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# Chapter 10
# The Built-In Flexibility of Income and Consumption Taxes in OECD Countries

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## ABSTRACT

*Compatible with a variety of cyclical fluctuations in fiscal policy, is the automatic stabilising fiscal policies. There is a need to calculate the income elasticity of tax for relieving the effects of cyclical fluctuations. Income elasticity of tax, that is tax revenue have relative change, the ratio of the relative change in national income. This ratio must be bigger than 1 to label a tax system as elastic. If this ratio is bigger than 1, this situation also show the tax system has an automatic stabilizing feature. By that way, without any changes in tax structure, tax revenues increase in the deflation times and decrease in the inflation times. The automatically compensatory movement of tax revenues, generally referred to as "built-in flexibility", has received increasing attention. The aim of this study is examining the existence of automatic stabilizers in the OECD countries by evaluating the income elasticity of income and consumption taxes and by making cross-countries comparatives.*

## INTRODUCTION

A taxation principle that importantly discoursed and put forward by A. Wagner (1980) for the first time is the "flexibility principle" in the taxation. According to Wagner, the taxes which are placed in a tax system must have a minimum flexibility that allow an increase equally and parallel with the increases in national income. If the taxes would not have an elasticity to correspond the changes in the public needs which are occurred as a result of cyclical fluctuations, the restriction in some public expenditures or financing the expenditures with debts would be inevitable.

The essence of compensatory fiscal policy lies in adjusting the level of government receipts and expenditures so as to stabilize total income (and employment) in the economy. This requires an increase in expenditures and a reduction in tax revenue during periods of deflation and a decrease in expenditures and increase in tax revenue during periods of inflation. Such compensatory movements may be brought about by properly timed changes in expenditure programs and in tax rates, but to some extent they occur automatically tax yields under given statutory rates will fluctuate with changes in the national income since the size of the tax base usually varies directly with the level of income (Musgrave & Miller, 1947: p. 25).

The automatic revenue changes are described in terms of the 'built-in flexibility', or revenue responsiveness, of the tax. A unit-free measure of this responsiveness is the revenue elasticity of the tax; this is the percentage change in tax revenue in response to a given percentage change in income, for a constant tax structure (Creedy & Gemmel, 2007: p. 323).

Estimates of tax revenue elasticities can assist in long-run revenue forecasting. Furthermore, the built-in flexibility of taxation is known to affect the stability properties of macroeconomic models. An elastic tax acts as an automatic stabiliser; when the economy is in recession and incomes are falling (or rising slowly), tax revenues fall proportionately more (or rise more slowly), helping to maintain the growth of disposable incomes or spending (Creedy & Gemmel, 2007: p. 323).

## AUTOMATIC STABILIZER FISCAL POLICY AND BUILT-IN FLEXIBILITY

Automatic stabilizer fiscal policy, attaches importance the impact of revenue and expenditure programs on the national income and accepts the annual balanced budget worsens the economic stability and public expenditures also cause prodigality. On the other hand, this policies worry about uncertainty that brought by the volitive fiscal policies and emphasize on the political obstacles and shortsightedness of such policies. Especially they are afraid of not to leave the programs that implemented in the depression times when the full employment occurs (Due, 1967: p. 559).

Automatic stabilizer fiscal policies has an important role on reducing the economic instabilities. By extending the application field of such policies, the need for direct measures which create uncertainties would be decrease (Due, 1967: p. 560).

In the case of existence of automatic stabilizers, there would be no need to measures and recognitions of political and managerial decision-makers for eliminating the cyclical fluctuations. With this solution, an immediate intervention occurs to solve the problem, without any lag in recognition or harvesting the results of measures (Türk, 2008: p. 103).

Automatic stabilizers are integrated in the economic system as public expenditures or taxes which relieve cyclical fluctuations in the economy.

Taxes, it is an automatic stabilizer. There is a need to calculate the income elasticity of tax for relieving the effects of cyclical fluctuations. Income elasticity of tax, that is tax revenue have relative change, the ratio of the relative change in national income (T=Tax revenue, Y=National income).

$$\varepsilon = \frac{\Delta T \, / \, T}{\Delta Y \, / \, Y}$$

With given tax rates, changes in income lead to changes in the same direction in tax revenues. In this way built-in flexibility of taxation arises. The effect of this built-in flexibility is to lower the multiplier; the percentage by which the multiplier is reduced (or some related measure) is commonly taken to present the stabilizing effect of built-in flexibility (Smyth, 1966: p. 396).

Income elasticities of taxes, can be found in the tax system and also can be calculated for each tax in the tax system. The value of elasticity explains that a tax creates lesser revenue in the recession times or greater revenue in the welfare times of an economic cycle.

If the increases in tax revenues continuously lower than the increases in national income that means income elasticity of tax system is low. This situation shows that this tax system has a weak automatic stabilizer effect.

The automatic stabilizer effect of a tax which has a high income elasticity depends on the level of income that this tax creates in other words its share in the total tax revenues. For example, the effect of a tax that has a lower share in the tax system, would be negligibly small in the whole economy, even it has a high elasticity (Turhan, 1987: pp. 318-9).

The elasticity of a tax also depends upon the structure of tax tariff. Progressively structured taxes follows closer the fluctuations in the national income. Through the gradually taxation, tax revenues increasing if national income increases and tax revenues lowers if national income decreases.

The shortness of a time gap through the withholding method between the creation of a tax debt and its collection, and preventing the tax evasion are determinants on income elasticities of taxes.

## INCOME ELASTICITIES OF INCOME AND CONSUMPTION TAXES IN THE OECD COUNTRIES

The main use of income elasticies of taxes is to identify which taxes are naturally elastic - i.e. which taxes will yield more revenue as GDP rises, even if the rates are not changed from year to year. Elastic taxes are generally considered to be desirable, because they reduce the need to tinker with the tax system every year. Income elasticities of taxes are unit-free, and so may be compared across countries without any further modification (Haughton, 1998: p. 3).

In this chapter, income elasticities of taxes applied in OECD countries will be evaluated and compared with Turkey, over the period 1996-2014. OECD countries are Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom and United States. And the taxes in the tax system are "taxes on income, profits and capital gains of individuals", "taxes on income, profits and capital gains of corporate", "value added taxes" and "taxes on specific goods and services".

As seen in the Figure 1, OECD average of income elasticity of tax system is near 2, between the years of 1996 and 2014. Turkey average of income elasticity of the tax system is 1.6.

The countries which are lower than 2 are Australia, Austria, Belgium, Canada, Denmark, Finland, Germany, Hungary, Ireland, Korea, Luxembourg, Norway, Poland, Portugal, Slovak Republic, Slovenia, Sweden, between the years of 1996 and 2014.

However, income elasticity of tax system in Japan is 16.8 in 2003 and 14 in 2005. This value increased to 12.2 in Mexico and 9 in Turkey in 2009. This value realized as 5.3 in USA in 2009 and 8.9 in Slovenia in 2010. The increase in tax revenue exceed the increase in national income.

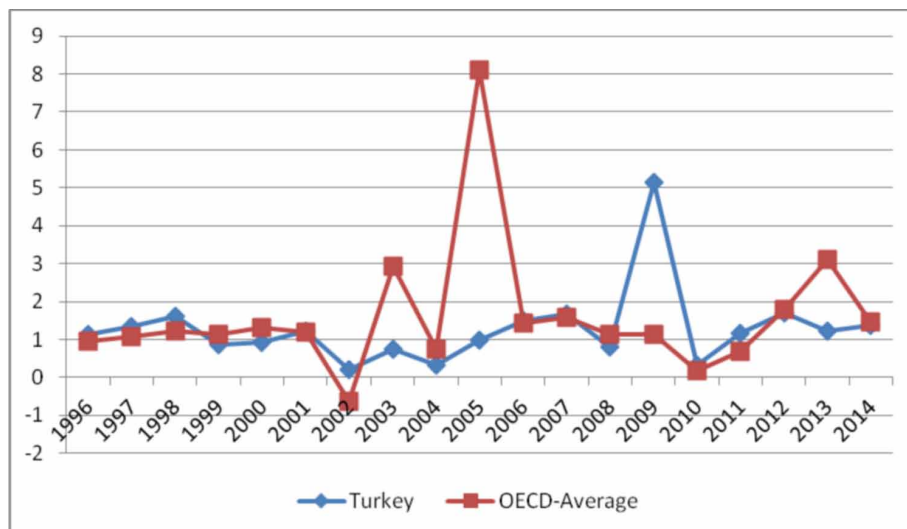*Figure 1. Income elasticity of the tax system*
*Source: OECD Statistics*
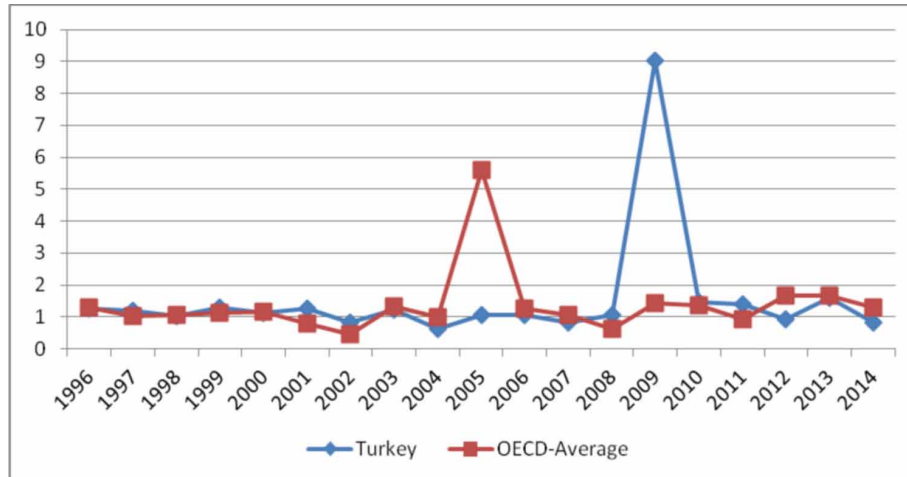


There are countries which have negative income elasticity of tax between 1996 and 2014. This value is -10,5 in Switzerland in 2002 and -6,3 in Chile in 2009. Cylical stabilize effect of the tax system was realized as to weak.

As seen in the Figure 2, OECD average of income elasticity of tax on income, profits and capital gains of individuals is 1.3 between 1996 and 2014. in the year of 2002, the determiner countries of negative value are Switzerland, Norway and Germany. In 2002, this value is -29 for Switzerland, -8 for Norway and -5,8 for Germany. The income elasticity of this tax in Germany, decreases to -7.8 in 2003.

*Figure 2. Income elasticity of tax on income, profits and capital gains of individuals*
*Source: OECD Statistics*

The determiner country is Japan for the increases in 2005. The income elasticity of this tax in 2005 calculated as 70 in Japan. This value is near 50 in 2003. This value had reached to the record values in Japan between 1996 and 2004.

In Turkey, income tax revenue had been unsuccessful to follow the national income. Only in 2010, elasticity value went beyond 5.

As seen in Figure 3, OECD average of income elasticity of tax on income, profits and capital gains of corporates is 2.1, between the years of 1996-2014. However, elasticity values was realized between 15-30 for Austria, Belgium, France, Germany, Portugal, United Kingdom, United States and Turkey in 2009. In Germany, elasticity value was over 50, in 2002 and 2003. In other words, tax revenues have increased faster than national income in Germany in 2002 and 2003.

In the year of 2008 that the appearance of the first effects of the Global Crisis's, OECD average of income elasticity of tax on income, profits and capital gains of corporates fell to -1.6.

The income elasticity of this tax has dropped to -100, in Japan, in 2003. Also it has broken a record high value, in 2005.

Turkey average of income elasticity of this tax is 2.6, between the years of 1996-2014. This value is higher than the OECD average.
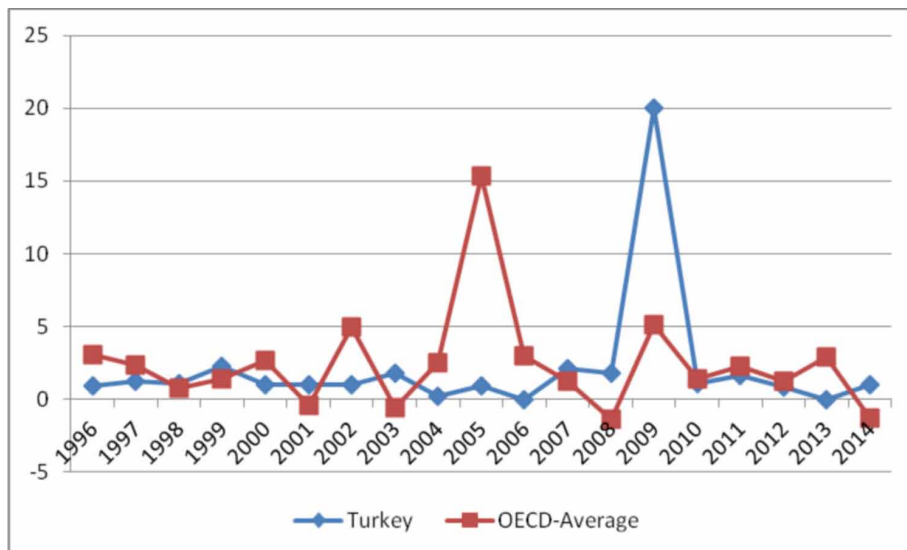
As seen in Figure 4, OECD average of income elasticity of value added tax is 1.5, between the years of 1996-2014. This value is the same as Turkey average.

Japan, Sweden and Korea's elasticity values are above the OECD average. So that the average value of elasticity is 9 in Japan and 4 in Sweden. In these countries, value added tax revenues has increased faster than national income. Value added tax has served as a good automatic stabilizers.

But the lowest average elasticity has emerged in Spain and the value is -1.2.

As seen in Figure 5, OECD average of income elasticity of tax on specific goods and services is 0.9, between the years of 1996-2014. This value is the same as Turkey average.

*Figure 3. Income elasticity of tax on income, profits and capital gains of corporates*
*Source: OECD Statistics*

*Figure 4. Income elasticity of value added tax*
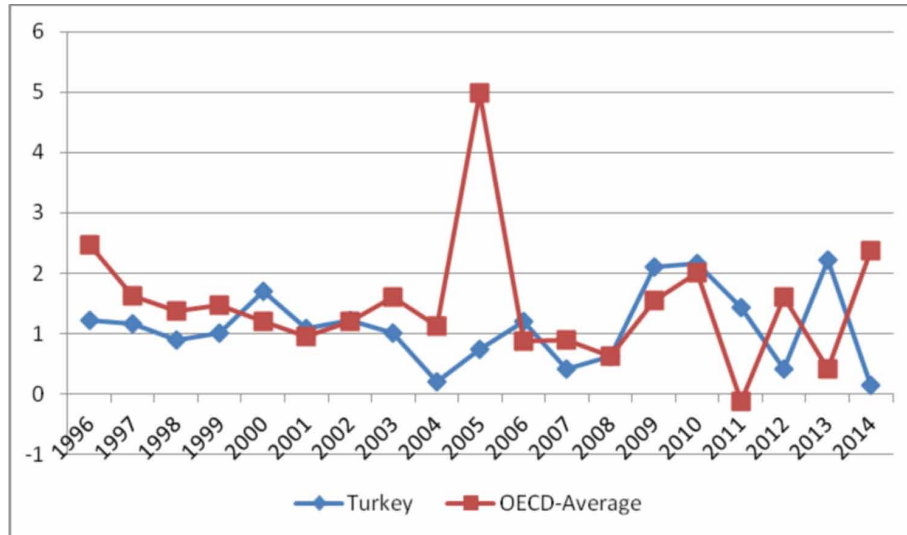*Source: OECD Statistics*



*Figure 5. Income elasticity of tax on specific goods and services*
*Source: OECD Statistics*
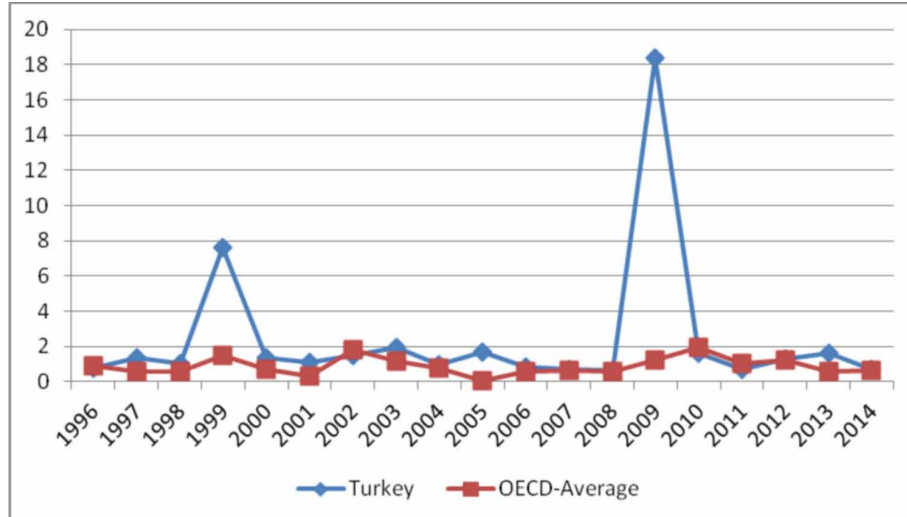


The lowest elasticity value is seen for tax on specific goods and services. The tax revenue had not been successful to follow changes in national income.

Mexico, Slovenia and Turkey's elasticity values are above the OECD average. So that the average value of elasticity is 2.8 in Mexico and 2.6 in Slovenia.

Turkey average of income elasticity of this tax is 2.4, between the years of 1996-2014. This value is higher than the OECD average.

Finally, Japan and Germany average of income elasticity of tax on specific goods and services is negative.

## CRITICS OF AUTOMATIC STABILIZER FISCAL POLICIES AND FISCAL DRAG

There would be question marks about validity of excessive confidence on automatic stabilizer fiscal policies. Are the stabilization policies able to provide proper compensation in expanded depressions or to prevent the price increases in the times that inflationist pressures are merely strong? It is largely known that this policies are not valid in the war or extraordinary circumstances. However that points are views that are not against this policies' validity or usefulness but against a full confidence to this policies (Due, 1967: p. 560).

Sometimes providing economic stabilization by the automatic stabilizers may create social costs. Sometimes the tax load of income taxpayers can be heavy or sometimes transfer expenditures can be reduced. This situation creates social costs and also causes unwanted results for some groups.

Another problem of automatic stabilizer fiscal policy is creating fiscal drag. The issue of revenue responsiveness is popularly thought of as 'fiscal drag', whereby growth in nominal incomes, with a fixed tax structure, raises the average tax rate facing individuals, causing income tax revenues to grow faster than incomes. (Creedy & Gemmel: 2007: p. 323)

The appropriate contribution of the budget to levels of economic activity can best be measured by the full employment budget surplus—by whether the national income budget is in surplus or deficit at a theoretical full employment gross national product. The desired objective is to produce a full employment deficit when economic conditions dictate an expansionary fiscal policy and a full employment surplus when a restrictive policy is desired (Packer, 1965: p. 128).

According to its proponents, this tool makes it possible to eliminate distortions introduced by effects of the business cycle on revenues and expenditures in evaluating the budget's impact and thus to determine whether a budget deficit incurred under conditions of less than full employment is actually making an appropriate contribution to economic expansion. It also becomes possible to measure the relative expansionary effects of several budgets over a period of years since the surpluses and deficits are now measured under comparable economic conditions (Packer, 1965: p. 128).

## CONCLUSION

The income elasticity of a tax determines the reaction of tax base against the fluctuations in national income. The taxes that have high elasticity, adjust themselves with the cyclical fluctuations and their automatic stabilizer effects increase. The automatic revenue changes are described in terms of the 'built-in flexibility' of the tax.

Having high income elasticities of taxes is a desirable situation for the governments. By that way, stabilization in the government revenues can be ensured. On the other hand, making the combination of debt and expenditure plans can be easier.

The OECD average of income elasticity of tax system is 1.3 between the years of 1996 and 2014. Turkey's average is 1.6 for that period. In the year of 2009 that Global Crisis's effects are visible, this value increases until 12.2 in Mexico, 9 in Turkey and 5.3 in USA. Following year it realized as 8.9 in Slovenia. The increases in tax revenues rapidly climbed over the increases in national income.

There are countries which have negative income elasticity of tax between 1996 and 2014. This value is decreased until -10.5 in Switzerland in 2002 and -6.3 in Chile in 2009. Cyclical stabilizer effect of tax system is really weak for that countries and that period.

The highest income elastic tax is income tax (tax on income, profits and capital gains of individuals) for the period of 1996-2014. Turkey had also reached that average. In spite of that, in the year of 2002, income elasticity of income tax is -29 for Switzerland, -8 for Norway and -5.8 for Germany. This value decreases until -7.8 for Germany in 2003. As seen the increases in tax revenues is below the increases in national income.

The lowest elasticity value is seen for tax on specific goods and services. This tax had been unsuccessful to follow the fluctuations in national income level. However in Turkey, income elasticity of tax on specific goods and services is nearly three times of OECD average.

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## KEY TERMS AND DEFINITIONS

**Automatic Stabilizer:** Automatic stabilizers are solutions as progressive taxes or unemployment wages which are balance economy by decreasing the government revenues and triggering the demand in the recession periods or by increasing the government revenues and restrict the demand in the inflationist periods.

**Built-in Flexibility:** The automatically compensatory movement of tax revenues.

**Compensatory Fiscal Policy:** This policy is a program that offered by Keynesian economists. When the effective demand of the private sector is insufficient to ensure full employment, this policy makes contributions to find the balance point with the increases in government expenditures.

**Economic Stabilization:** This term expresses maintaining the monetary, taxation and revenues policies without a negative effect to the market economy and its operations. In such situation all the macro-economic indicators would be in a harmony with each other.

**Fiscal Drag:** Growth in nominal incomes, with a fixed tax structure, raises the average tax rate facing individuals, causing income tax revenues to grow faster than incomes. This situation named as Fiscal Drag.

**Income Elasticity of Tax:** This term explains the ratio of relative change in the tax revenue and the relative change in the national income.

**OECD Countries:** The Organisation for Economic Co-operation and Development (OECD) is an international economic organisation of 34 countries, founded in 30 September 1961 to stimulate economic progress and world trade. OECD countries are Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom and United States. an international economic organisation of 34 countries, founded in 30 September 1961 to stimulate economic progress and world trade. OECD countries are Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom and United States.

**Tax Tariff:** This term mentions about measure or measures set which must be applied to the basis of tax for calculating the exact amount of tax.