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The Laffer Effect at Turkish Social Security Administration's Premium Revenue

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Abstract

This study is an attempt to analyse and deep the insurance premium rate/load as a factor that influences the premium revenues for the Social Security Administration by using the Laffer curve logic and to identify the premium load that maximizes premium revenues and the improvement it would bring to the Administration. Turkish Social Security system separates the employees three main groups: Indıvıduals working on service contract who are subject to SSK(Social Insurance Administration) , Individuals working on their own names and accounts who are subject to Bag-Kur(Craftsmen And Artisans And Other Self-Employed Social Insurance Institution) and public employees who are subject to ES (Retirement Fund General Directorate) before the social security reform. The previous study, "Model Proposal for Investigating and Increasing the Social Security Administration's Premium Collection Revenue" analysed the relationship between the premium revenue and premium rate/load for all the employees and make a total analyse for premium rate and revenue. In this study it will be focused on : Indıvıduals working on service contract who are subject to SSK(Social Insurance Administration) before the reform.The monthly data for the period between October 2008 and December 2012 were used in the study. The results of the analysis revealed a significantly parabolic relationship between the Administration's premium revenues and insurance premium load, which is similar to the Laffer curve. The insurance premium rate that would maximize the Administration's premium revenues was found to be 36.9% and it was determined that an improvement amount of 6.8 billion TL would have been obtained for the premium revenues in 2012 if this rate had been applied. In fact the explanatory power of this study (%96) is more than the explanatory power of previous study (%80) because the ex-study consisted of the public employees and trades people whose elasticity is lower against the social security premium rate.

Keywords: Premium Rate; Premium Revenue; Earnings Based On Premium; The Laffer Curve.

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1. Introduction

Turkish Social Security system separates the employees three main groups: Indıvıduals working on service contract who are subject to SSK(Social Insurance Administration) , Individuals working on their own names and accounts who are subject to Bag-Kur (Craftsmen And Artisans And Other Self-Employed Social Insurance Institution) and public employees who are subject to ES (Retirement Fund General Directorate) before the social security reform.

This study attempted to identify the premium rate/load that maximizes the premium revenues of the Social Security Administration gained from Indıvıduals working on service contract and to calculate the amount of its contribution to the Administration's premium revenues if this rate is applied. The study is divided into two sections. The first section models the relationship between the Social Security Administration's premium revenues and premium rate; identifies the premium rate that maximizes the Administration's premium revenues; and determines the financial improvement that application of the rate would bring to the Administration on a monthly and yearly basis. The second section interprets the analysis results and offers some suggestions.

2. Model Construction and Estimation

This study draws upon a study conducted by Beenstock (1979) and another one by Dogan (2002), which is based on the former. In the first of these studies, Beenstock (1979) estimated the relationship between tax revenues (R) and tax rate (T) for the period between 1946 and 1977. Tax rate was calculated as the ratio of tax revenues to GDP. An equation that includes the time factor (t), which represents the development rate enabled in an economy by factors that are independent from the tax system such as social improvements, technical advancement, etc., was constructed as follows:

$$R= \alpha + (\beta+t) \ T- \lambda \ T^2 \tag{1}$$

In this equation, one can obtain the rate that ensures maximum tax revenue in the form of $dR/dT=0$ $T_{max} = (\beta+t)/2\lambda$

In another study, Seyhun (2002) investigated whether actual tax rates were above or below the tax rate that would maximize revenues and constructed the following model:

$$Log \ R= (\alpha+\beta t)T-\lambda T^2 \tag{2}$$

Here, R represents tax revenues, T represents the tax rate, and t represents trend. By adding variable (y) that represents the GDP for the previous period to model (2), model (3) was obtained.

$$Log \ R= (\alpha+\beta y)T-\lambda T^2 \tag{3}$$

As is well-known, the Laffer curve, which represents the relationship between tax revenues and tax rates, propounds that an increase in tax rates could reduce tax revenues or a decline in tax rates could result in an increase in tax revenues. The Laffer curve postulates that as tax rates increase from zero to 100%, the tax revenue will first be maximized and then will fall back to zero again. Thus, it is assumed that there will be no tax revenues if tax rate is 0% and 100%.