in the size of government could be that these countries have met their financial needs through other channels such as domestic and foreign borrowing, asset and wealth sales, and lifted tax revenues, and they have not relied on financing through securitization. The impact of economic growth shock on government size has been negative and close to zero, which can be completely disregarded in developed countries. The impact of the trade openness variable shock on government size has also been negative. Finally, the response of government size to the shock resulting from the formation of domestic gross fixed capital has been positive. That is, an increase in domestic gross fixed capital in developed countries has led to an increase in the size of government.

Graph (2) illustrates the response of government size to shocks originating from model variables in the group of developing countries. As observed, the response of the government size variable to shocks originating from itself has been positive. In contrast to the estimated results for developed countries where the expansion of shadow banking activities did not increase the size of government, the impact of shadow banking shocks on government size in developing countries has been positive. That is, the expansion of shadow banking activities in these countries has led to an increase in the size of government. The impact of economic growth shock on government size has been positive and close to zero, which can be disregarded. This means that shocks resulting from economic growth do not affect government size in both groups of developed and developing countries. The estimated results for the trade openness variable for developing countries are similar to the estimated results for developed countries. That is, in these countries, an increase in trade volume has not led to an increase in the size of government. In developed countries, an increase in domestic gross fixed capital led to an increase in the size of government. In contrast, the estimated results for developing countries indicate that an increase in domestic gross fixed capital has not increased the size of government.

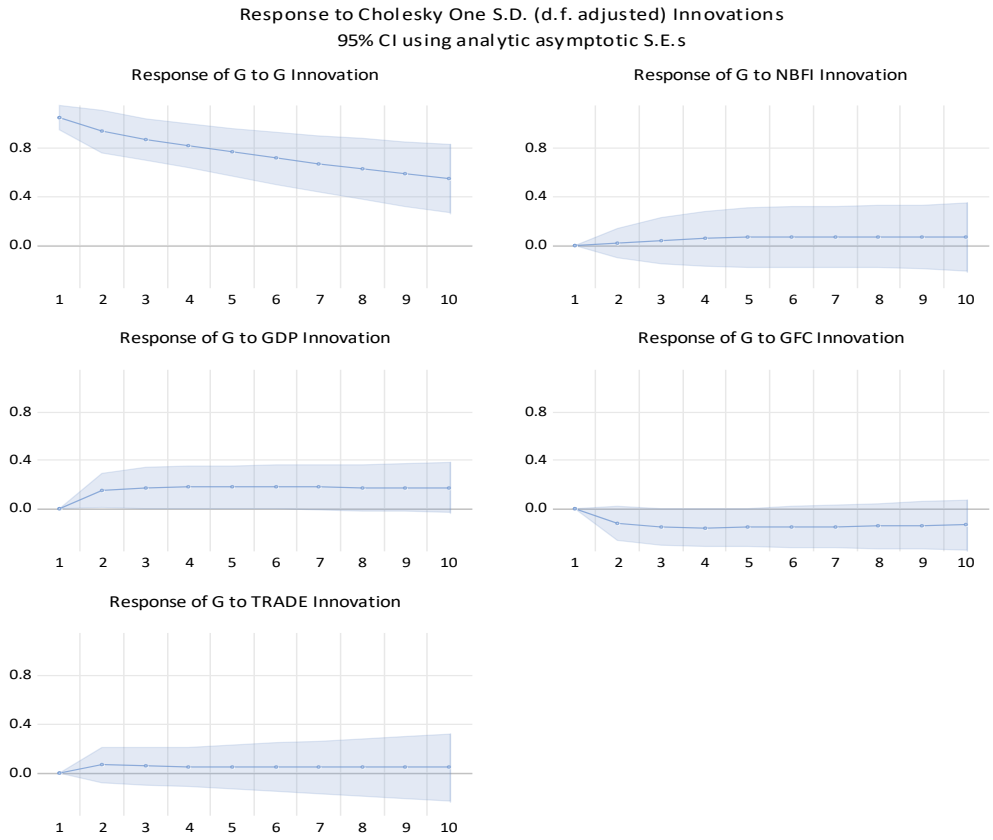


Figure 2. The impulse response results for developing countries

Source: Researcher's Calculation

1.5. Variance Decomposition

Using the prediction error variance decomposition index, the contribution of each shock to the variance of the endogenous variable of the measurement system is measured. Therefore, in this study, in order to determine the contribution of shadow banking variables, economic growth, formation of gross domestic fixed capital, and trade openness to the size of government in selected countries, the prediction error variance decomposition is also used. The results of the prediction error variance decomposition for the group of developed countries over a 10-year period are shown in Table (6).

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Table 6. The Variance Decomposition for developed countries

Period	S. E.	G	GDP	GFC	NBFI	TRADE
1	0.717	100	0.000	0.000	0.000	0.000
2	1.012	99.89	0.001	0.097	0.0005	0.001
3	1.238	99.71	0.003	0.276	0.002	0.004
4	1.428	99.48	0.006	0.498	0.004	0.009
5	1.594	99.22	0.009	0.741	0.009	0.017
6	1.744	98.95	0.013	0.989	0.014	0.028
7	1.881	98.68	0.017	1.234	0.022	0.042
8	2.008	98.41	0.021	1.469	0.031	0.060
9	2.128	98.15	0.026	1.694	0.043	0.081
10	2.240	97.90	0.031	1.905	0.056	0.106

Source: Researcher's Calculation

The estimated results for the group of developed countries show that in the long term (over a 10-year period), almost 96% of the changes in the size of government are due to its own shocks, 6.3% due to the gross domestic fixed capital formation variable, 1.0% due to the trade openness variable, 0.7% due to the government size variable, and 0.1% due to the economic growth variable. Based on these results, it can be stated that this variable has the highest share in the changes in the size of government in the group of developed countries in the long term. In addition, the predicted results of the prediction error variance decomposition for the group of developing countries are shown in Table (7).

Table 7. The Variance Decomposition for developing countries

Period	S. E.	G	GDP	GFC	NBFI	TRADE
1	1.051	100	0.0000	0.000	0.000	0.000
2	1.422	97.92	1.107	0.712	0.028	0.224
3	1.683	94.46	1.879	1.296	0.088	0.271
4	1.886	95.44	2.406	1.692	0.164	0.289
5	2.050	94.65	2.810	1.984	0.243	0.303
6	2.185	93.99	3.149	2.213	0.319	0.318
7	2.299	93.42	3.451	2.399	0.387	0.332
8	2.395	92.91	3.732	2.554	0.447	0.347
9	2.477	92.45	4.003	2.685	0.498	0.362
10	2.547	92.01	4.269	2.797	0.539	0.378

Source: Researcher's Calculation

As seen in Table (7), for the group of developing countries, the highest changes in the size of government are also due to its own shocks. So that, in the long term (over a 10-year period), approximately 98% of the changes in the size of government are explained by the shock originating from this variable itself, 1.1% by the trade openness variable, 7.0% by the gross domestic fixed capital formation variable, 3.0% by the shadow banking variable, and the rest by the economic growth variable.

Discussion and Conclusion

This research aimed to investigate the impact of shadow banking on the size of government in selected countries (a group of developed and developing countries) during the period from 2002 to 2022. To examine this impact, the Panel Vector Autoregression (Panel VAR) model was utilized. This research was conducted using variables such as the size of government, measured by the percentage of government expenditure to gross domestic product (GDP), shadow banking, measured by the total non-bank financial assets, economic growth, measured by per capita income, gross fixed capital formation as a percentage of GDP, and trade openness, measured by the total volume of trade activities as a percentage of GDP. By conducting the Fisher unit root test specific to panel data, it was determined that all variables became stationary in first differences for the group of developed countries, while for the group of developing countries, the variables of economic growth and gross fixed capital formation remained stationary at levels, and the remaining variables became stationary after first differencing. Subsequently, the cointegration test proposed by Kao was employed to examine the long-run equilibrium relationship among the model variables, and the results indicated the presence of long-run equilibrium relationships between the variables. Furthermore, to investigate the dynamics and mutual relationships between the variables, the instantaneous response analysis index was utilized, and the results are as follows:The estimated results for the group of developed countries indicate that the expansion of shadow banking assets has not led to an increase in the size of government.

The estimated results for the group of developing countries suggest that there has been a positive relationship between shadow banking and the size of government. That is, the expansion of shadow banking assets has resulted in an increase in the size of government in the aforementioned countries.

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اثر بانکداری سایه ای بر اندازه دولت در کشورهای منتخب

چکیده

هدف: بانکداری سایه ای شامل مجموعه از واسطه گری‌های مالی غیر بانکی مانند صندوق‌های بازنشستگی، صندوق‌های سرمایه‌گذاری، شرکت‌های بیمه و سایر واسطه‌های مالی غیر بانکی می‌شود که در واقع از نگاه عملکرد شبیه بانک‌های سنتی بود، اما فعالیت‌های آن تحت نظارت بانک مرکزی انجام نمی‌شود. با توجه به گسترش فعالیت‌های بانکداری سایه و اثرگذاری آن بر بخش‌های حقیقی اقتصاد، پژوهش حاضر با هدف بررسی تاثیر بانکداری سایه ای بر اندازه دولت در کشورهای منتخب (شامل دو گروه از کشورهای توسعه یافته و در حال توسعه) انجام می‌شود.

روش: این پژوهش با استفاده از الگوی خودرگرسیونی با داده‌های تابلویی (Panel VAR) طی دوره زمانی ۲۰۰۲ – ۲۰۲۲ در کشورهای منتخب انجام شده است.

نتایج: نتایج به دست آمده برای گروه از کشورهای توسعه یافته نشان می‌دهد که گسترش حجم دارایی بانکداری سایه ای منجر به بزرگ شدن اندازه دولت نشده است. ولی برعکس، بر اساس یافته‌های پژوهش برای گروه از کشورهای در حال توسعه رابطه مثبت بین بانکداری سایه ای و اندازه دولت وجود دارد. یعنی گسترش حجم دارایی بانکداری سایه ای در گروه از کشورهای در حال توسعه باعث بزرگ شدن اندازه دولت گردیده است.

نتیجه‌گیری: در این پژوهش با استفاده از الگوی خودرگرسیونی با داده‌های تابلویی (Panel VAR) اثرگذاری بانکداری سایه بر اندازه دولت در کشورهای منتخب بررسی شده است. نتایج به دست آمده از این نشان داده است که گسترش حجم دارایی بانکداری سایه در گروه از کشورهای توسعه یافته منجر به بزرگ شدن اندازه دولت نشده است. اما برعکس، در گروه از کشورهای در حال توسعه گسترش حجم دارایی بانکداری سایه باعث بزرگ شدن اندازه دولت شده است.

کلمات کلیدی: بانکداری سایه ای، اندازه دولت، الگوی خودرگرسیونی با داده‌های تابلویی (Panel VAR)، کشورهای منتخب.