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Empowering Equity: The Impact of Tax Policies on Inclusive Growth in Turkey

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ABSTRACT

This study uses the ARDL model to analyze whether the general tax structure affects inclusive growth in Turkey by investigating the 2006:1–2021:4 periods offering growth-friendly and inclusive tax policy reform proposals for Turkey. The Turkish economy is a notably fragile economy that is significantly affected by global shocks. Especially in recent years, the Turkish Lira has experienced a period of stable depreciation against other currencies, adversely affecting macroeconomic indicators such as inflation and economic confidence. Tax revenues are a basic building block in financing public expenditures. Turkey receives significantly lower tax revenues than most OECD countries; its tax structure is mainly based on consumption taxes and personal income tax and corporate tax are largely inadequate. Although this situation increases Turkey's economic growth, it also greatly deteriorates inequality in income distribution. The results of this study suggest that, in Turkey, property tax is more effective in promoting inclusive growth. However, Turkey's tax system is insufficient in terms of access to opportunities to allow Turkish society to benefit from economic growth. To foster inclusive growth in Turkey, it is strongly recommended that a thorough redesign of the tax structure be undertaken, aimed at ensuring equitable opportunities for the entire society.

Keywords: Tax Policy, Taxation, Progressivity, Inclusive Growth, Turkey.

JEL Classification Codes: E62, H20, O47

Referencing Style: APA 7

INTRODUCTION

Governments attach great importance to economic growth for turning the wheels and transmission mechanism of the economy. The production of goods and services increases through economic growth, thereby decreasing unemployment. Increased employment positively affects total expenditures and incomes in the economy by increasing investments and savings, consequently triggering further economic growth (Mankiw, 2007; Ünsal, 2007).

Although countries target economic growth, it is worth noting whether this growth is inclusive. Inclusive growth was first introduced by Ali and Zhuang (2007); it is a concept related to the extent to which positive developments in the economy reflect on individuals within the affected society. Currently, there is general apprehension in many countries that economic growth is not distributed equitably in society. In basic terms, inclusive growth refers to the social sharing of growth. High poverty rates and increased income inequality are currently the most important constraints on inclusive growth. Despite its importance, economic growth alone cannot solve all market problems. Recently, a consensus has emerged maintaining that it is more important to focus on inclusive growth rather than growth alone (OECD, 2014; IMF, 2015). The reason for this is that, when inclusive growth is achieved, both economic stability and fair income distribution are achieved, thereby decreasing poverty and facilitating the attainment of economic development goals.

Fiscal policy is just as effective as monetary policy in sharing returns from growth across society and can be used to achieve both economic growth and macroeconomic stability. As stated by Musgrave (1959), both tax and expenditure components are significantly important for inclusive growth, considering the roles of fiscal policy in resource allocation, income distribution, and economic stability. The IMF (2015) also supports this argument, suggesting that fiscal policy is an effective tool to support growth, increasing medium- and long-term growth by 0.75 percent in developed economies and even more in developing economies. This result is also compatible with the findings of Tanzi and Zee (1997), who suggest that fiscal policy is a fundamental factor affecting long-term growth performance.

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Arnold et al. (2011) were the first to analyze the growth effect of tax policy components. These authors investigated the design of a tax policy that not only facilitates economic recovery from a crisis but also contributes to long-term growth. The impact of tax policy on inclusive growth was also subsequently determined by Estrada et al. (2014), Pasha (2014), Brys et al. (2016), O'Reilly (2016), Hagemann (2018), O'Reilly (2018), Abdel-Kader and Mooij (2020), Mooij et al. (2020), and Acosta-Ormaechea et al. (2022); these studies evaluate the optimal utilization of tax policy components to attain inclusive growth.

Tax policy may not always achieve efficiency (growth) and fairness (distribution) in the economy simultaneously, as there is often a tradeoff between economic growth and fair distribution. Tax structure and tax components are two of the most important determinants of this trade-off. It is normal for tax structures to be different between developed and developing countries. Direct taxes, such as personal income tax, are emphasized within the tax structure of developed countries, while indirect taxes such as VAT are more effective within the tax structure of developing countries (Estrada et al., 2014).

Turkey is an important developing country and has an annual average growth target of 5%, according to the Medium-Term Program (SBB, 2022). Due to the Covid-19 pandemic, several curfews were imposed in the second quarter of 2020 and the Turkish economy shrank by 10.4%. However, 21.9% growth was experienced with a rapid recovery process in the second quarter of 2021, and 9.1% growth was recorded in the last quarter of the same year. In line with these goals and realizations, it can be argued that the government has emphasized economic growth. Although a significant growth rate has been achieved in Turkey, the degree to which this growth is inclusive is debatable. Considering income inequality according to the Gini coefficient (Figure 1), this recent growth in the Turkish economy has not been shared with everyone in society, leading to persistent income distribution inequality.

Turkey has a fragile economy that is significantly affected by global shocks. Particularly in recent years, the Turkish Lira has consistently depreciated against other currencies, negatively influencing crucial macroeconomic indicators such as inflation, domestic demand, economic confidence, investment climate, and escalating debt burden, leading to economic stress. Failure to take proper steps to prevent financial problems may cause these problems to persist in the long run. In particular, the failure to reach inflation targets in monetary policy, the interest rate cut pressures on the Central Bank, and the additional financial costs due to increased contingent liabilities deepen this process. In addition, tax expenditures related to the Covid-19 pandemic and inflation continue. However, taxes are not sufficiently progressive in Turkey considering tax policy and income distribution.

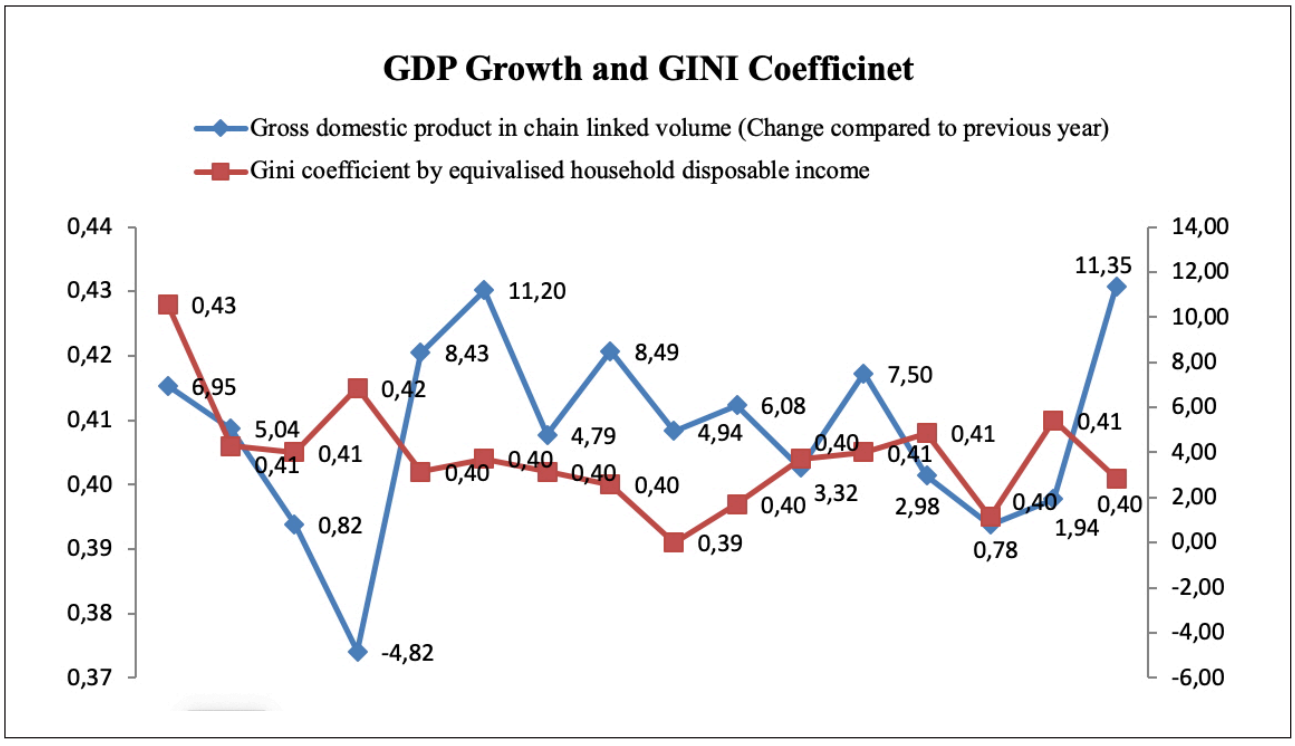


Figure 1. GDP Growth (%) and Gini Coefficient 2006–2021
Source: TUIK, (2022).

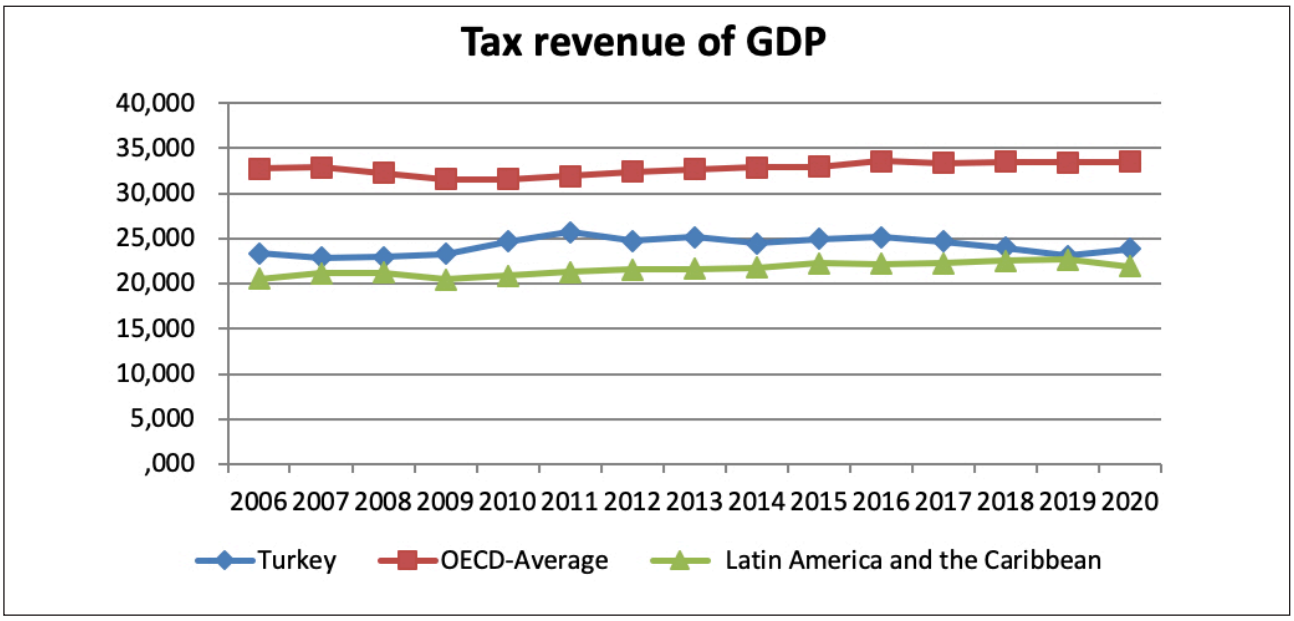


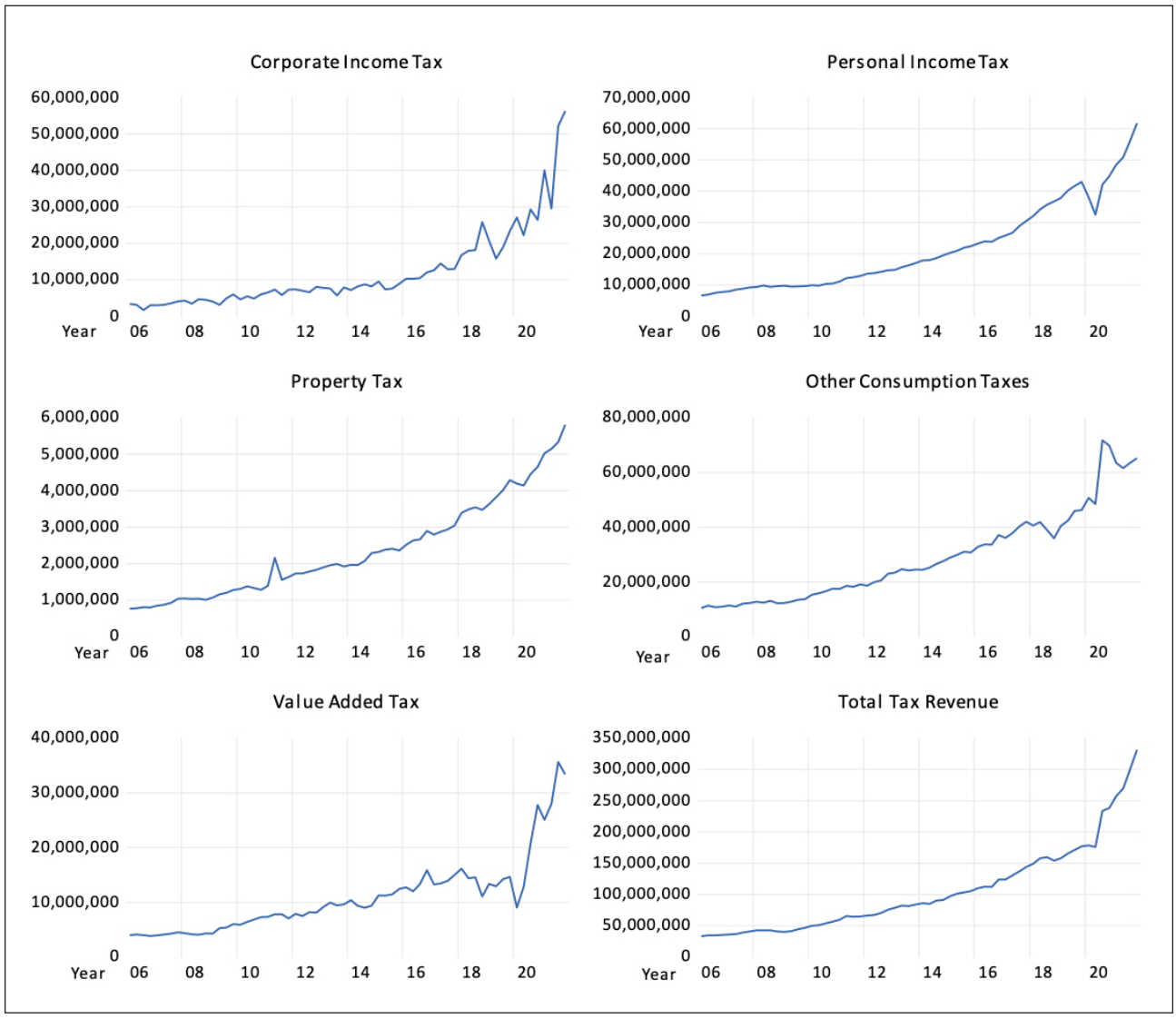
Figure 2. Tax Revenue of GDP: Turkey, OECD, Latin America, and the Caribbean 2006-2020
Source: OECD, (2022).

Turkey has lower tax revenues than the average tax revenue of OECD countries and collects slightly more moderate taxes than the average Latin American country (Figure 2). In Turkey, the portion of direct taxes in total tax incomes is relatively low, while the portion of indirect taxes is large, revealing gaps in the collection of PIT (Personal Income Tax) and CIT (Corporate Income Tax) revenues. In addition, Turkey has high-income distribution inequality and emphasizes efficiency in the tax system over unfair income distribution.

Tax deductions, exemptions, and privileges are the leading problems in Turkey's tax system, causing narrow-based taxes. Ultimately, these factors make taxation more complicated and decrease the effectiveness of taxation. Tanzi and Zee (1997) argue that this situation may lead to rent-seeking and hinder growth in the long term. Brys et al. (2016) state that the redistributive role of taxation in Turkey has a very limited function.

Graph 1 shows Turkey's CIT, PIT, real estate tax, VAT, other consumption taxes, and total tax revenues. Considering the tax structure of Turkey, the corporate tax rate decreased from 33% to 30% in 2005, to 20% in 2006, and remained at 20% until 2018. It was then increased to 22% from 2018 to 2020, and to 25% in 2021. The current corporate tax rate, effective from 2023, is 25%. Consumption taxes mainly consist of VAT and special consumption tax (SCT). In Turkey, VAT is applied at three different rates: 1%, 8%, and 18%. On July 7, 2023, the general VAT rate was increased from 18% to 20%, and the 8% reduced VAT rate was increased to 10%. SCT revenues mainly come from petroleum products, vehicles, alcoholic and non-alcoholic beverages, cigarettes and tobacco products, and other goods, with a different tax rate applied for each category. Due to the increase in exchange rates and oil prices, the SCT taken from petroleum products began to be covered by the government in certain periods (especially during periods of increased public pressure). This method was called the "sliding scale system", in which the SCT on fuel was reset after fuel price increases, and the tax loss was financed by the government. The sliding scale system was intensively implemented between 2018 and 2020.

In the first two quarters of 2021, consumption tax revenues decreased due to curfews and travel bans and the Covid-19 pandemic led to tax deferrals. As of 2021, due to the increased inflation rate, VAT was reduced for basic consumer goods. In the first two quarters of 2020, the effects of the Covid-19 pandemic were not only experienced in consumption tax revenues but also in PIT revenues. In particular, taxes from tradesmen and the self-employed (17% and 20%) were deferred. Since 2021, taxpayers subject to simple taxation have been exempted from income taxes. PIT paid by wage earners is applied progressively at 15%, 20%, 27%, 35%, and 40%. Property tax is only paid in March and November. In addition to existing property tax, valuable house tax came into effect in 2021. In the same year, construction costs rose due to the impacts of the Covid-19 epidemic and the increasing exchange rate. In response to these developments, the government declared a support package to revive the housing sector and reduce the effects of the pandemic. According to this package, the amount of loanable



Graph 1. Tax Composition in Turkey (Thousand Turkish Lira)
Source: TCMB (2022).

funds for residences was increased and the minimum down payment amount was reduced. Total tax revenues decreased during the pandemic period. Following the reduction in the severity of the pandemic, strict measures were removed and the normalization process began, resulting in economic recovery in the last two quarters of 2021.

For those reasons discussed above, Turkey is a country worth examining for inclusive growth. Considering tax policy as a fundamental part of inclusive growth, the link between tax policy and inclusive growth needs to be better understood if Turkey is to achieve its sustainability goals. The study aims to state whether tax policy in effect in Turkey is effective in achieving inclusive growth in Turkey, and generally seeks answers to the following questions:

1. Has inclusive growth been realized through tax policies in Turkey?
2. What are the distributional effects of taxes applied in Turkey?
3. What kind of tax policy should be applied for inclusive growth in the Turkish economy?

To the best of our knowledge, there is no study in the literature that analyzes the relationship between tax structure and inclusive growth in Turkey. Hence, the study will fill this gap in the literature and contribute to the discussion of tax policy and inclusive growth.

The study is organized as follows: the first part introduces the theoretical background and literature, the second part explains data and methodology, the third part contains empirical data, and the third and final part presents the conclusion and discussion.

THEORETICAL BACKGROUND AND LITERATURE

Inclusive growth was first defined by Ali and Zhuang (2007), who defined it as growth with equal opportunities. Inclusive growth centers on creating and nurturing opportunities that are accessible to all individuals. To achieve effective inclusive growth, it is necessary to have high and sustainable growth for creating decent employment opportunities and social inclusion to ensure equal access to opportunities for all individuals.

The Commission on Growth and Development (2008) emphasized the concept of inclusivity while defining inclusive growth. Policy fundamentals of sustainable and high growth provide a basis for high levels of investment, job creation, competitiveness, resource mobility, social protection, equity, and inclusion. According to McKinley (2010), inclusive growth refers to the creation of economic opportunities and ensuring sustainable growth by making this growth useable by the entire society. Social security benefits are also addressed to protect the most fragile and disadvantaged individuals.

According to OECD (2014) and Brys et al. (2016), economic growth is crucial but not adequate for inclusive growth unless the benefits of this growth are distributed equitably among citizens and social groups; inclusive growth focuses on achieving continuous improvements in well-being. In addition to income and wealth, non-income dimensions such as health and education also significantly affect people's well-being. Like the OECD (2014), Cerra (2022) also defines inclusive growth as a multidimensional concept and sets out the components of this multidimensional concept when defining inclusive growth. Accordingly, there are three key components of inclusive growth: (1) strong economic growth, (2) inclusivity, and (3) sustainability.

Considering the above-mentioned definitions, inclusive growth is directly related to both macro- and micro-economic dimensions of economic growth. The macroeconomic dimension of growth is based on the Solow–Swan balanced model, emphasizing technological development as the main source of economic growth and underlying the importance of education in labor productivity (Solow, 1956: Swan, 1956). The microeconomic dimension of growth considers systematic change for economic diversity and competitiveness, including the inventive destruction of jobs, necessitating a new distribution policy. Kuznet (1957) and Chenery (1960) often suggest "structural changes" in this new distribution process. According to Kuznets (1957), income inequality rises with economic growth in the preliminary steps of economic development but decreases in the later stages of economic development. Chenery (1960) states that the transition from agriculture to industry through industrialization is an important factor in economic growth. A recently introduced institutional model by Kongsamut et al. (2001) combines the dynamics of growth and sectoral labor distribution. Ianchovichina and Gable (2012) suggest relocating employment to the agriculture, manufacturing, and service sectors (Ianchovichina and Lundstrom, 2009).

Growth models in the literature focus on the distribution of growth between sectors, the redistribution of income, sustainability, and productivity. The rapid economic growth achieved with these models in recent years has also introduced the problem of income inequality to the agenda. Fiscal policy is one of those policy tools that can be used to provide equal opportunities to everyone in society and claims are made that it can provide a fairer income distribution. The two main components of fiscal policy are expenditure and income. Increasing equity-promoting spending such as education, health, and social protection without increasing incomes can threaten fiscal sustainability. Here, the primary challenge lies in effectively utilizing fiscal policy to foster inclusive growth without compromising fiscal sustainability (Estrada et al., 2014).

Fiscal policy can reduce inequality in terms of both expenditure and income; studies suggest that public spending has a significant impact on inequality (Bastagli et al., 2012; Claus et al., 2014). However, increasing tax revenues and a fair distribution of these revenues are needed to finance public expenditures without impairing financial sustainability. According to Bloch et al. (2016), there is a consensus in the literature that the shift of expenditures to productive expenditures, such as education and health, will increase long-term growth. In addition, the authors argue that shifting taxation from income tax to consumption and property taxes will accelerate growth and that the decrease in the share of "productive expenditures" and the decrease in dependence on distorted taxes are mutually exclusive in terms of their effects on growth. Contrary to these views, Brys et al. (2016) state that the variation between increased tax expenditures of the rich and the use of reimbursable tax credits by the poor is sometimes unclear. Such applications make it difficult to determine whether the transfer-expenditure side of the fiscal policy belongs to the tax side. According to Pasha (2014), the main purpose of progressive fiscal policy is to achieve

inclusive growth, which does not increase inequality and benefits all segments of the population. The success or failure of fiscal policy can be evaluated by identifying current gaps in inclusive growth, which also enables us to identify the difficulties for progressive fiscal policy. In general terms, fiscal policy's focus on the deficits of inclusive growth may be limited to "political economy".

Comparatively, Zouhar et al. (2021) argue that the effect of income policy on inclusive growth may be large enough to balance or increase the effect of expenditure policy. For instance, on the expenditure dimension cash transfers may appear pro-poor, but if deprived individuals pay more taxes the effects of these taxes may be zero or negative on transfers. Therefore, the design of taxes is an important issue for inclusive growth.

A large part of the public revenues policy, which is the main component of fiscal policy, consists of tax revenues. In the literature, the relationship between tax policy and inclusive growth was first discussed by Arnold et al. (2011). Arnold et al. (2011) focus on tax policy design that positively affects both short- and long-term growth. Short-run recovery requires an increase in demand, while long-run growth necessitates an increase in supply. This distinction is significant, as short-run tax concessions can be challenging to reverse, implying that policies aimed at alleviating the crisis may jeopardize long-run growth.

According to Mooij et al. (2020), a tax policy can be evaluated in terms of how inclusive it is and how friendly it is toward growth. Inclusivity reflects the progressiveness of the tax system; as taxpayers' income or wealth increases, their tax burden also increases. Taxes affect much broader aspects of social welfare and are ultimately a means to finance public expenditure. These expenditures can positively trigger inclusive growth. There is a broad agreement that the state needs a minimum level of tax revenue to attain inclusive economic growth (Abdel-Kader and Mooij, 2020).

Tax reforms aimed at fostering growth may incur specific costs in meeting equity targets. Therefore, the design of tax policies for inclusive growth necessitates a thorough examination of their distributional effects (Brys, et al., 2016 Mooij et al., 2020). According to O'Reilly (2018), economic growth and equality can be achieved with win-win policies. For example, higher tax progressivity and a wider tax base will mean that the redistribution of income in a country will be more equitable; conversely, inequality will be greater if the converse is true. In addition, if access to education and health services becomes easier in society, growth and equality will both increase in the country. Similarly, if social security benefits are provided to a wide range of citizens, the informal economy will decrease within the cost-benefit framework, meaning that growth will increase and unregistered workers will enter the system and be advantaged by social benefits, thereby reducing inequality.

Heshmati et al. (2019) claimed that countries can choose a range of fiscal policy practices to achieve inclusive growth, including tax and social assistance systems, both of which focus on economic growth while reducing inequality and negative effects on growth. In their study, these authors argue that a fair and sustainable tax policy and redistribution system promotes inclusive economic growth. Thus, improved social protection can be achieved and the number of citizens living in poverty should be reduced through more inclusive growth.

Stiglitz (2016) states that increased expenditures and taxes can increase GDP. If countries can choose spending and taxes with efficacy in their fiscal policy, the budget multiplier can be quite high. Tax revenues to GDP ratios are frequently low in developing countries, and therefore higher tax rates are needed in these countries to accelerate growth and support inclusivity through public spending. Thus, tax composition significantly affects growth and inclusivity. Estrada et al. (2014) emphasize that in developing economies, indirect taxes are more critical for revenue generation compared to income taxes, while the opposite is true in developed economies. According to Mooij et al. (2020), tax policy options in developed market economies include more progressive PIT and neutral taxation of CIT, a wider VAT base, and greater taxation of property taxes and inheritance taxes. However, these features may be preferable for inclusive growth if non-progressive tax increases finance welfare expenditures that provide better living standards.

High marginal tax rates in personal income tax create a substitution effect, distort individuals' choices concerning work and leisure time, and encourage tax avoidance and tax evasion. Therefore, optimal progressivity in personal income tax should strike a balance between efficiency and equity (Mooij et al., 2020; Abdel-Kader and Mooij, 2020; Besley and Persson, 2014).

CIT, another pillar of direct taxes, is an integral part of income tax and an important source of income for governments. According to Mooij et al. (2020), the extent to which corporate tax contributes to progressivity remains unclear. The rate of this tax can be passed, not only to firms or shareholders but also to employees by lowering their wages. According to Stiglitz (2016),

lowering the corporate tax rate cannot have an important impact on productive investment. Reducing taxes on companies that invest and create new jobs, and increasing taxes on those that do not invest and create new jobs can only provide strong incentives to make further investments.

Wealth taxes, such as property taxes, are levied on capital stocks or transfers, reduce wealth inequality between generations, and help to realize equal opportunity, which is an important dimension of inclusivity. Wealth taxes are an effective means of redistribution. Abdon et al. (2014) argue that increasing property taxes is more beneficial for growth but reduces income tax in the tax composition. Since property taxes are mostly borne by wealthy households, increasing these taxes can be an effective option to promote both efficiency and equity.

Per the literature, consumption taxes tend to be more growth-friendly than income taxes; in comparison, income taxes generally reduce inequality more than consumption taxes. This choice of tax structure illustrates the tradeoff between growth and inclusivity. Consumption taxes are preferred partly because of implementation and collection convenience and partly because they are an important source of governmental income (Mendoza et al., 1997; Abdon et al., 2014; Abdel-Kader and Mooij, 2020; Mooij et al., 2020). However, all these assumptions apply to VAT, which has a uniform tax rate and a broad tax base. Otherwise, a complex VAT regulation resulting from different rate applications and exemptions may have negative effects on the economy (Acosta-Ormaechea et al., 2022). In fact, Acosta Ormaechea and Morozumi (2021) argue that this may harm economic growth. However, Mooij et al. (2020) argue that widening the tax base for VAT is less detrimental to growth than increasing tax rates. Similarly, according to Hagemann (2018), taxes can be listed from the least harmful to the most detrimental to economic growth as follows: real estate taxes, consumption taxes (including environmental taxes), PIT, and CIT.

Although this does not imply that tax increases inherently stimulate GDP, it suggests that consumption taxes are less detrimental to growth relative to other taxes. From a macroeconomic theory perspective, consumption taxes cause fewer distortions in economic behavior by not directly affecting savings and investments, which are crucial for long-term growth. These taxes typically have a broad base, allowing for lower rates and reducing the economic burden on specific groups, thereby enhancing efficiency. In contrast, income taxes can disincentivize work and investment through high marginal rates, negatively impacting economic growth. Keynesian theory underscores the role of fiscal policy and the structure of taxation in managing economic activity, suggesting that consumption taxes, due to their less distortionary nature, support sustained growth. Efficient public spending further mitigates the potential negative impacts of higher taxes. Therefore, while income taxes are effective in reducing inequality, consumption taxes are considered more growth-friendly, fostering long-term economic expansion with minimal adverse effects.

The literature is quite limited in terms of empirical studies on inclusive growth and tax policy. Arnold et al. (2011) analyzed the effect of tax components on GDP per capita by panel regression from 21 OECD countries between 1971 and 2004. The authors discovered that a 1% transition in tax revenues from income taxes to consumption and property taxes increased long-term GDP per capita by 0.25–1%.

Mobolaji et al. (2015) investigated the role of fiscal policy in inclusive growth in Nigeria during the 1980–2013 period. The findings of their study indicated a positive and substantial impact of fiscal policy on inclusive growth. The Granger causality test results demonstrated a one-way causation from fiscal policy to inclusive growth in Nigeria. Finally, the authors suggested that government expenditures, tax revenues, and budget deficits from fiscal policy variables could be used to increase inclusive growth in Nigeria. Oyinlola et al. (2020) found that total taxes and disaggregated taxes did not have a major effect on inclusive growth in 27 sub-Saharan African countries during the 1995–2015 period. Their study suggests to policymakers in the region that credible tax reforms should be developed along with quality governance to transform growth into inclusivity.

Acosta-Ormaechea et al. (2022) compared the tax structures of Latin America and OECD countries and presented inclusive growth-friendly tax policy recommendations. According to the study results, Latin American countries gather much lower tax revenues than OECD countries and their tax systems are largely based on corporate tax and personal income tax, which are insufficient compared with those of OECD countries. Therefore, the authors suggested that Latin American countries should strengthen their personal income tax structure to increase their tax revenues and progressivity. Overall, the study proposes tax reform to reorganize direct taxes, focusing on balancing growth and equity goals.

DATA and METHODOLOGY

The purpose of this study is to analyze the effectiveness of tax policy tools in achieving inclusive growth in Turkey. Quarterly data covering the 2006:1–2021:4 period were used in this research. All data included in the analysis were obtained from TCMB. Table 1 presents the variables used in this study. These variables were seasonally adjusted using the Tramo–Seats method.

Graph 2 shows the graphs and Table 2 demonstrates descriptive statistics of the study variables. The variables are seasonally adjusted and shown as percentages, as expressed in Table 1.

In the literature, inclusive growth is modeled by the increase in per capita income (McKinley, 2010; Acosta-Ormaechea and Morzumi, 2021; Acosta-Ormaechea et al., 2022). The ARDL model in equation (1) was used to examine the effect of taxes on inclusive growth.

In case of the variables being integrated in different orders and there being a cointegration relationship between them, the error correction model based on equation (1) can be created as equation (2).

In equations (1) and (2), g_t refers to GDP per capita, X to variables regarding tax structure (CIT, PIT, VAT, and other consumption taxes; property tax; and total tax revenues), and Z to control variables (investment rate, employment growth, social security contribution, and government consumption).

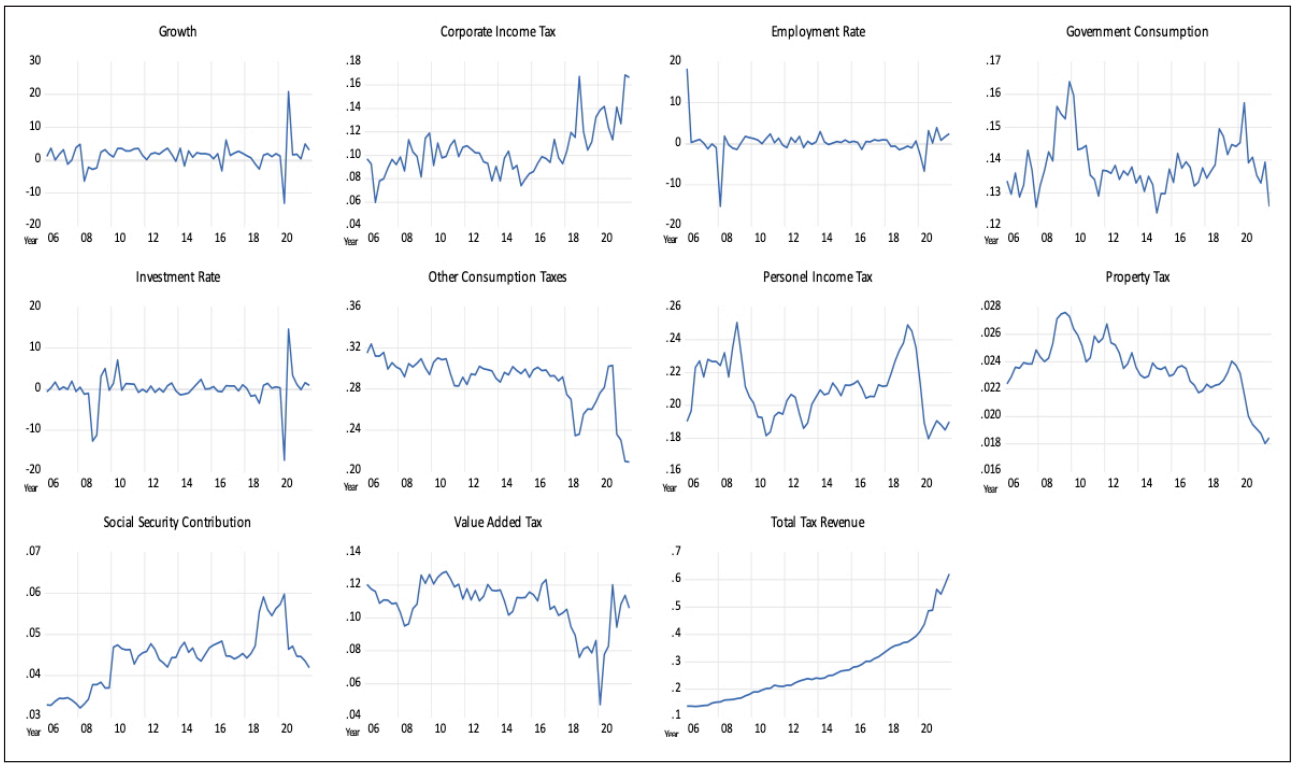
EMPIRICAL FINDINGS

In the study, empirical analysis was performed in three stages. First, the stationarity levels of the variables were examined by unit root tests. Second, cointegration analysis was performed by the bounds test. Third, the short- and long-term relationships between the variables were evaluated by the ARDL method. Sajid and Ali (2018) and Munir and Ullah (2018) conducted studies to analyze inclusive growth using the ARDL method.

The study conducted a time series analysis to assess the stationarity of the model variables through unit root tests (Table 3). According to the unit root test results,, and series were stationary, that is, I(0). The other variables in the study had a unit root; they were stationary at their first difference. Therefore, *growth cit, cont, govc, pit, prot, ssc, ttax* and vat variables were I(1). The integration of the

Table 1. Definition of Variables

Variable	Symbol	Definition
Corporate Income Tax	cit	Refers to the tax collected from corporations. (Corporate income tax/Total tax revenue (%)).
Consumption Tax	$cont$	Refers to the taxes levied on consumption. The consumption tax is expressed as a percentage proportioning to the total tax revenues. Consumption taxes; consist of domestically collected goods and services taxes. (Consumption tax/Total tax revenue (%)).
Employment Growth	emp	Refers to the rise in the labor force participation of the population aged 15 years or over. (Employment Growth (%)).
Government Consumption	$govc$	Refers to the government's current spending for purchases of goods and services. (Government consumption/GDP (%)).
Growth Rate	$growth$	Derived from GDP in chain-linked volume by expenditure approach per capita growth. (GDP per capita growth (%)).
Investment Rate	$inver$	Refers to the capacity utilization rate of the manufacturing industry. (Investment rate/GDP (%)).
Personal Income Tax	pit	Refers to the tax collected from individuals. (Personal income tax/Total tax revenue (%)).
Property Tax	$prot$	Refers to the taxes levied on the property. Property taxes consist of inheritance and gift tax, motor vehicle tax, and valuable housing tax. (Property tax/Total tax revenue (%)).
Social Security Contribution	ssc	State contributions to social security institutions consist of civil servants, workers, contracted personnel, temporary and other personnel, and the purchase of goods and services. (Social security contribution/Total tax revenue (%)).
Total Tax Revenue	$ttax$	Shows the amount of all taxes collected in the country. (Total tax revenue/GDP (%)).
Value Added Tax	vat	In the delivery of goods and services, value-added tax is an expenditure tax that is paid by the person who delivers the goods and services but is burdened by the receiver of those goods and services. (Value added tax/Total tax revenue (%)).



Graph 2. Graph of the Variables

Table 2. Descriptive Statistics

Variables	Mean	Median	Min	Max	Std Deviation	Observations
cit	0.104	0.099	0.059	0.168	0.021	64
$cont$	0.288	0.295	0.209	0.323	0.024	64
emp	0.347	0.387	-15.224	18.268	3.338	64
$govc$	0.138	0.136	0.123	0.163	0.008	64
$growth$	1.540	1.767	-13.146	20.837	3.734	64
$inver$	0.005	0.215	-17.344	14.577	3.899	64
pit	0.209	0.208	0.179	0.250	0.017	64
$prot$	0.023	0.023	0.018	0.027	0.002	64
ssc	0.044	0.044	0.032	0.059	0.006	64
$ttax$	0.272	0.239	0.136	0.621	0.118	64
vat	0.107	0.110	0.047	0.128	0.015	64

$$g_t = \propto_0 + \sum_{i=1}^{p} \varphi_{0i} g_{t-i} + \sum_{j=1}^{k} \sum_{l_j=0}^{q_j} \beta_{0j,l_j} X_{j,t-l_j} + \sum_{m=1}^{s} \sum_{l_s=0}^{q_s} \omega_{0m,l_s} Z_{m,t-l_s} + \varepsilon_t \quad (1)$$

$$\Delta g_t = \propto_1 + \sum_{i=1}^{p-1} \varphi_{1i} \Delta g_{t-1} + \sum_{j=1}^{k} \sum_{l_j}^{q_{j-1}} \beta_{1j,l_j} \Delta X_{j,t-l_j} + \sum_{m=l}^{s} \sum_{l_s=0}^{q_{s-1}} \omega_{1m,l_s} \Delta Z_{m,t-l_s} + \emptyset ECT_{t-1} + \varepsilon_t \quad (2)$$

variables in different orders prevents using the Johansen cointegration tests because all series must be integrated of the same order in the Johansen cointegration test. Another important point here is that the series that are to be included in the analysis are not integrated at second order I(2). Otherwise, the F-statistics designed by Pesaran et al. (2001) will be considered invalid in a bounds test analysis when determining whether the quadratic integrated variables are cointegrated, and the resulting estimates might lead to misleading results.

The second stage of the empirical model includes the boundary test. This is performed by comparing the F value calculated in this test and those critical values comprising the lower and upper limit values of the table suggested by Pesaran et al. (2001). This approach gives more reliable results than those of Johansen and Engle-Granger's (1987) cointegration analysis in case of a low number of observations (Narayan and Smith, 2006). Mah (2000) also states that this approach provides better results if the size of the sample is small.

The optimal lag length in the models was determined according to the Akaike (AIC), Schwarz (SIC), and Hannan Quin (HQ) information criteria. According to the boundary test results presented in Tables 4, 5, 6, 7, 8, and 9, the null hypothesis suggesting that there is no cointegration between the variables was rejected. In Tables 4, 5, 6, 7, 8, and 9, "k" represents the number of independent variables in the equation, and the critical thresholds are extracted Pesaran et al., Table C1(iii) in (2001: 300).

The ARDL model and the tax distribution and growth relationship were examined in the third stage of the empirical analysis. Table 10 presents the estimation

Table 3. Unit Root Tests

Variables	ADF			P-P			KPSS		Decision
	N	I	T and I	N	I	T and I	I	T and I	
cit	1.926 (0.986)	0.495 (0.985)	-0.269 (0.989)	0.964 (0.905)	-2.639 (0.090)	-3.819 (0.021)**	0.648*	0.208*	I(1)
Δcit	-5.412 (0.000)*	-5.835 (0.000)*	-5.939 (0.000)*	-13.271 (0.000)*	-14.405 (0.000)*	-18.881 (0.000)*	0.338	0.144	
$cont$	-1.776 (0.072)	1.256 (0.998)	-0.725 (0.965)	-1.132 (0.231)	-0.964 (0.760)	-2.549 (0.304)	0.880*	0.137*	I(1)
$\Delta cont$	-2.725 (0.007)**	-3.324 (0.018)**	-5.914 (0.000)*	-7.559 (0.000)*	-7.662 (0.000)*	-7.670 (0.000)*	0.123	0.051	
emp	-10.576 (0.000)*	-10.464 (0.000)*	-10.325 (0.000)*	-10.353 (0.000)*	-10.242 (0.000)*	-10.291 (0.000)*	0.076	0.055	I(0)
$govc$	-0.172 (0.620)	-2.641 (0.090)	-2.602 (0.280)	-0.326 (0.564)	-3.442 (0.013)**	-3.377 (0.063)	0.083*	0.083*	I(1)
$\Delta govc$	-10.417 (0.000)*	-10.329 (0.000)*	-10.310 (0.000)*	-10.474 (0.000)*	-10.385 (0.000)*	-10.369 (0.000)*	0.053	0.032	
$growth$	-1.151 (0.224)	-3.132 (0.030)	-3.138 (0.108)	-9.960 (0.000)*	-15.047 (0.000)*	-14.992 (0.000)*	0.190*	0.99*	
$\Delta growth$	-5.181 (0.000)*	-5.135 (0.000)*	-5.091 (0.000)*	-39.080 (0.000)*	-38.531 (0.000)*	-39.231 (0.000)*	0.336	0.264	I(I)
$inver$	-8.297 (0.000)*	-8.230 (0.000)*	-8.191 (0.000)*	-8.367 (0.000)*	-8.293 (0.000)*	-8.257 (0.000)*	0.069	0.041	I(0)
pit	-0.494 (0.497)	-2.978 (0.043)**	-2.966 (0.151)	-0.197 (0.611)	-2.549 (0.108)	-2.636 (0.266)	0.100*	0.090*	I(1)
Δpit	-2.353 (0.019)**	-2.345 (0.161)	-2.289 (0.432)	-5.662 (0.000)*	-5.611 (0.000)*	-5.591 (0.000)*	0.099	0.061	
$prot$	-0.920 (0.313)	-0.078 (0.946)	-2.778 (0.210)	-0.645 (0.433)	-0.768 (0.820)	-2.406 (0.372)	0.677*	0.160*	I(1)
$\Delta prot$	-4.818 (0.000)*	-4.897 (0.000)*	-5.299 (0.000)*	-5.879 (0.000)*	-5.827 (0.000)*	-6.008 (0.000)*	0.275	0.046	
ssc	0.088 (0.707)	-2.131 (0.233)	-2.047 (0.564)	0.127 (0.719)	-2.133 (0.232)	-2.155 (0.505)	0.702*	0.108*	I(1)
Δssc	-7.757 (0.000)*	-7.713 (0.000)*	-7.798 (0.000)*	-7.764 (0.000)*	-7.720 (0.000)*	-7.837 (0.000)*	0.163	0.058	
$ttax$	0.679 (0.859)	1.925 (0.999)	4.387 (1.000)	6.443 (1.000)	6.343 (1.000)	4.421 (1.000)	0.945*	0.217*	I(1)
$\Delta ttax$	2.812 (0.998)	2.890 (1.000)	1.759 (1.000)	-7.100 (0.000)*	-8.749 (0.000)*	-10.232 (0.000)*	0.692	0.189	
vat	-0.261 (0.587)	-1.372 (0.589)	-3.909 (0.018)*	-0.571 (0.465)	-2.854 (0.056)	-3.138 (0.106)	0.461*	0.124*	I(1)
Δvat	-3.456 (0.000)*	-3.346 (0.017)**	-3.348 (0.069)	-11.951 (0.000)*	-11.863 (0.000)*	-11.774 (0.000)*	0.205	0.181	

Note: In the ADF test, the lag length criteria are chosen according to the Akaike info criterion. The Bartlett–Kernell estimation method was used as spectral estimation method in KPSS and Phillips–Peron tests and bandwidth was determined as Newey–West. ( ): marginal significance level *: 1% significance level **: 5% significance level. I: intercept, T and I: trend and intercept, N: none.

Table 4. F-Bounds Test (Dependent Variable: $growth$: VAT and Other Consumption)

k	F-statistic	Critical thresholds at the 1% significance level	
		I(0)	I(1)
1	8.627	2.79	4.1

Table 5. ARDL Error Correction Regression t-Bound Test (Dependent Variable: $growth$: VAT ve Other Consumption)

t-statistic	Critical thresholds at the 1% significance level	
	I(0)	I(1)
-7.457	-3.43	-5.37

Table 6. F-Bounds Test (Dependent Variable: $growth$: CIT)

k	F-statistic	Critical thresholds at the 1% significance level	
		I(0)	I(1)
1	7.379	2.96	4.26

Table 7. ARDL Error Correction Regression t-Bound Test (Dependent Variable: $growth$: CIT)

t-statistic	Critical thresholds at the 1% significance level	
	I(0)	I(1)
-7.065	-3.43	-5.19

Table 8. F-Bounds Test (Dependent Variable: $growth$: PIT)

k	F-statistic	Critical thresholds at the 1% significance level	
		I(0)	I(1)
1	12.684	2.96	4.26

Table 9. ARDL Error Correction Regression t-Bound Test (Dependent Variable: $growth$: PIT)

t-statistic	Critical thresholds at the 1% significance level	
	I(0)	I(1)
-9.352	-3.43	-5.19

results and also shows the diagnostics tests of the model. The Breusch-Godfrey LM test was used to state whether the model included autocorrelation. As the p-value was greater than 0.05, there was no autocorrelation in the model. The Breusch–Pagan–Godfrey test was used to examine the validity of the constant variance assumption, suggesting that the assumption of constant variance was provided as the probability value was greater than 0.05. The Jargue–Bera test was used to examine the validity of the normality assumption, suggesting that the residuals were normally distributed as the Jargue–Bera test probability value was greater than 0.05. The Ramsey Reset test was used to determine whether there was any identification error in the model. According to the results of this test, there was no specification error in any of the models. in Equation (2) represents the error correction term, referring to a lagged value of the error term obtained from the ARDL model established to determine long-term relationships. The coefficient of error term is expected to be significantly negative; it shows how long it will take for a deviation in the long-term relationship between the variables to recover due to any shock.

The study separately evaluated the effect of taxes on GDP growth per capita in three different models. The first long-term model, which included consumption taxes,

Table 10. Tax Reallocations and Long-Term Growth

Dependent Variable: $growth$						
Tax Reallocations and Long-Term Form						
Variable	**Consumption Taxes**		**Income Taxes (CIT)**		**Income Taxes (PIT)**	
	Coefficient	**t-Statistic**	**Coefficient**	**t-Statistic**	**Coefficient**	**t-Statistic**
$ttax$	18.556**	2.743 (0.010)	2.975	0.733 (0.469)	4.553***	1.818 (0.079)
$prot$	835.535*	3.625 (0.001)	244.113	1.374 (0.180)	352.983**	2.440 (0.020)
ssc	-63.201	-1.553 (0.131)	-22.236	-0.884 (0.384)	-15.198	-0.774 (0.444)
$cont$	34.391***	1.964 (0.059)				
vat	-42.372***	-1.893 (0.068)				
cit			-25.909**	-2.431 (0.022)		
pit					-31.114*	-4.090 (0.000)
$inver$	1.140*	6.624 (0.000)	1.080*	7.564 (0.000)	1.098*	9.259 (0.000)
emp	0.139	1.418 (0.167)	0.160**	2.533 (0.017)	0.096***	1.753 (0.089)
$govc$	-50.275**	-2.120 (0.042)	-17.933	-0.794 (0.433)	3.856	0.178 (0.859)
CointEq(-1)*	-0.141*	-5.137 (0.000)	-0.189*	-6.434 (0.000)	-0.254*	-2.675 (0.001)
Residual and Stability Diagnostics						
R^2=0.935	X^2_{BG}=1.457 (0.251)		R^2=0.929	X^2_{BG}=0.025 (0.975)	R^2=0.956	X^2_{BG}=0.571 (0.571)
$\overline{R}^2$=0.864	X^2_{J-B}=4.761 (0.546)		$\overline{R}^2$=0.851	X^2_{J-B}=5.395 (0.067)	$\overline{R}^2$=0.911	X^2_{J-B}=11.909 (0.002)
	X^2_{B-P-G}=0.505 (0.092)			X^2_{B-P-G}=0.410 (0.991)		X^2_{B-P-G}=0.896 (0.616)
	X^2_{Ramsey}=0.714 (0.480)			X^2_{Ramsey}=0.508 (0.615)		X^2_{Ramsey}=0.522 (0.605)

Note: *,** indicate 1% and 5% significance, respectively. X^2_{BG} , X^2_{J-B}, X^2_{B-P-G}, X^2_{Ramsey} show that the Breusch-Godfrey serial correlation LM test, normality Jarue–Bera test, heteroskedasticity test, Breusch-Pagan-Godfrey, and stability diagnostics tests respectively. (): shows probability values.

property tax, and investment rates positively affected inclusive growth at the 1% significance level. Total tax revenues were found to be positive at the 5% significance level and government consumption was negative at the 5% significance level. Concerning the effects of consumption taxes such as VAT and SCT, VAT was negative at the 10% significance level and other consumption taxes were positive at the same significance level. In this model, the error correction coefficient was significant in the short run. A negative EC coefficient indicates that the system returns to its long-run equilibrium. According to the error correction term coefficient, a deviation in the short-term comes to the long-term equilibrium after approximately seven quarters (1/0.141=7.092).

In the second model, which included corporate tax, the corporate tax positively affected the investment rates at the 1% significance level and the employment rate at the 5% significance level. This means that an increase in corporate tax is associated with an increase in investment rates, likely due to the reinvestment of profits by corporations to benefit from tax deductions or incentives provided for investments. Similarly, higher corporate taxes are correlated with higher employment rates, possibly because corporations increase hiring to manage higher operational demands or to qualify for tax deductions associated with employment. However, CIT had negative effects overall at the 5% significance level. In the short run, the error correction coefficient was significant as -0.189. According to the error correction term coefficient, a deviation in the short-term comes to the long-term equilibrium after approximately five quarters (1/0.189=5.291).

In the third and last model, which included income tax, income tax was negative at the 1% significance level and investment rates were positive at the same level of significance. Property tax had a positive effect at the 5% significance level, while the total tax revenues and employment growth had a positive effect at the 10% significance level. According to the error correction term coefficient, a deviation in the short-term comes to the long-term equilibrium after approximately four quarters (1/0.254=3.937).

All three models revealed investment rates to be an important factor in the increase in GDP per capita. This result is also compatible with the assumption of Abdel-Kader and Mooij (2020) in suggesting that taxes can affect economic growth through investment rates.

CONCLUSION and DISCUSSION

This study aimed to examine whether tax policy triggers inclusive growth in Turkey. Turkey achieved a very rapid growth rate despite the Covid-19 pandemic. For instance, in 2021 Turkey's economic expansion registered a 7.5% growth in the initial, 22.2% in the second, 7.9% in the third, and 9.6% in the fourth quarter, as compared to the corresponding periods in 2020 (SBB, 2022b). Despite the current and ongoing economic instabilities such as inflation and exchange rate shocks, the government emphasizes economic growth rates. Despite its high growth rates, it is debatable how much of Turkey's growth is inclusive.

Inclusive growth, in its most basic definition, benefits all segments of society from economic growth. Inclusive growth provides both economic growth and equal income distribution. Therefore, tax policy has a significant impact on inclusive growth and helps to increase social welfare. Furthermore, there is a linear relationship between the progressiveness of a country's tax system and the inclusivity of its growth; as stated by Mooij et al. (2020), inclusivity reflects the progressiveness of the tax system.

Considering the definition of inclusive growth, the present study analyzed the increase in national income per capita and tax components in the 2006–2021 period using the ARDL method. The effects of different tax components on long-term growth were examined using three models. The first model included VAT and other consumption taxes such as SCT, the second model included CIT, and the third model included PIT.

The results obtained in the study are listed as follows:

Real estate taxes are annually levied on immovable properties of households, meaning that there is a limited behavioral response to tax in households. Since this tax is based on gross values and has a fixed tax base, it causes the least damage to economic growth among tax types (Brys et al., 2016; Abdel-Kader and Mooij, 2020). Our study has determined that property tax has a positive impact on growth in the long run by providing tax neutrality. This finding aligns with Arnold et al. (2011)'s results. In other words, the property tax structure in Turkey is considered progressive does not harm growth, and contributes to income justice as it is collected from rich people.

CIT is among the most destructive taxes for growth. However, this destructiveness for growth may vary depending on the design of CIT. CIT can be regulated as a rent tax to minimize cross-country distortions and promote inclusiveness. Such a system maintains the existing CIT while deducting the return on corporate capital to equalize interest. Similarly, allowance for corporate capital deducts interest and replaces it with a notional interest rate that is applied to all capital to ensure tax neutrality. These systems have strong effects on the corporate debt level and create positive effects on investment (Abdel-Kader and Mooij, 2020). Consistent with findings in the literature, the present study found that CIT has negative effects on growth. Therefore, the negative effect of CIT on economic growth in Turkey should be reduced by applying the allowance for the corporate capital system as proposed by Abdel-Kader and Mooij (2020) over a long-term period. This system can positively affect investments and increase growth. In addition to the allowance for the corporate capital system, tax reforms should also be implemented, including an expansion of the corporate tax base.

As is the case for CIT, PIT can have negative effects on growth. The present study shows that PIT has negative effects on growth in Turkey. However, this negative effect can be mitigated by redesigning the PIT accordingly; the most promising tax change that can be made to increase growth and achieve economic revival is to reduce income tax on low-income earners, thereby reviving aggregate demand, increasing incentives to work, and decreasing income inequality. The main channel of transferring tax policy to improve inclusive growth in Turkey is through investment and, to a lesser degree, employment growth. The results of the present study are in line with those of Mendoza et al. (1997), Abdon et al. (2014), Besley and Persson (2014), Abdel-Kader and Mooij (2020), and Mooij et al. (2020).

Unlike those found in the literature, the present study has determined that VAT in Turkey is negative and statistically significant regarding inclusive growth. A positive VAT coefficient indicates higher long-term growth. Conversely, a negative VAT coefficient has a negative effect on inclusive growth. The cause of these findings may be due to the trade-off between labor and leisure. Tanzi and Zee (1997), Acosta-Ormaechea et al. (2022), and Acosta-Ormaechea and Morozumi (2021) assumed that complex regulations arising from rate differences and exemptions in consumption taxes negatively affect and may even harm economic growth; these assumptions are potentially valid regarding VAT in Turkey. VAT reductions and exemptions, especially those applied during the 2008 crisis and the Covid-19 pandemic, and the applications of different tax rates are considered as triggers of this situation. According

to the OECD and KIPF (2014), although these reduced VAT rates are designed to support poor individuals, they are still considered a weak tool for achieving inclusive growth. At best, wealthy individuals and poor individuals experience an equal total benefit from the lower VAT rate; at worst, rich individuals benefit more overall. These assumptions show that the lowered VAT rate has a regressive impact on inclusive growth, distorting income distribution equality. Therefore, a single standard rate with a broad tax base should be designed to effectively drive inclusive growth and revenue from VAT. In addition, the results of the present study reveal that SCT and other consumption taxes positively affect growth and furthermore, the expected tax performance from VAT is provided by SCT and other consumption taxes. However, this study suggests that SCT is more growth-friendly than VAT and PIT.

This study argues that inclusive growth can be promoted through tax reform. From this perspective, this study offers certain policy recommendations and proposes a tax reform that mostly strengthens the design of direct taxes and balances growth and equality goals. Although policy recommendations differ by government, there are major reform choices for efficiency and equity. For instance, Turkey has a progressive PIT system, neutral taxation of capital and corporate tax revenues, adoption of a single rate of VAT, minimization of VAT exemptions, and greater use of property taxes. However, the capacity of Turkey's tax administration should also be improved. Turkey should adopt carbon and environmental taxes to reduce the harmful effects of climate change. These implications are consistent with the basic tax policy principles proposed by Brys et al. (2016), such as broadening the tax base for inclusive growth and enhancing the comprehensive progressivity of taxation.

The most important limitation of this study is Law No 5018. The Law came into force in Turkey in 2003 but was only put into practice in the public sector in 2006. As a result, the analytical budget classification method was initiated and the calculation method of tax revenues was changed, leading to the inability to make a comparison between the periods before and after 2006. Therefore, all series included in the study commenced in or after 2006.

The observed positive effect of increased tax revenues on inclusive growth necessitates further theoretical elucidation. While traditional Keynesian theory posits that tax increases generally suppress GDP, the findings of this study suggest that the effectiveness and outcomes of tax policies greatly depend on the specific economic and administrative context in which they are implemented. In Turkey, the structure and administration of the tax system, alongside policies aimed at broadening the tax base and minimizing distortions, have contributed to positive economic outcomes. This is supported by findings from Acosta-Ormaechea et al. (2022) and Abdel-Kader and Mooij (2020), which underscore the role of progressive tax systems in fostering inclusive growth and economic development. Furthermore, future studies may explore perceived tax fairness among taxpayers for inclusive growth. Governments and taxpayers have different perceptions of the tax system. Accordingly, inclusive growth can be examined for the development of a more effective tax system in consideration of the behavioral fiscal framework of the country concerned. In addition, the effect of public expenditures (which constitute another side of the fiscal policy) on inclusive growth can also be examined in future studies.

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