Assessing Fiscal Policy Impact on Economic Growth: A Comparative Analysis of Indonesia and Turkey

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Keywords

Economic Growth, Fiscal Policy, Indonesia, Turkey, VECM

Abstract

The study involves the application of Vector Error Correction Models (VECM) to analyze macroeconomic dimension of fiscal policy on economic growth in Indonesia and Turkey. Furthermore, it attempts to depict the paths of fiscal policy and GDP evolution in the two economies by providing data for the period 1980-2022. It uses Augmented Dickey Fuller (ADF) tests and Johansen co-integration tests to check against the stationarity and the long-run relationships between fiscal policy variables and economic growth. The result of Granger causality analysis was used to address the two-way relationship between these variables. Data discloses that the fiscal policy of Indonesia does not significantly affects economic development directly, as Turkey's case where government expenditure does have a positive relationship with economic growth in the short term. Despite the common unstable connection between government participation, government revenue and economic growth, there exists a long-term inimical correlation in both countries. The results of the study indicate the impact of fiscal policy as non-immediate measure is not effective with regards to Indonesia economic growth. This calls attention to the role of resource reallocation in creating a lasting development rate. The research indicates that long period of government expenditure maybe unbeneficial for developing economies. Contrary to this, it is governments' duty to determine the etymologically sound methodologies of prudent fiscal plans that will enable privatization, investments, and economic growth.

1. Introduction

The effect of government fiscal policy on economic growth is a fascinating and significant area of research in both developed and developing economies (Sriyalatha & Torii, 2019). This is because any state's fiscal policy is crucial to the government's implementation of macroeconomic policies that impact employment, economic growth, and sustainable national development. Fiscal policy can also regulate changes in prices and the balance of payment (Teodor & Ileana, 2015). Yuniarto (2010) pointed out that inadequate infrastructure and capital may limit the ability to expand, as private sector investment may not begin until the government constructs the necessary infrastructure. Therefore, government investments may have greater externalities in developing economies than in developed ones. Although as Jaelani (2017) stated, it is difficult for highly-indebted countries to adopt fiscal stimulus. The level of interest rate attributed to their debt has a high tendency to absolve the government spending, which could have been used to stimulate aggregate demand.

The effect of government spending on the primary macroeconomic indicators demonstrates the direct contribution of government activity to the national economy. Improper spending management causes fiscal illusion and national economic inefficiency, and unsuitable fiscal policy also causes a crowding out effect, reducing private investment. Prudent fiscal management must therefore be used in order to prevent turbulent economic issues (Jaka, 2002). For example, according to Ismal (2011), the Indonesian government's financial deregulation policy, followed by the oil boom from the start of the 1980s into the late 1990s, boosted economic growth by 7%. This growth could not protect the economy from the economic crisis of 1997-1998. Although there was a sudden regaining of economic growth pace in the early 2000s, the persistence of external economic problems hindered the performance of the economy. This necessitated the intervention of the government through the reformation of the policy of domestic oil prices and the advancement of a fiscal economic stimulus program to help revive the growth of the economy.

In the same vein, Karagöz and Keskin (2016) pointed out that the burden of government expenditure control and budget deficits are the economic phenomena that the Turkish government has struggled with for years. The problem persisted into the 1990s, such that budget deficits were financed by loans. After the great 2001 economic crisis, several economic reforms were instituted by the Turkish government, which included fiscal consolidation (Yorulmaz & Kaptan, 2021) and

the reduction of debt stock, among others (Karagoz & Keshin, 2016). It was aimed at triggering consumption expenditure, which will be induced by a lower interest rate. Subsequently, investment stimulation can place the economy on a path of sustainable growth.

Numerous studies have been conducted on the impact or effect of fiscal policy on economic growth across countries. Yuniarto (2010), Ismal (2011), and Satrianto (2018) have all conducted research studies on fiscal policy and economic growth in Indonesia. Karagoz and Keshin (2016), Yorulmaz and Kaptan (2021), and Philip *et al.* (2021) have studied the same subject matter in Turkey. There are also several cross-country pieces of research that have been conducted on fiscal policy and economic growth, like the work of Jaka (2002), Teodor and Ileana (2015), Amadi *et al.* (2007), Unal (2015), Nguyen (2018), Symoom (2018), and Sriyalatha and Torii (2019). This study therefore intends to examine and compare the impact of fiscal policy (government spending and government revenue) on economic growth in Indonesia and Turkey using data spanning the period 1980-2022. This study contributes to the existing literature by comparing the short-run and long-run impacts of fiscal policy on economic growth in these two emerging economies. The period covered represents a substantial time span, providing a comprehensive analysis. These countries were chosen due to their status as Muslim majority and developing nations from different continents, both exhibiting significant growth rates which have earned them membership in the G20 countries. In addition, in 2001, Turkey and Indonesia both signed the Double Tax Avoidance Agreement (DTAA), which aims to protect citizens of one country living in the other country from having to pay tax twice. This fiscal policy agreement was meant to have implications on tax generation in both countries. This study intends to investigate if government expenditure and revenue as tools of fiscal policy have an effect on the economic growth of both countries and whether such effects have similarities and comparable trends.

The remaining part of this paper will be organized as follows. Section 2 contains the theoretical framework, which includes a brief literature review. The methodology and data used are specified in Section 3. Section 4 detail the results and data analysis, while Section 5 addresses the discussion of findings and the policy implications. The conclusion, recommendations and limitations of the study are respectively discussed in sections 6, 7 and 8 of the paper.

2. Theoretical Framework and Literature Review

It was established by Pigou (1936) that reducing taxes and raising government spending would boost demand and pull the world economy out of the Great Depression. Depending on the relative strength of the effects of the rise in output and the increase in interest rate, an increase in expenditure in the typical Keynesian method may result in either an increase or a drop in investment. This is because an increase in government spending boosts the income level and increases aggregate demand far more than a change in expenditures, since Keynesian economics implies that consumers have a high propensity to consume (Yorulmaz & Kaptan, 2021). However, assuming low investment sensitivity to the prevailing interest rate and the presence of unemployment in the economy, the Keynesians believe there is a positive effect of government spending on private investment (Mahmoud *et al.*, 2013). Nevertheless, Blanchard and Perotti (2002) noted that increase in taxes and government spending have opposing effects on investment.

On the other hand, neoclassical economists argue that Keynesian policies hinder economic growth due to the crowding-out effect, which increases the demand for loanable funds and borrowing costs, leading to lower investment and slower production growth. They also argue that government interference creates market distortions and inefficient resource utilization (Yorulmaz & Kaptan, 2021). Given that the neoclassical economists focus on goods determination, output and income distributions in the market (Nguyen, 2018), they advocate for a competitive market with the assumption of full employment as opposed to the intervention of the government (Mahmoud *et al.*, 2013).

According to Solow (1957), measures of fiscal policy can help to improve inefficiencies that may result from the free market mechanism. In the Ricardian perspective, people interpret a current tax decrease as increased government borrowing that would ultimately result in greater taxes in the future to maintain constant income levels. This need, together with the presumptions of flawless financial markets and no liquidity restrictions, results in no general change in private consumption. However, the characteristics of progressive taxes will affect permanent income before having an impact on aggregate demand and output if governments alter lump-sum taxes for fiscal policy. Therefore, the efficiency of government spending and the way it is paid for in the future will probably determine the effectiveness of the fiscal policy (Nguyen, 2018).

Vector error correction was used by Yuniarto (2010) to determine the long-run relationship between fiscal policy, investment, and economic growth in Indonesia.

This was after analyzing government revenue as well as current expenditures' impact on investment. Yuniarto found that both growth and investment increase in response to additional government spending on development. It can be argued from this study that fiscal sustainability and resilience are the keys to promoting deficits in the budget as supporting long-run economic growth. Ismal (2011) carried out an analysis on fiscal policy and economic growth in Indonesia. He used the ARDL model and the vector error correction model (VECM) on time series data. The results from the study revealed that, within the country, the level of government expenditures is dependent on oil exports, debt payments, and imports; and economic growth depends on expenditures on goods and employment and non-tax income receipts. In the study, it is suggested that fiscal policy should focus on employment expenditure while imports and exports should be the targets of government economic policy on oil.

In order to prove the effectiveness of fiscal and monetary policies on outputs and prices in Indonesia, Satrianto (2018) employed VECM to study time series data in Indonesia for 1970-2015. He proved that fiscal policy was more influential than monetary policy on output and prices in Indonesia. This was deduced from the heavy influencing power of fiscal policy as compared to monetary policy. The study recommended that the government should enhance its effort at coordinating the use of fiscal and monetary policies for the single aim of economic growth.

Karagoz and Keshin (2016) further studied how fiscal policy affected the macroeconomic indicators of Turkey from 1980 to 2010 using the Bayesian vector autoregressive policy analysis. The results of this study show that government revenue and expenditure only have a significant influence on the relationship between gross domestic product (GDP) with a set of macroeconomic variables such as interest rate, inflation, external debt and stock index. In contrast, Yorulmaz and Kaptan (2021) posited that fiscal policy has a significant impact on production in Turkey, especially in the long-term. It can be inferred from their discussion that a balanced budget is ideal for a developing country, while a budget deficit leads to low growth rates. They suggested that sustainable fiscal policies were one way of alleviating the relatively high cost of borrowing that is linked to the Turkish government.

Based on the unbalanced panel data of the sampled emerging economies as used in the study of Nguyen (2018), the findings of the Generalized Method of Moments (GMM) estimator for unbalanced panel data illustrate that fiscal policy has a positive effect on the growth of the selected developing countries in the

review period of 2002-2014. This included the fact that a substantial level of crowding-in effects of fiscal policy was promoted due to improved institutions. Nguyen asserts that foreign obligations act as a restraint to the influence of fiscal measures, especially in countries with high debt levels. From this, he proposed a negative but not significant and inverse association between external debt and economic growth.

Philip and Nuhu (2021) ascertained that monetary policy is more effective than fiscal policy in Turkey. The authors recommended that while improving the fiscal policy, a favorable taxation regime between budgetary flexibility and spending changes should be considered. The study implied that the growth-friendly reforms can have positive impacts on production and increase the growth of output after investment in human and physical capital.

Using VECM, Jaka (2002) highlighted the connection between fiscal policy and economic growth in Indonesia and Malaysia. The results of the study could be interpreted to suggest a strong long-run elasticity of fiscal policy variables on both countries' economic growth. The study indicated that Indonesia's fiscal policy was not sufficiently effective and can be better improved, and noted that a substantial fiscal expansion policy in Malaysia led to only moderate long-run growth in the economy. Teodor and Ileana (2015) carried out a fiscal policy analysis on how implementation affected the economy of Eastern European countries. They concluded that public expenditure and public debt significantly and positively correlated with economic growth. On the other hand, the study revealed that almost all forms of public revenue and direct taxes, as well as social contributions, had a negative contribution to economic growth.

Amadi *et al.* (2007) used multiple regression analysis using Ordinary Least Square (OLS) and Granger causality test. The time series analysis (for 1970-2007) indicated that fiscal policy cannot be regarded as a significant factor in accounting for changes in various macroeconomic variables in Nigeria. Unal (2015) also examined the effect of fiscal policy and macroeconomic variables (unemployment in particular) in the Netherlands. Despite the presumptive impact of the social security tax system on unemployment as specified by Keynesian economics, the author stated that the social security tax system increased unemployment, while government spending increased demand for labor and lowered unemployment.

According to Symoom (2018), using error correction model (ECM) and ARDL model, South Asian countries do not experience any economic effects from government expenditure and revenue. The literature clearly indicated that private

and public investment has a significant impact on influencing economic growth. Sriyalatha and Torii (2019) measured the efficacy of fiscal policy to enhance the growth of the economy in Sri Lanka and Singapore. The ARDL bounds test and ECM methodology was used to deal with the time series data from 1972-2017. The results from the study were that investment expenditure and government expenditure were both positive and significant in the long run for Singapore. On the other hand, investment expenditure in Sri Lanka was positively correlated with inflation rate. Growth rate and inflation rate have a long-run negative relationship in Singapore, while growth rate was positively related to inflation rate in Sri Lanka.

3. Methodology

In this study, we have used VECM to see whether fiscal policy has any effect on economic growth in Indonesia and Turkey. The study involved secondary data obtained for the year 1980 from the World Bank and International Monetary Fund. For this study, the five variables identified are discussed below. The four independent variables are government expenditure (final government expenditure in percent of GDP), government revenue (percent of GDP), household consumption (annual growth rate in percent), capital (gross capital formation in percent of GDP). The GDP growth rate in percent serves as the proxy for economic growth and the dependent variable.

The research model is built upon the aggregate demand model, which is given as:

Y is equal to a function of C, I and G.

We will start the equation with Y, representing the output, C for consumption, and I for the investment and G to symbolize government expenditure.

For the purpose of this research, the fiscal policy variable (i.e., government revenue) is added to the model. Hence, we have

Y = (C, I, G, R) where R is government revenue

By extension, in regards to our research, we have:

GDPG = (CNSPTN, CAP, GOV_EXP and REV)

Where, GDPG = the annual growth rate of gross domestic product at market price (in percentage).

- CNSPTN = the annual growth rate of household and non-profit institutions serving households' (NPISH) final consumption expenditure (growth rate in

percentage).

- CAP = gross capital formation consisting of the fixed assets outlay of the economy and the net changes in the inventories level (in percentage of GDP)

- GOV_EXP = the general government final consumption expenditure, with the inclusion of the current expenditure for purchase of all goods and services, and most of the expenditure on national defense and security, but with the exclusion of military expenditures (in percentage of GDP).

- REV = the government revenue from taxes, social contributions, as well as other revenues like fines, rents, fees, income from sales of properties, with the exclusion of grants (in percentage of GDP)

To determine whether a long-run relationship exists between the variables, the above model must be transformed into a VECM. VECM requires that all variables be stationary, either at level or first difference. The ADF test is employed to test the stationarity of the variables. Following the results of the unit root test, lag criteria must be selected to determine the optimal lag for the analysis. The selection of the optimal lag will be proceeded by subjecting the data to a stability test. The modulus values must be less than 1 before we can conclude that the data is stable.

The next step is to determine the co-integration relationship between the variables. The Johansen co-integration test is used to determine if long-term relationships exist among the variables. The number of co-integrating vectors can be determined from the co-efficient matrix. The co-integrating vectors can be tested using the eigenvalues and trace statistics. The existence of co-integration implies a long-term relationship, which affirms the VECM. The VECM equation for this study is:

$$\text{GDPG}_t = \alpha_0 + \sum_{i=1}^{n} \beta_{1i}\text{GDP}_{t-i} + \sum_{i=1}^{n} \beta_{2i}\text{CNSPTN}_{t-i} + \sum_{i=1}^{n} \beta_{3i}\text{CAP}_{t-i} + \sum_{i=1}^{n} \beta_{4i}\text{GOV\_EXP}_{t-i}$$
$$+ \sum_{i=1}^{n} \beta_{5i}\text{REV}_{t-i} + u_t$$

$$\text{CNSPTN}_t = \alpha_0 + \sum_{i=1}^{n} \beta_{1i}\text{GDP}_{t-i} + \sum_{i=1}^{n} \beta_{2i}\text{CNSPTN}_{t-i} + \sum_{i=1}^{n} \beta_{3i}\text{CAP}_{t-i} + \sum_{i=1}^{n} \beta_{4i}\text{GOV\_EXP}_{t-i}$$
$$+ \sum_{i=1}^{n} \beta_{5i}\text{REV}_{t-i} + u_t$$

$$\text{CAP}_t = \alpha_0 + \sum_{i=1}^{n} \beta_{1i}\text{GDP}_{t-i} + \sum_{i=1}^{n} \beta_{2i}\text{CNSPTN}_{t-i} + \sum_{i=1}^{n} \beta_{3i}\text{CAP}_{t-i} + \sum_{i=1}^{n} \beta_{4i}\text{GOV\_EXP}_{t-i}$$
$$+ \sum_{i=1}^{n} \beta_{5i}\text{REV}_{t-i} + u_t$$

$$\text{GOV\_EXP}_t = \alpha_0 + \sum_{i=1}^{n} \beta_{1i}\text{GDP}_{t-i} + \sum_{i=1}^{n} \beta_{2i}\text{CNSPTN}_{t-i} + \sum_{i=1}^{n} \beta_{3i}\text{CAP}_{t-i} + \sum_{i=1}^{n} \beta_{4i}\text{GOV\_EXP}_{t-i}$$
$$+ \sum_{i=1}^{n} \beta_{5i}\text{REV}_{t-i} + u_t$$

$$\text{GOV\_EXP}_t = \alpha_0 + \sum_{i=1}^{n} \beta_{1i}\text{GDP}_{t-i} + \sum_{i=1}^{n} \beta_{2i}\text{CNSPTN}_{t=i} + \sum_{i=1}^{n} \beta_{3i}\text{CAP}_{t-i} + \sum_{i=1}^{n} \beta_{4i}\text{GOV\_EXP}_{t-i}$$

$$+ \sum_{i=1}^{n} \beta_{5i}\text{REV}_{t-i} + u_t$$

VAR and VECM models treat all variables as endogenous. The Wald-Granger causality test is used to determine the causality between the variables. The series of analyses that have been mentioned will be carried out on data for Indonesian and Turkey. At the end, we will be able to compare the relationship between the variables in both countries.

4. Results and Analysis

Table 1. ADF Unit Root Test Result

Variables	Indonesia	Turkey	
	Probability	Probability	Conclusion
GDPD	0.0000	0.0000	Stationary
CNSPTN	0.0000	0.0000	Stationary
CAP	0.0000	0.0000	Stationary
GOV_EXP	0.0000	0.0000	Stationary
REV	0.0000	0.0001	Stationary

The first step of our analysis is to check the stationarity of the time series data. The ADF test found that not all variables are stationary at level. We proceeded to test for the stationarity of the variables at the first difference. The result of the test is as reported in Table 1 above. The test shows that all the variables are stationary at the first difference because the probability values are less than 0.05.

Table 2. Optimal Lag Test Result

Indonesia						
Lag	LogL	LR	FPE	AIC	SC	HQ
0	-387.8283	NA	385.9516	20.14504	20.35832*	20.22156*
1	-358.7563	49.19876*	317.0782*	19.93622*	21.21588	20.39535
2	-335.3893	33.55260	368.3963	20.01996	22.36601	20.86171
3	-308.9232	31.55260	408.3090	19.94478	23.35721	21.16913

Turkey						
Lag	LogL	LR	FPE	AIC	SC	HQ
0	-354.8045	NA	8299.250	23.21319	23.44448*	23.28859*
1	-324.9658	48.12698*	6225.190*	22.90102*	24.28875	23.35338
2	-306.5122	23.81107	10886.54	23.32337	25.86754	24.15270

| 3 | -279.8610 | 25.79147 | 14424.03 | 23.21684 | 26.91745 | 24.42315 |

Table 2 shows the results of the lag length criteria. The importance of this test is because the selection of a suboptimal lag may result in estimation bias. Given the different criteria as shown in the table, the minimum values for all the criteria fall in lag 1 for both Indonesia and Turkey. The optimum lag for the study in both countries is, therefore, lag 1.

Table 3. Stability Test Result

Indonesia		Turkey	
Root	Modulus	Root	Modulus
-0.264271 – 0.388473i	0.469841	-0.565082	0.565082
-0.264271 + 0.388473i	0.469841	-0.339480 - 0.394926i	0.520782
-0.462228	0.462228	-0.339480 + 0.394926i	0.520782
0.007740 – 0.162535i	0.162720	-0.396405	0.396405
0.007740 + 0.162535i	0.162720	-0.214826	0.214826

Table 3 shows the result of the stability test. The stability test is done to ensure the adequacy of the VECM and the validity of the estimated results. The modulus values of the roots of the characteristics polynomial for data from both Indonesia and Turkey are less than 1. This implies that the roots lie within the unit circle; hence, the stability condition is fulfilled.

Table 4. Co-integration Test Result

Indonesia				
Hypothesized No. of CE(s)	Eigen value	Trace statistics	5% Critical value	Prob.
None	0.706711	135.9584	69.81889	0.0000
At most 1	0.592634	86.89455	47.85613	0.0000
At most 2	0.384801	50.97284	29.79707	0.0001
At most 3	0.351873	31.54045	15.49471	0.0001
At most 4	0.298716	14.19371	3.841465	0.0002

Turkey				
Hypothesized No. of CE(s)	Eigen value	Trace statistics	5% Critical value	Prob.
None	0.675416	102.1872	69.81889	0.0000
At most 1	0.627335	66.18046	47.85613	0.0004
At most 2	0.396038	34.59231	29.79707	0.0130
At most 3	0.355874	18.45649	15.49471	0.0174
At most 4	0.127946	4.380928	3.841465	0.0363

Table 4 shows the result of the Johansen co-integration test. The test investigates if a long-term relationship exists between the series. The eigenvalue and trace statistics were used to determine the level of co-integration. The probability value, as shown in the tables, is less than 5%. This means that the variables in Indonesia and Turkey are co-integrated. Similarly, the trace statistics indicate co-integrating equations. This result has necessitated the use of VECM as the appropriate model for our data.

Table 5. Granger Causality Test Result

	Indonesia		Turkey	
Null Hypothesis	Prob.	Conclusion	Prob.	Conclusion
GDPG does not Granger cause CNSPTN	0.7463	Do not reject	0.3737	Do not reject
CNSPTN does not Granger cause GDPG	0.5837	Do not reject	0.6291	Do not reject
GDPG does not Granger cause CAP	0.4900	Do not reject	0.7437	Do not reject
CAP does not Granger cause GDPG	0.6608	Do not reject	0.2884	Do not reject
GDPG does not Granger cause GOV_EXP	0.9917	Do not reject	0.2658	Do not reject
GOV_EXP does not Granger cause GDPG	0.3806	Do not reject	0.2011	Do not reject
GDPG does not Granger cause REV	0.0209	Reject**	0.8157	Do not reject
REV does not Granger cause GDPG	0.1103	Do not reject	0.0610	Reject*
CNSPTN does not Granger cause CAP	0.7210	Do not reject	0.7290	Do not reject
CAP does not Granger cause CNSPTN	0.8747	Do not reject	0.0701	Reject*
CNSPTN does not Granger cause GOV_EXP	0.3699	Do not reject	0.2020	Do not reject
GOV_EXP does not Granger cause CNSPTN	0.9016	Do not reject	0.5837	Do not reject
CNSPTN does not Granger cause REV	0.0365	Reject**	0.6569	Do not reject
REV does not Granger cause CNSPTN	0.4494	Do not reject	0.0151	Reject**
GOV_EXP does not Granger cause CAP	0.0629	Reject*	0.9468	Do not reject
CAP does not Granger cause GOV_EXP	0.4885	Do not reject	0.6383	Do not reject
REV does not Granger cause CAP	0.0061	Reject***	0.0484	Reject**
CAP does not Granger cause REV	0.6908	Do not reject	0.8287	Do not reject
REV does not Granger cause GOV_EXP	0.2037	Do not reject	0.7441	Do not reject
GOV_EXP does not Granger cause REV	0.5562	Do not reject	0.0829	Reject*

Note(s): ***, ** and * denote statistically significant at 1%, 5% and 10% significance level respectively.

Table 5 shows the results of the Granger causality test. The test is important as it shows the direction of the variables vis-à-vis one another. In Indonesia, there is a unidirectional relationship between REV and GDPG. This means that government revenue can be affected by Indonesia's economic growth rate, but government revenue does not affect the GDP growth rate. A similar unidirectional relationship

exists between household consumption and government revenue; likewise, capital formation is affected by government expenditure level as well as by government revenue. In Turkey, there is a one-way causality between revenue and economic growth rate. Capital and revenue can also affect the consumption level, but they are not affected by it. The result also shows that while revenue is caused by government expenditure, capital formation is also affected by government revenue.

Table 6. VECM Short-run Estimation Results

Indonesia				Turkey			
Variables	Coefficient	Std. error	t-statistic	Variables	Coefficient	Std. error	t-statistic
GDPG(-1)	0.361	0.228	1.585	GDPG(-1)	-0.604	0.401	-1.507
CAP(-1)	0.140	0.220	0.636	CAP(-1)	0.787*	0.458	1.721
CNSPTN(-1)	-0.095	0.169	-0.566	CNSPTN(-1)	0.330	0.387	0.853
GOV_EXP(-1)	-0.861	0.781	-1.104	GOV_EXP(-1)	3.372***	1.030	3.274
REV(-1)	-0.037	0.284	-0.132	REV(-1)	-0.177	0.434	-0.407
CoinEq(-1)	-1.805	0.303	-5.957	CoinEq(-1)	0.178	0.051	3.516

Note(s): ***, ** and * denote statistically significant at 1%, 5% and 10% significance level respectively

Table 7. VECM Long-run Estimation Results

Indonesia				Turkey			
Variables	Coefficient	Std. error	t-statistic	Variables	Coefficient	Std. error	t-statistic
GDPG(-1)	1.000			GDPG(-1)	1.000		
CAP(-1)	-0.061	0.195	-0.314	CAP(-1)	-6.570**	3.000	-2.190
CNSPTN(-1)	-0.124	0.122	-1.011	CNSPTN(-1)	-5.848***	1.166	-5.017
GOV_EXP(-1)	-1.643***	0.599	-2.745	GOV_EXP(-1)	-19.577***	5.773	-3.391
REV(-1)	0.032	0.319	0.101	REV(-1)	-3.260*	1.909	-1.707

Note(s): ***, ** and * denote statistically significant at 1%, 5% and 10% significance level respectively.

Table 6 shows the results of the short-run effects of the fiscal policy variables on economic growth in Indonesia and Turkey. Similar to the findings of Symoom (2018) and Amadi *et al.* (2007), government expenditure and revenue have no significant impact on the economic growth of Indonesia in the short run. This differs from the case of Turkey, where there is a significant positive relationship between government expenditure and economic growth in the short run. Although government revenue is not significant in explaining the changes in economic growth in Turkey, the results show that capital formation is significant in determining economic growth in the short run. This result aligns with the study of Karagöz and Keskin (2016), where they argue that fiscal policy has a general minimal effect on

economic growth in Turkey.

Table 7 shows the long-run effects of the fiscal policy variables on the economic growth of Indonesia and Turkey. Government expenditure has a long-run negative relationship with the growth rate in Indonesia. In Turkey, household consumption, capital, government expenditure, and government revenue all have a significant negative long-run relationship with economic growth.

5. Discussions of Findings and Policy Implications

The results of this study show that Indonesia and Turkey, as noteworthy emerging economies, epitomize the complex interplay between fiscal policy and economic growth in diverse and dynamic settings. The results also offer valuable insights into the efficacy of fiscal policy in promoting sustainable economic growth in both countries. The divergence in the short-run effects of government expenditure on economic growth between Indonesia and Turkey indicates the unique structural dynamics at play in each economy. Additionally, the long-run findings which indicate a significant negative relationship between government expenditure and economic growth in both countries implies that a sustained government spending exhibits a possible detrimental effect on economic growth in both countries.

The criticality of these results for Indonesia and Turkey lies in their implications for making of policy and management of the economy in both countries. This highlights the necessity for a strategic reassessment of fiscal priorities and policy framework. Policymakers are advised to reconsider the composition of government expenditure and focus on measures that facilitate and enhance capital formation, investment, and productivity enhancement. In specific terms, this study warns against reliance on prolonged government spending in Indonesia, where such a strategy may have adverse long-term consequences for economic growth. Conversely, while an initial increase in government spending may spur short-term economic growth in Turkey, policymakers must exercise caution as this relationship may reverse in the long run, signaling the need for prudent fiscal management and sustainable policy measures.

In summary, the findings of this study have shed light on the complex nature of fiscal policy dynamics in emerging economies like Indonesia and Turkey. Furthermore, this study offers actionable insights for policymakers and stakeholders. By addressing the nuanced interplay between fiscal policy variables and economic growth, the research underscores the importance of tailored policy responses that account for country-specific factors and long-term sustainability considerations.

Moving forward, policymakers in Indonesia and Turkey must prioritize prudent fiscal management strategies that fosters sustainable growth trajectories and mitigates the risks associated with excessive government spending in the long run.

6. Conclusion

Fiscal policy is a key component ensuring stability in national economies. This study investigates the links between economic growth and fiscal policy in Indonesia and Turkey, two developing countries with both similarities and distinct dynamics. Applying advanced econometric techniques by taking into account more than four decades of data, the study provides a detailed assessment of the effect of fiscal policy variables on the economic success of each country in both the short and long terms. The results show the different effects of fiscal policy on economic growth, but a common message that suitable policy measures must be devised by considering actual country situation and economic conditions.

The discovered inverse causality between government expenditure and revenue versus long term economic growth of Indonesia and Turkey implies for the necessity of reviewing these countries' fiscal priorities and policies. Policymakers are urged to prioritize measures that promote capital formation, investment, and productive enhancement while exercising caution against excessive reliance on sustained government spending. Furthermore, the study emphasizes the importance of fostering a conducive policy environment for private sector-led investment and innovation to unlock both countries' growth potentials.

7. Recommendations

In the light of the findings of this study, policymakers in Indonesia and Turkey should consider the following fiscal policy recommendations, which are macroeconomic-focused and aimed at generating more impactful growth:

1. Reallocating spending: Authorities should give first preferences to subjects such as infrastructural development, education, and health for the bases of any long-run economic development programs.

2. Enhancing revenue mobilization: Diversifying revenue sources and improving tax collection mechanisms are essential for supporting sustainable fiscal policy and can increase fiscal space for productive spending. This can include broadening the tax base, combating tax evasion, and reducing reliance on unstable sources of revenue, all of which can strengthen fiscal resilience.

3. Promoting private sector investment: Fiscal policies should aim to stimulate

private sector investment through targeted incentives such as tax breaks, subsidies, and regulatory reforms. The encouragement of investment in key sectors such as manufacturing, technology, and export-oriented industries, as well as providing a conducive business environment, can drive economic expansion, job creation, and technological innovation.

4. Long-term fiscal sustainability: Policymakers should adopt a balanced approach to fiscal policy that promotes long-term sustainability. This includes managing public debt levels, maintaining fiscal discipline, and avoiding excessive reliance on deficit financing.

5. Improving efficiency: Efforts should be made to enhance the efficiency of public spending by ensuring that resources are utilized effectively. This could involve reducing bureaucracy, eliminating wasteful expenditure, and implementing transparent budgeting processes.

6. Policy coordination: There should be effective coordination between fiscal, monetary, and structural policies. This is crucial for the achievement of macroeconomic objectives. Harmonizing fiscal policy with monetary policy objectives, exchange rate management, and structural reforms will not only enhance policy effectiveness, but also promote macroeconomic stability.

It is believed that the adoption of these macroeconomic-centered fiscal policy recommendations in Indonesia and Turkey can support the two countries to navigate the complex challenges of economic development. It can also go a long way in promoting sustainable growth and enhancing resilience to external shocks. Moreover, fostering a policy environment that is conducive for private sector-led investment and innovation is key to unlocking the countries' full potential and achieving inclusive development.

8. Limitations of the Study

1. This study is constrained by the lack of generalization towards other fiscal policies, such as tax policy, centralization of revenue, and public borrowing, which have similar effects to revenue policy. Further research may focus on the general effects of different instruments of fiscal policy on economic growth in Indonesia and Turkey, as well as provide a certain level of comprehension and understanding of how this manifests over time. Extending research horizons and including more sophisticated methodologies can improve future studies' contribution to a comprehensive understanding of the complicated relationship between fiscal policy and economic performance in emerging

economies countries similar to Indonesia and Turkey.

2. Another limitation of this study is the reliance on aggregate data, which do not reveal regional or sectoral variation. This limits the depth of analysis and may lead to oversimplifications. Further research could utilize disaggregated data to explore sectoral or regional differences in the effectiveness of fiscal policy, enabling more targeted policy recommendations.

3. Finally, the study covers a specific timeframe (1980-2022), potentially overlooking significant economic events or policy changes that occurred outside this period. Moreover, data availability and quality constraints may limit the accuracy and reliability of the analysis. Future researchers could extend the timeframe analysis to capture a broader range of economic conditions and policy regimes.

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