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Research Article

The Impact of Fiscal Policies on Inclusive Growth in Türkiye*

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ABSTRACT

Countries aim to inclusive growth to find a common solution the problems that poverty, income inequality, and unemployment. To boost inclusive growth, policies differ by country but fiscal policies play a crucial role in making growth more inclusive. In this study, five different indices were calculated to measure whether Turkish economic growth was inclusive. After obtaining the result that growth is inclusive, the calculated indices were used as the inclusive growth indicator, and we inquired in which direction the fiscal policies on education, health, social transfers, and taxes affect inclusive growth. Annual data covering the period 2006-2018, and the ARDL method were used to test the relationship between fiscal policies and inclusive growth. We figured out that fiscal policies had different effects on created inclusive growth indices. The results obtained show that public expenditures for health and education have a decreasing effect on inclusive growth indices while social transfers contributed positively to inclusive growth index, two indices were negatively affected by indirect taxes.

Keywords: Inclusive growth, Fiscal policies, Inclusive growth index



1. Introduction

The economic growth model, which aims to distribute the benefits and opportunities created by economic growth equally to all segments of society, is defined as inclusive growth. Inclusive growth aims to increase the welfare of all segments of society. Depending on the challenges it faces the priorities of an inclusive growth policy are different for each country. However, it stated in the OECD (2012) report that reducing poverty, unemployment, and income inequality are the main goals of inclusive growth.

Fiscal policies are the most effective tools to reach the three main objectives of inclusive growth. Besides being used for supporting economic growth, fiscal policies are also utilized for reducing poverty and income inequality. Public health and education expenditures, and taxes are frequently preferred fiscal policy instruments on the road to inclusive growth (Estrada et al., 2014).

Public education spending can impact inclusive growth in many ways. The first impact of education expenditures is on human capital. Education improves the qualifications of people so the probability of being fired or unemployed in the skilled labor force decreases. Also, more educated workers earn higher wages. Thus, while more educated individuals can avoid poverty, the increasing labor force qualifications helps to reduce income inequalities. Especially, education of females increases labor force participation rate and provides better employment opportunities. For this reason, everyone in society must benefit equally from educational opportunities in countries that aim for inclusive growth.

Another effective fiscal policy instrument for inclusive growth is public health expenditures. It is known that the poor live in unhealthy conditions compared to the rich and have difficulties accessing health services. Healthier people are more productive and have a higher participation rate for employment. Increased productivity of the workforce due to better health conditions not only increases wages but also positively affects economic growth. To create healthy societies, everyone in the society needs to benefit from health services equally. A healthier society boosts economic growth, as well as contributes to the country's struggle with poverty, income inequality, and unemployment problems.

Tax and social transfers contribute to inclusive growth, especially with their positive effects on poverty and income inequalities. The tax collection capacity of developed countries is much greater than developing countries. The advantage that developed countries gain in tax collection allows more public expenditures for education and health services, social protection, transfers, and subsidies. Countries with higher tax revenues have a more balanced growth performance and less income inequality (Heshmati et al., 2014). Social public expenditures are public transfer expenditures used to reduce poverty. Besides direct income transfers or benefits in kind, practices such as establishing job workshops and opening training centers are social expenditures, made to bring new and valid professions to unqualified or outdated occupational groups. Public transfer expenditures for increasing the qualifications and employment of the unskilled labor force are highly effective in reducing poverty (Sarısoy and Koç, 2010).

After the crisis of 2001, the Turkish economy showed a rapid economic growth performance except for the years 2008-2009. The first question in our study was whether Türkiye's economic growth was inclusive. So, we needed to measure inclusive growth for Türkiye.

There are many methods for measuring the inclusiveness of economic growth for a country, country group, or region. One of these methods is creating an inclusive growth index. Creating an index offers the opportunity to evaluate many variables together. In this study, we created indices

with five different methods to use as the indicator of inclusive growth. Moreover, different indices enabled us to compare the results.

In the next section, we investigated the effects of public expenditure policies implemented by the government of Türkiye on inclusive growth. We analyzed the relationship between public education, health, social transfer expenditures, and tax policy, and the inclusive growth index for the period 2006-2018 using the ARDL method. We used the indices mentioned above as indicators of inclusive growth. In this study, we aimed to contribute to the literature by calculating the inclusive growth index for Türkiye using different methods and analyzing the relationship between different fiscal policies and these indices.

The study was organized as follows. The first section describes the definition and measurement of inclusive growth. The second section explains the relationship between inclusive growth and fiscal policies and the third section presents methodology and estimation results.

2. Definition and Measurement of Inclusive Growth

There is no single and clear definition of inclusive growth in the literature. Economic growth in which all members of society benefit from the affluence and opportunities arising from the increase in national income in a balanced way is expressed as “inclusive growth”. Based on this definition, it can be said that inclusive growth has two dimensions; the first is economic growth, the second is sharing the benefits of economic growth with the broadest possible segment of the society (Taşkın, 2014). According to the definition of OECD, inclusive growth is economic growth that creates opportunities for people in all segments of society and ensures that these opportunities are distributed equally (OECD, 2017). The World Bank defines inclusive growth as growth that improves the social situation of the poor by focusing on poverty (World Bank, 2009). According to the Asian Development Bank, inclusive growth is a concept that goes beyond broad-based growth. It is a type of “growth that not only creates new economic opportunities, but also one that ensures equal access to the opportunities created for all segments of society, particularly for the poor” (Ali and Son, 2007). According to the UNDP International Policy Center for Inclusive Growth (IPC-IG), what should be considered in inclusive growth is not the level of growth but how inclusive the growth is (IPC-IG, 2013). For growth to be inclusive; it should benefit the whole society, including the disadvantaged groups in society, target poverty and inequality and contribute to the economic growth of countries (C20, 2015). Klasen (2010) defined growth as inclusive growth, which reduces income inequalities among the poor, middle-income, and wealthy segments of society, benefits all segments of society from the opportunities created by growth and reduces disadvantages.

There is a term “pro-poor growth” which is used like inclusive growth, but it is not the same meaning. Pro-poor growth refers to economic growth for the benefit of poor people, but the concept of inclusive growth means a better redistribution of the benefits and opportunities of economic growth. Also, World Bank defines inclusive growth as a growth that poor people benefit more. The World Bank defines inclusive growth in two categories: absolute and relative. Improvement of the situation of the poor is known as absolute inclusive growth. If the situation of the poor is improving faster than the rest of the society, this implies relative inclusive growth. When talking about inclusive growth, usually absolute recovery is meant. In this case, while the rich get rich rapidly, the slight improvements observed in the situation of the poor allow us to talk about inclusive growth (World Bank, 2009). In the World Bank’s approach, a high rate of economic growth is necessary for reducing absolute poverty. But, for this growth to be sustainable in the

long run, it should be broad-based across sectors, and inclusive of most of a country's working-age population. In this perspective, inclusive growth focuses on raising the pace of growth and increasing productive employment opportunities. Employment growth generates new jobs and income, while productivity growth has the potential to raise wages of workers and self-employed earnings.

In achieving the goal of inclusive growth, it is important to ensure an equal distribution of economic opportunities and to improve living standards and quality of life. Economic growth is a tool to achieve these goals, but not every economic growth is expected to benefit every household (World Economic Forum, 2017). It is important to determine national economic strategies to achieve the goal of inclusive growth. While each country determines its strategy by considering its own economic, social and demographic characteristics, there are basic areas that countries should improve to achieve the goal of inclusive growth. Besides enlarging the size of the economy, it is needed to achieve strong and sustainable living standard improvements. Designing and implementing policies to increase labor productivity and household income will raise living standards (World Economic Forum, 2017).

Many methods are used to measure inclusive growth. Inclusive growth measurement methods differ depending on how inclusive growth is defined, what variables are used, and what the policy priorities of countries are. The most preferred methods in the literature to measure inclusive growth are inclusive growth indices and social opportunity curves used by Ali and Son (2007).

Ali and Son (2007) measured inclusive growth with social opportunity curves similar to social welfare curves. The social opportunity curves approach focuses on opportunities created for poor people. Creating opportunities for poor people makes growth more inclusive. Inclusive growth is achieved when the social opportunity curves reach the maximum level. The social opportunity function is a function of the opportunities available to individuals such as education, health, and basic services. The social opportunity function increases as people's access to opportunities increase. Opportunities will also increase in countries with strong economic growth performance. Therefore, inclusive growth should not only create opportunities but also ensure that opportunities are spread equally and in a balanced manner throughout society. In the model developed by Ali and Son, the distribution of opportunities to the society is provided by opportunity transfer. An opportunity transfer from the rich to the poor increases the social opportunity function. Inclusive growth therefore should not only expand average opportunities but also improve the distribution of opportunities across the population. If the opportunities created in a society have increased and these opportunities are more evenly distributed to the society, then the country is found on a higher social opportunity curve with more opportunities (Ali and Son, 2007). Opportunity curves are shown on the biaxial plane with the cumulative distribution of opportunities on the vertical axis and the population on the horizontal axis. If the entire opportunity curve shifts upward, this implies that everyone in society -including the poor- is enjoying an increase in opportunities, and hence we may call such a growth process as unambiguously inclusive. The degree of coverage depends on how much the curve shifts upward and on which part of the horizontal axis the shift occurs. The downward slope of the opportunity curve indicates that opportunities are available to the poor more than to the rich. Conversely, the upward sloping opportunity curve means that opportunities benefit more people in the upper-income group. In this approach, it is preferable that the opportunity curve slopes downward in a way that benefits the poor (Ali and Son, 2007).

Another method used to measure inclusive growth is creating a composite index. Inclusive growth has a multidimensional structure and includes many different variables. Creating an index

enables us to evaluate many variables together. However, it is a disadvantage that to create a multivariate or long-time interval index, access to sufficient data is limited. There are many different methods of creating an index. Therefore, determining the correct method is also important.

The composite index is created by combining several variables or indicators. The purpose of the composite index is to combine all defined variables or indicators to find a measure that reflects the current situation and progress (Chakrabarty, 2017). Certain steps are followed to create a composite index. First, the variables to be used are determined. There is no rule in the determination of the variables. But a high correlation between the selected data allows for an analysis with the low-dimension dataset. The second stage is the scaling of selected indicators. Normalization is the most used method at this stage. It is important to choose a suitable normalization method with the available data. The most common normalization methods are Z-score and min-max methods. The third stage is scoring and weighting. Scoring is done by two different methods, subjective and objective. Subjective scoring develops entirely under the control and initiative of the author. For this reason, it is vital to decide the points to be used when creating the index (Chakrabarty, 2017). Different methods can be used in objective scoring. One of these methods is to give 0 point to the variable with the lowest value and 100 point to the variable with the highest value. Equation 1 is used to determine the scores of the variables between 0 and 100.

$$\chi' = \frac{x - \min(x)}{\max(x) - \min(x)} \times 100 \quad (1)$$

Principal component analysis and factor analysis are the other methods that can be used for objective scoring. Both are data reduction techniques that allow automatic score assignment to variables. The next step after determining the scores is weighting. Several weighting methods were proposed in the literature. In subjective weighting, weightings are determined based on the magnitude of the impact of the data included in the index on the country's inclusive growth. Most composite indicators rely on equal weighting which all dimensions, areas, and variables are given the same weight. The last method used in determining the weights is geometric or arithmetic average. When applying the arithmetic mean, all observation values are divided by the number of observations. The variables handled in this method are assumed to have the same significance level. In cases where not all observation values have the same significance, each of the observation values is weighted according to their priority. After each observation is multiplied by its own weight, the weighted average values are obtained. The final values of all observations for a year are obtained by taking the average of calculated weighted average values. Kiani and Ullah (2015) calculated an inclusive growth index by taking the simple average of the normalized values by the Z-score method for Pakistan. The created inclusive growth index takes a value between 0 and 1. A value close to 0 means that the country has achieved a low level of inclusive growth and a value close to 1 means that the country has achieved a high level of inclusive growth (Kiani and Ullah, 2015). On the other hand, Hakimian (2013) used the equal weight method for the inclusive growth index calculated for North Africa. In his study, the inclusive growth index value was obtained by multiplying the points calculated with the standardized value by applying equal weight to each variable with the 1/n method (Hakimian, 2013).

Among the composite inclusive growth indices formed by the weighted average and score method in the literature, the best known is the study of McKinley (2010). McKinley calculated an

inclusive growth index for Bangladesh, Cambodia, India, Indonesia, the Philippines, and Uzbekistan. McKinley grouped the variables into dimensions and areas. Then determined the scores and weights subjectively. The scores were valued between 0 and 1. The scoring was made by taking into account the change of the data during the period examined (McKinley, 2010). The distribution of the weights used in McKinley’s study are given in Table 1.

Table 1: Weights used at McKinley’s research

Dimension	Weight	Area	Weight
<i>Economic growth, productive employment, economic infrastructure</i>	50%	Economic growth	0.25
		Employment	0.15
		Economic Infrastructure	0.10
<i>Poverty, inequalities, gender inequality</i>	25%	Poverty	0.10
		Inequalities	0.10
		Gender Inequality	0.05
<i>Human capabilities, accessibility to resources</i>	15%	Health and Nutrition	0.05
		Education	0.05
		Accessibility to safe water	0.05
<i>Governance and social protection</i>	10%	Social Protection	0.10

Source: McKinley, 2010

3. Fiscal Policies for Inclusive Growth

In the OECD’s Inclusive Growth Report, it stated that the problems of poverty, unemployment, and income inequality caused high growth levels to fail (OECD, 2012). To overcome these three main problems, fiscal policies were effective tools. While countries use fiscal policy to accelerate economic growth, they also used these policies to struggle with income inequality and poverty. To achieve the goal of inclusive growth, fiscal policies such as education and health expenditures, transfers, and taxes were preferred as effective tools (Estrada et al., 2014). Studies on OECD countries have shown that fiscal policies were one of the most effective tools to reduce poverty and income inequality. Benefiting from social security services, taxes on consumption and real estate taxes were factors that affected the redistribution of income (Heshmati et al., 2014). The main achievement was that fiscal policies made economic growth inclusive while maintaining fiscal sustainability.

Human capital is important for both growth and its inclusiveness. Investments in human capital increase its productivity, employment, and wage. These are critical issues for inclusive growth, so this makes human capital important for the countries’ inclusiveness aim and education expenditures are the key issue. The impact of human capital on economic growth occurs through an increase of physical capital’s productivity, employment opportunities, creating and spreading technological developments (Çakmak and Gümüş, 2005). Education and skills are critical for growth and inclusiveness. An increase in public education expenditures contributes to economic growth, reduces poverty and income inequality, and creates a qualified labor force. Workers’ human capital, educational attainment and skills not only determine employment and earnings, but they also matter for health, social participation and overall living standards, which are key to non-income dimensions that matter for inclusive growth (OECD, 2012). Also, public provision of education services free of charge will enable every segment of society to benefit from education.

The effect of health expenditures on inclusive growth emerges with the improvement in living standards and positive effects on economic growth. The relationship between health expenditures and economic growth emerges with the effect of health expenditures on human capital because of

inequality in access and benefit from health services. There is an evident health condition gap between the poor and the non-poor. People who benefit from health services become healthier. The income inequality disrupts the access and opportunities to benefit from health services against the poor. The relationship between public health spending and poor health status is stronger in low-income countries (Gupta et al., 2001). Public spending on health significantly improves the health conditions of the poor. Healthy people become more productive, and this positively affects growth. Also, the time that healthy people spend on leave from work due to health problems is reduced, so there is no decrease in wage earnings per hour (Bloom et al., 2001).

Likewise, taxes and social transfers affect inclusive growth through their impact on income inequality, poverty and employment figures. To reduce poverty, public transfer expenditures are mostly preferred. Low-income groups benefit more from direct cash transfers and subsidies than the wealthy and these aids that countries apply to low income groups reduce income inequality and poverty. With cash transfers and subsidies, poor households who do not have access to education and health services can benefit more from these services (Asian Development Bank, 2014). Public transfer expenditures which are allocated for the training and employment of unqualified workforce are highly effective in reducing poverty. The public transfer expenditures applied to gain entrepreneurship qualification for the poor ensuring that people get rid of poverty and at the same time increase their contribution to national income (Sarısoy and Koç, 2010). Taxes have an important role in reducing income inequality. Against the distorting effect of indirect taxes on income distribution, the corrective effect of income tax on the distortions in income distribution makes income tax one of the important tools in minimizing income inequality, which is one of the main objectives of inclusive growth.

4. Methodology and Estimation Results

In this study, the effect of fiscal policy on inclusive growth in Türkiye was investigated for the 2006-2018 period. Annual data were used in the study. The reason for covering a 13-year period was the lack of data. Firstly, inclusive growth indices (IGI) were calculated to be a measure of “inclusiveness” of Turkish economic growth. In this study, five IGIs formed by five different methods were used as an inclusive growth indicator. Information related to these indices and other variables used in the study are given in Table 2.

Table 2: Abbreviations and explanations used for variables

Variable	Explanation
IGI_EW	Inclusive growth index created with equal weight method
IGI_CA	Inclusive growth index created with cropped average
IGI_MK	Inclusive growth index based on the study McKinley (2010)
IGI_AV	Inclusive growth index created by taking the average of IGI_EW, IGI_CA and IGI_MK
IGI_WA	Inclusive growth index created using the weighted average
EDEX	Share of public education expenditures in GDP
HLTEX	Share of public health expenditure in GDP
TRNEX	Share of public transfer expenditures in GDP
INDTAX	Share of indirect taxes in GDP

For the 2006-2018 period, five different indices were created for Türkiye. The indices consisted of 3 dimensions, 8 areas, and 13 variables. The variables used in the creation of the indices were determined with reference to McKinley’s (2010) study. The dimensions, areas, and variables of the indices are given in Table 3.

Table 3: The variables included in the indices created for Turkiye

Dimensions	Areas	Variables
Economic growth, productive employment, economic infrastructure	Economic growth	*Per capita GDP growth rate
	Employment	*Workforce (15+) rate
		*The ratio of employed in the manufacturing industry to total employment
	Economic Infrastructure	*Share of self-employed people in the total working population (%)
*Electricity consumption		
Poverty, inequalities, gender inequality	Poverty	*Proportion of population living below the poverty line (50%)
	Inequalities	*Gini Coefficient
		*P80 / P20 ratio
	Gender Inequality	* (15+) proportion of female literate
Human capabilities, accessibility to resources	Education	*Share of women in total workforce (%)
		*Primary education participation rate
	Health	*Secondary education participation rate
		*Mortality rate under 5 years (female + male)

The first IGI for Turkiye was created with the equal weight method for the period 2006-2018. After giving equal weight to all the variables considered, the weighted and normalized value of the year was multiplied. The index value for that year was obtained by taking the simple average of all values of a particular year. This process was made for all years of the period, so Turkiye’s IGI_EW was obtained.

The second index was calculated by cropped average method. The cropped average of 10% was applied when generating the IGI_CA. After eliminating the effect of the highest and lowest values on the index, the IGI_CA value for that year was obtained with the simple average and this process was repeated for all years.

The third index was calculated by multiplying the normalized variable values with the weights (IGI_MK) then taking the average. Used weights were adapted from McKinley’s (2010) study shown in Table 4.

The fourth index IGI_AV created for Turkiye was created by taking the average of the three indices (IGI_EW, IGI_CA, IGI_MK) frequently used in the literature.

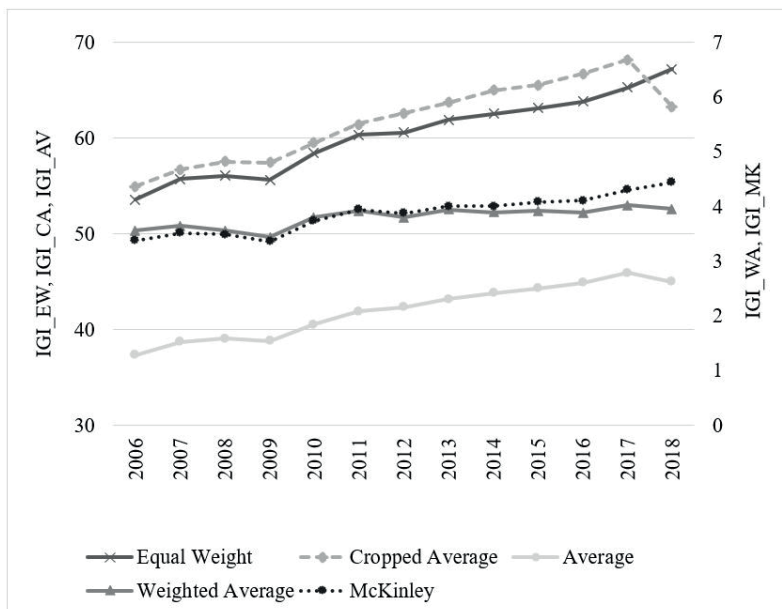
The last IGI for Turkiye was created with the weighted average method (IGI_WA). Considering the importance of the variables and their impact on inclusive growth in Turkiye, the weights of variables were determined by us. Used weights are given in Table 4. The IGI_WA was calculated by multiplying the determined weights and normalized values then taking simple averages.

The indices, used as inclusive growth indicators in this study, are given in Figure 1 to see their movements together. All IGI’s showed that inclusiveness of growth increased in Turkiye in the period 2006-2018. The 2008 global crisis had a decreasing effect on all IGI values. The increase in IGIs has continued since 2010. After 2017, IGI_CA, IGI_WA and IGI_AV have shown that the inclusiveness of growth has decreased.

Table 4: Weights used for IGI_MK and IGI_WA

Area	Weights for IGI_MK	Weights for IGI_WA	Variables	Weights for IGI_MK	Weights for IGI_WA
Economic growth	0.25	0.30	*Per capita GDP growth rate	0.25	0.30
Employment	0.15	0.15	*Workforce (15+) rate	0.05	0.05
			*The ratio of employed in the manufacturing industry to total employment	0.05	0.05
			*Share of self-employed people in the total working population (%)	0.05	0.05
Economic Infrastructure	0.10	0.02	*Electricity consumption	0.10	0.02
Poverty	0.10	0.15	*Proportion of population living below the poverty line (50%)	0.10	0.15
Inequalities	0.10	0.15	*Gini Coefficient	0.05	0.10
			*P80 / P20 ratio	0.05	0.05
Gender Inequality	0.10	0.08	*(15+) proportion of female literate	0.05	0.04
			*Share of women in total workforce (%)	0.05	0.04
Education	0.10	0.10	*Primary education participation rate	0.05	0.05
			*Secondary education participation rate	0.05	0.05
Health	0.10	0.05	*Mortality rate under 5 years (female + male)	0.10	0.05

Source: Weights for IGI_MK adapted from McKinley (2010), weights for IGI_WA determined by authors.

**Figure 1: Inclusive growth indices calculated by five different methods**

Source: Authors' estimations.

After obtaining indicators to represent inclusive growth for Turkiye, we investigated the impact of fiscal policy instruments on inclusive growth. Equation 2 was created to test the relationship between the five IGI and fiscal policies.

$$\begin{aligned}
 &IGI = \{IGI_EW, IGI_CA, IGI_MK, IGI_AV, IGI_WA\} \\
 &IGI_t = \beta_1 + \beta_2 EDEX_t + \beta_3 HLTEX_t + \beta_4 IND TAX_t + \beta_5 TRNEX_t + \mu_t \tag{2}
 \end{aligned}$$

In this study, to analyze the effects of Turkiye’s fiscal policy on inclusive growth, the annual values of the GDP share of education, health, social transfer expenditures, and indirect taxes were selected as independent variables for the period of 2006-2018. We could not reach adequate data on education expenditures statistics from neither OECD nor Turkish Statistical Institution for Turkiye. Instead, we used the ratio of the Ministry of National Education’s budget to GDP. We obtained the indirect tax and current transfer expenditures to GDP ratio data from the Republic of Turkiye Ministry of Treasury and Finance, and the ratio of total health expenditures to GDP data from the Ministry of Health. Figure 2 shows the movements at all the fiscal policy variables we used for the 2006-2018 period in Turkiye.

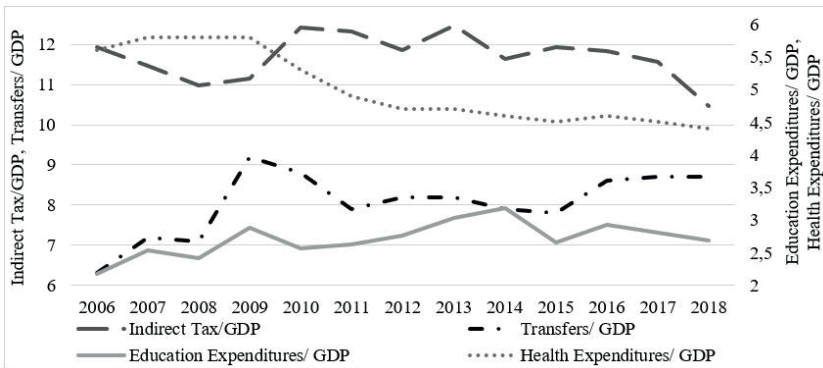


Figure 2: Selected fiscal policy indicators in Turkiye
 Source: The Republic of Turkiye Ministry of Treasury and Finance, Ministry of National Education and Ministry of Health

As seen in Figure 2, after the 2008 global crisis, all ratios increased except for health expenditures. Especially, transfer expenditure increased from 7.1% in 2008 to 9.2% in 2009. In the same period, we see that the ratio of education expenditures and indirect taxes to the GDP also increased.

The unit root test of the series, which was the first step of the time series analysis, was conducted. The ADF, PP and KPSS unit root tests were applied to the series. Stationarity analysis results are given in Table 5.

Table 5: ADF, PP and KPSS unit root analysis results

	ADF				PP			
	level		1. difference		level		1. difference	
	c	c+t	c	c+t	c	c+t	c	c+t
IGI_EW	0.8328	0.2393	0.0092***	0.0444**	0.8309	0.1057	0.0006***	0.007***
IGI_WA	0.4757	0.2487	0.0253**	0.0929*	0.5834	0.2899	0.0002***	0.0019***
IGI_MK	0.8529	0.1284	0.0199**	0.0905*	0.9614	0.0967*	0.0009***	0.0044***
IGI_CA	0.3574	0.9782	0.5847	0.7297	0.3377	0.9861	0.5847	0.8943
IGI_AV	0.4104	0.7576	0.0663*	0.1260	0.0350**	0.7892	0.0774*	0.0805*
EDEX	0.0466**	0.1601	0.0014***	0.0045***	0.0399**	0.1627	0.0002***	0.0001***
HLTEX	0.8665	0.4518	0.1482	0.3639	0.8665	0.6175	0.1497	0.1003
TRNEX	0.1614	0.2215	0.0152**	0.0614*	0.0024***	0.0188**	0.001***	0.0039***
INDTAX	0.4866	0.8335	0.0749*	0.1706	0.4866	0.8015	0.0847*	0.0397**
	KPSS							
	level		1. difference					
	c	c+t	c	c+t	c	c+t	c	c+t
IGI_EW	0.55 (0.463000)**	0.1892 (0.146000)**	0.3796 (0.347000)*	0.3114 (0.216000)***				
IGI_WA	0.4705 (0.463000)**	0.1402 (0.119000)*	0.4292 (0.347000)*	0.4241 (0.216000)***				
IGI_MK	0.5358 (0.463000)**	0.5 (0.216000)***	0.4094 (0.347000)*	0.4108 (0.216000)***				
IGI_CA	0.4981 (0.463000)**	0.1528 (0.146000)**	0.3385	0.1535 (0.146000)**				
IGI_AV	0.5296 (0.463000)**	0.1631 (0.146000)**	0.50 (0.4630)**	0.50 (0.2160)***				
EDEX	0.3813 (0.347000)*	0.1465 (0.146000)**	0.3033	0.3886 (0.216000)***				
HLTEX	0.4823 (0.463000)**	0.1101	0.1492	0.1149				
TRNEX	0.3617(0.347000)*	0.1114	0.218	0.2994 (0.216000)***				
INDTAX	0.1762	0.1716 (0.146000)**	0.2126	0.2227 (0.216000)***				

Note: (*), (**) and (***) show the stability at 0.1, 0.05 and 0.01 significance level, respectively.

c: The unit root analysis results of the model with the only constant term

c + t: The unit root analysis results of the model with constant terms and trends.

Test results with no value in brackets show that all the critical values of 0.1, 0.05 and 0.01 are lower than the calculated KPSS value.

The ARDL model was used in this study to test the relationship between inclusive growth and fiscal policies. The ARDL model was preferred because the time interval of the data set was not wide, and the variables were stationary at different levels. There is no need to run a unit root test to perform ARDL analysis. However, ARDL is not used when the variables are stationary in the second difference. For this reason, the unit root analysis in Table 5 was made to indicate that the variables fulfill the level and the first difference stationary condition.

The second step in the ARDL analysis is the determination of the lag length. Since the time interval of the study was limited, the maximum lag length test could be determined as one (1). However, as a result of the analysis, as shown in Table 6, it was observed that a delay was appropriate according to the information criteria of Akaike (AIC), Schwarz (SC) and Hannah-Quinn (HQ).

Table 6: Determining the appropriate lag structure of the model

	Model 1		Model 2		Model 3		Model 4		Model 5	
	0	1	0	1	0	1	0	1	0	1
AIC	-16.73	-23.25*	-15.49	-25.19*	-16	-22.8*	-16.68	-23.18*	-16.33	-24.24*
SC	-16.53	-22.04*	-15.29	-23.98*	-15.8	-21.58*	-16.48	-21.97*	-16.13	-23.02*
HQ	-16.81	-23.7*	-15.57	-25.64*	-16.08	-23.25	-16.75	-23.63*	-16.40	-24.68*

Note: (*), (**) and (***) show the stability at 0.1, 0.05 and 0.01 significance level, respectively.

The long-term model estimation results for the five IGI models are reported in Table 7. Health expenditures and indirect taxes had a decreasing effect both on the IGI_EW and IGI_CA. It was observed that health and education expenditures had a decreasing effect on IGI_MK, while public transfer expenditures had an increasing effect. In the IGI_WA model, health expenditures had a negative effect, while indirect taxes had an increasing effect on inclusive growth.

Table 7: IGI models long term forecast results

		EDEX	HLTEX	INDTAX	TRNEX	C
IGI_EW	Coefficient	-0.050677	-0.279839	-0.186643	-0.035396	5.162.853
	t-Statistics	-2.533.855	-6.955.911	-3.778.819	-2.359.346	24.599.538
	Probability value	0.1268	0.02	0.0634	0.1423	0.0016
IGI_CA	Coefficient	-0.169614	-2.225.971	-4.542.301	-0.961519	21.952.582
	t-Statistics	-1.270.228	-3.409.226	-2.545.366	-1.910.781	3.180.805
	Probability value	0.2936	0.0422	0.0843	0.152	0.0501
IGI_MK	Coefficient	-0.195117	-0.578888	0.01645	0.358784	2.051.544
	t-Statistics	-2.867.661	-11.331.575	0.141665	3.596.382	4.187.752
	Probability value	0.0642	0.0015	0.8963	0.0369	0.0248
IGI_AV	Coefficient	-0.070625	0.07806	1.536.167	1.008.721	-2.391.504
	t-Statistics	-0.635803	0.248454	1.942.819	2.825.932	-0.738044
	Probability value	0.59	0.827	0.1915	0.1057	0.5373
IGI_WA	Coefficient	-0.08024	-0.30314	0.202103	0.105808	1.473.424
	t-Statistics	-1.835.381	-8.193.473	2.473.445	1.574.994	4.252.897
	Probability value	0.1638	0.0038	0.0898	0.2133	0.0238

All indices except IGI_AV, show that health expenditures had a decreasing effect on Türkiye's inclusive growth in the 2006-2018 period. During this period, increased privatization in Turkish health care widened inequality to access in health services. We found two opposite results: indirect taxes had an increasing effect on IGI_WA and a decreasing effect on IGI_EW and IGI_CA. The share of indirect taxes in total tax revenues in Türkiye is over 60%. Economic growth accelerates on strong domestic demand and increases tax revenues. But it must be remembered that indirect taxes increase income inequality, thus negatively affecting inclusive growth. We saw positive effects of transfer expenditures at IGI_MK. The public pensions, which reduce poverty in the elderly population, have the largest share in transfer expenditures. Direct cash transfers enable the poor to benefit more from education and health services while increasing their income. The results showed that education expenditures had a negative effect on IGI_MK. But high youth unemployment rate, especially for university graduates, is a growing problem in Türkiye. It is thought that education spending negatively affects inclusive growth through the unemployment rate. We would like to remind you that we used the ratio of the Ministry of National Education budget to GDP since we could not find reliable data on education expenditures.

5. Conclusion

Although economic growth is seen as an important factor to improve the life of citizens, it is known that growth has no ability to reduce poverty, unemployment and income inequality by itself. Fiscal policies emerge as the most effective tool in combating these three problems. In this study, the effects of fiscal policy implemented in Türkiye on inclusive growth were investigated. The study covers the period between 2006-2018. The impact of public education, health, transfer expenditures and indirect taxes on inclusive growth was tested with ARDL models by annual data.

The fact that the analysis was made with a small sample since the study covers 13 years, will certainly be subject to criticism. Due to limited data availability, we could only access annual data since 2006. One of the aims of this study was to contribute to the literature by creating an index that measures Türkiye's inclusive growth. Therefore, five different inclusive growth indices were created to use as an indicator of inclusive growth. According to the results obtained, all the inclusive growth indices show that Türkiye had more inclusive growth in the period under consideration except for the year 2009.

Since 2002, the Turkish government emphasized that they have increased public expenditure for education, health and social transfers. We also tried to answer the question of whether public expenditures for education, health, social transfers and tax policy as a fiscal policy could affect inclusive growth in Türkiye?

The results we obtained show that health expenditures had a decreasing effect on four IGIs. It can be said that the most important reason for this result was the decrease in Türkiye's total health expenditure. The health expenditure as a share of GDP decreased from 5.6% of GDP in 2006 to 4.4% of GDP in 2018. Türkiye's health care spending remains far below OECD countries. We observed the reducing effect of indirect taxes on two IGIs. The share of indirect taxes in total tax revenues is more than 60% in Türkiye. Considering the effect of indirect taxes on increasing income inequality, this result can be explained. We determined that social transfers could boost inclusive growth. It is known that transfers do more to reduce inequality than taxes. Obtained results showed that education expenditures in Türkiye had a reducing effect on inclusive growth.

In this study, the first step in creating an inclusive growth index for Türkiye has been laid. In further studies, it will be possible to examine both the inclusive growth and the effects of the policies to be followed with a sufficient number of data covering a longer period.

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