Ahmet Burçin Yereli,
İbrahim Erdem Seçilmiş
*and Alparslan Başaran**

SHADOW ECONOMY AND PUBLIC DEBT SUSTAINABILITY IN TURKEY

SIVA EKONOMIJA I ODRŽIVOST JAVNOG DUGA U TURSKOJ

ABSTRACT: *The aim of this study is to examine the relationship between the shadow economy and public debt in Turkey. We elaborate on the questions regarding the negative effects of shadow economy on the sustainability of public debt observing the estimates about the size of shadow economy in Turkey. In the light of some scholars' estimates, we re-evaluate the macroeconomic situation of Turkey. At the core of the study, we discuss how the government borrowing policies would differ if the shadow economy was included into the legal system. In order to examine the effects of shadow economy on sustainability, we use various sustainability indicators. There is a significant difference observed between the calculations which take into account the volume of shadow economy as a share of economic system and those that exclude shadow economy as an exogenous variable.*

KEY WORDS: *Public Debt, Shadow Economy, Sustainability*

Jel Classification: E 26, H 63

APSTRAKT: *Namena ove studije je da razmotri odnos između sive ekonomije i javnog duga u Turskoj. Ušli smo u pojedinosti pitanja negativnih dejstava sive ekonomije na održivost javnog duga, istovremeno prateći procene o veličini sive ekonomije u Turskoj. Koristeći procene izvesnih stručnjaka, reevaluiramo makroekonomsku situaciju u Turskoj. Suštinu naše diskusije predstavlja način na koji bi uključenje sive ekonomije u legalne tokove uticalo na vladinu politiku zajmova. Da bismo razmotrili uticaj sive ekonomije na održivost, koristili smo različite indikatore održivosti. Uočena je značajna razlika između onih proračuna koji uzimaju u obzir obim sive ekonomije kao udeo u ekonomskom sistemu i onih koji isključuju sivu ekonomiju kao egzogenu varijablu.*

KLJUČNE REČI: *javni dug, siva ekonomija, održivost*

---

* Hacettepe University, Department of Public Finance, Ankara, Turkey

1. Introduction

This paper aims to analyze the links between shadow economy[1] and public debt. In the last decades, public debt and shadow economy have been anticipated as critical problems for both developed and developing countries. As the volume of shadow economy rises from day to day, politicians have become more concerned about the stability of macro indicators. Shadow economic activities – employment, production and exchange unreported to government authorities – constitute a large and growing part of all economic activity throughout the world (Schneider, 2000:81). Even though there are various attempts – challenges even – in order to prevent the increase in the size of the dark economy, as an emerging issue shadow economy still has a priority among those dealt with by policy makers.

Public debt can be considered as the second important issue which makes the government's job harder. Regardless of the level of development, most countries have experienced the repercussions of their borrowing policies. Especially in the transition countries, that fact creates a volatile economic performance as a result of the fragile structures of the markets. The re-payments of the public debt and the rise of government spending enlarge the dimensions of the problem in those low performing economies.

Our analysis is an attempt to show the connection between these two inter-related issues in Turkey. Up to now, both of them have been accepted as the cornerstones of the stabilization policies by almost every government. However, as a result of the awareness of the policy makers about the relationship between those two, Turkish economy has become a riskier country for those involved.

2. The Definiton and Size of Shadow Economy

There is a large volume of literature on shadow economy; as a result of the numerous studies and various techniques used by scholars in order to analyze the phenomenon, there are a lot of definitions. However, one commonly used working definition is:

---

[1]   In this study *shadow economy*, *dark economy*, *hidden economy*, *informal economy*, *underground* and *unoffical economy* will be used interchangeably.

"All economic activities that contribute to the officially calculated (or observed) gross national product but are currently unregistered (Schneider and Enste, 2000a:78)."

The definitions differ as a result of the various techniques used by scholars and there are still disagreements about the definition of shadow economy activities (Schneider and Enste, 2000b:3). However, unofficial economy constitutes activities that are not recorded in the government statistics (Choi and Thum 2005:2) and many authors have reached an agreement that it is mainly an increasing burden of taxation, social security contributions and excessive state regulatory activities combined with labour market restrictions that have heavily contributed to the growth of underground economies (Bouev,2002:Non-technical Summary) .

As in the above argued issue, it is also very hard to measure the size of unofficial economy in a single manner. Regardless of whether shadow economic activity is viewed as adverse or benign, there are clearly benefits to understanding its size and extent;, considerable work has been devoted to estimating the size of shadow economy, using a variety of methods. Unfortunately, all of these methods are to some degree different and appear to generate divergent estimates (Fleming, Roman and Farrell, 2000:398).

In this study, the estimations which were calculated by Schneider (2005), Schneider and Savaşan (2005) via *DYMIMIC (dynamic multiple-indicators multiple causes) Model* will be used for Turkey over the period over 1999-2003 and the estimations calculated by Savaşan (2003) via *MIMIC (multiple-indicators multiple causes) Model* will be used for Turkey over the period 1991-1998. There will be no further looking into the size or measuring techniques of shadow economy other than the above mentioned in this section.

2.1. The Size of the Shadow Economy in Turkey

Firstly, we had an intent to use the estimates which were calculated via *DYMIMIC Model* for all of the study as a result of its dynamic structure. However, the mentioned model was used for estimation after the year 1998, so we had to use the estimates which were calculated by *MIMIC Model* for the years before 1999.

We would like to choose the estimation which was made via *DYMIMIC Model*, for the sake of checking the effects of multiple indicators on hidden economy in a dynamic manner. By this way, some assumptions are more relaxed and the error which is caused by looking from one point of view is minimized. Schneider explains the reason of why using *DYMIMIC Model* is better:

> *"It is based on the statistical theory of unobserved variables, which considers multiple causes and multiple indicators of the phenomenon to be measured. For the estimation, a factor-analytic approach is used to measure the hidden economy as an unobserved variable over time. The unknown coefficients are estimated in a set of structural equations within which the "unobserved" variable cannot be measured directly. The DYMIMIC (dynamic multiple-indicators multiple-causes) model consists in general of two parts, with the measurement model linking the unobserved variables to observed indicators. The structural equations model specifies causal relationships among the unobserved variables. In this case, there is one unobserved variable, or the size of the shadow economy, this is assumed to be influenced by a set of indicators for the shadow economy's size, thus capturing the structural dependence of the shadow economy on variables that may be useful in predicting its movement and size in the future (Schneider and Klingmair,2004:39)."*

In Table 1, Column A shows the estimations made about the size of the shadow economy in Turkey between the years 1991-2003. The realised GNP of Turkey is given in Column B for the same years. In column C, the realised GNP data was recalculated by adding the size of unofficial economy to the realized one.

Table 1. The Size of the Shadow Economy in Turkey and Recalculation of Realized GNP Data

Years	A The Size of Shadow Economy (as a percentage of GNP)	B Registered GNP (in billion US $)	C Registered+Unregistered GNP (in billion US $)
1991	0.205	152.4	183.6
1992	0.230	160.7	197.7
1993	0.228	182	223.5
1994	0.255	131.1	164.6
1995	0.160	172	199.5
1996	0.188	184.7	219.5
1997	0.246	194.4	242.2
1998	0.280	206	263.7
1999	0.321	187.7	247.9
2000	0.321	201.5	266.1
2001	0.332	144.6	192.6
2002	0.343	182.9	245.7
2003	0.348	238.4	321.4

Source: Column A: Schneider (2005), Schneider and Savaşan (2005), Savaşan (2003), Column B: Turkish Treasury Statistics, Column C: Calculated by authors

3. The Analysis

In this study, the relation between the public debt and the shadow economy will be analyzed. The rationale which lies at the core of the analysis is the following: *If the hidden economy in Turkey could be recorded, what changes would be experienced in debt sustainability?*

As it does all over the world, shadow economy accounts for a larger and larger share of GDP in Turkey (Najman, 2003). The distortion effect of the black economy performs as a multiplier on the negative effects of the high level public debt. The reasons which deepen the debt problem are high interest rates and the terms of the borrowing. Governments prefer tighter fiscal policies in order to sustain the debt as a result of this fact. They generally choose to increase the tax

ratios when the time is close to the maturity date of the bonds and the payments of their interests. As a result, more tax-payers perform their economic activities in the underground in order to pay less tax, and the size of the shadow economy is a proxy measure of the Hard-to-Tax [2](Alm et all, 2004:19). So the taxation reforms realized in order to increase the tax revenue cause a rise in the size of the shadow economy, and more underground activities mean less tax income and more social transfer. By this way, the effort of the government in order to decrease the debt stock and repay the debt actually increases the government's additional financial resources needed. Furthermore, the size of the debt problem has been inevitably enlarging from day to day as a result of this vicious circle.

However, in our opinion, the real solution for the public borrowing problem is to record the unofficial economic activities. We believe that if governments succeeded in that, the debt stock would decrease and the size of debt would mean no more problem for Turkish economy. In this study, we investigated the effects of recording the unofficial economics activities on the debt sustainability in Turkey.

As it can be remembered, we determined that the shadow economy data will be used. Next, in this section we mentioned the debt sustainability indicators which will be used. Two indicators which are explained below will be used in the analysis:

3.1 The One-Period Primary Gap (GAP_t^1)

The One-Period Primary Gap indicator was developed by Buiter (1995):

$$GAP_t^1 \equiv s_R^{\square 1}(0) - s_A^{\square 1} = \left(\frac{r_t - g_t}{1 - g_t} \right) b_{t-1} - \overset{\square}{s_t} \tag{1}$$

GAP_t^1, the one-period primary gap in period t is excess of the augmented primary surplus-GDP ratio that stabilizes this period's debt-GDP ratio over the

---

[2] Taxing certain kinds of activities, sectors or individuals is called Hard-to-Tax (Alm et al., 2004:2).

actual current augmented primary surplus -GDP ratio (Buiter, 1995:11). The indicator was developed in order to measure the difference between the next period (t+1) required primary surplus and the current one (t). If the calculated difference between these terms are positive, this fact means the fiscal policy is unsustainable and there is an urgent need for a policy reform in order to prevent insolvency.

The term $\left(\dfrac{r_t - g_t}{1 - g_t}\right) b_{t-1}$ shows the required primary surplus and the term

s_t shows the current primary surplus. In this equation, the notations r, b, g, s denote the following ones respectively:

-     r; the domestic real interest rate
-     b; the nominal value of the total net stock of non-monetary financial liabilities of the Combined Public Sector at the end of the mentioned period, as a fraction of that period' s GDP
-     g; the rate of growth of real GDP
-     s; the primary surplus as a fraction of GDP

3.2 The Medium-Term Tax Gap Indicator[3]

The Medium-Term Tax Gap Indicator was developed by Blanchard et al. (1990).

$$t^* - t_t = \frac{1}{5} \sum_{i=0}^{5} g_{t+i} + \frac{r_{t+5} - n_{t+5}}{1 + n_{t+5}} b_t - t_t \tag{2}$$

The indicator shows the difference between the sustainable (for the next five years) tax ratio (t^*) and the current one (t_t). If the result is positive, the fact shows that there is a need to increase the tax ratio in order to provide debt sustainability.

---

[3]   In this study only short and medium term indicators will be used in order to minimize the estimating errors

In this equation, the notations are used to denote the following terms:

- b; the current debt as a fraction of GDP
- r; the domestic real interest rate
- n; the rate of growth of real GDP
- $\frac{1}{5}\sum_{i=0}^{5} g_{t+i}$; the average of government non interest spending as fraction of GDP for the next five years

3.3. The Revision of Data's and Sustainability Indicators via Aggregating Official and Shadow Economy in Turkey

The Primary Gap Indicator. Firstly, in Table 2 there are the results of the calculation of Primary Gap Indicator in Turkey via realized data.

As it can be remembered, if the primary gap is positive, this shows the debt is unsustainable. Between the years 1991-2003, the primary gap indicator was positive for 10 years and the number of negative indicators was only three. This demonstrates that the debt stock is a real problem for Turkish economy.

Table 2. The Official Primary Gap Indicator between 1991-2003 in Turkey

Years	Official Rate of Growth	Official Sustainable Primary Surplus[4]	Official Primary Gap Indicator[5]
1991	0.00	0.01	0.03
1992	0.06	0.01	0.02
1993	0.08	0.12	0.12
1994	-0.06	0.04	0.00
1995	0.08	0.09	0.05
1996	0.07	0.05	0.04
1997	0.08	0.04	0.04
1998	0.04	0.16	0.11
1999	-0.06	-0.10	-0.12

---

[4] $r \equiv (i - \pi)/(1 + \pi)$

[5]   GNP is used instead of GDP.

2000	0.06	0.24	0.19
2001	-0.10	0.04	-0.03
2002	0.08	0.08	0.04
2003	0.06	0.02	-0.03

Source: Turkish Treasury Statistics (1990-2003), International Monetary Fund (2000-2003), Turkish Statistical Institute (1990-2003), State Planning Organization (1990-2003)

In Table 3, the primary gap indicator is recalculated under the assumption of the shadow economy recorded and GNP anticipated as the sum of both official and unofficial economies.

Table 3. The "O+U" (Official+Unofficial) Primary Gap Indicator between 1991-2003 in Turkey

| Years	O+U Rate of Growth[6]	O+U Sustainable Primary Surplus	O+U Primary Gap Indicator[7]
1991	0.00	0.01	-0.01
1992	0.08	-0.00	-0.02
1993	0.13	0.20	0.18
1994	-0.26	-0.01	-0.09
1995	0.21	0.06	0.01
1996	0.10	0.04	-0.01
1997	0.10	0.02	-0.02
1998	0.09	0.12	0.03
1999	-0.06	-0.08	-0.16
2000	0.07	0.34	0.21
2001	-0.28	-0.08	-0.22
2002	0.28	-0.06	-0.18
2003	0.31	-0.06	-0.19

Source: Calculated by authors

There is a great difference observed between Table 2 and Table 3. As it can be seen above, in the analysis in which unrecorded economy was included as an

---

[6]   Calculated by authors
[7]   GNP is used instead of GDP.

addition to the official data, the number of the years when the primary gap indicator was positive was only three. It is obvious that if all economic activities were recordable, then Turkish Economy would not have such a fragile structure, and probably the debt stock would not be a significant problem for the stability. We think that situation is created by the difference between official growth rate and O+U growth rate. In Figure 1, it can be easily observed.

Figure 1. The Comparison of the Official and O+U Growth Rates 1990-2004
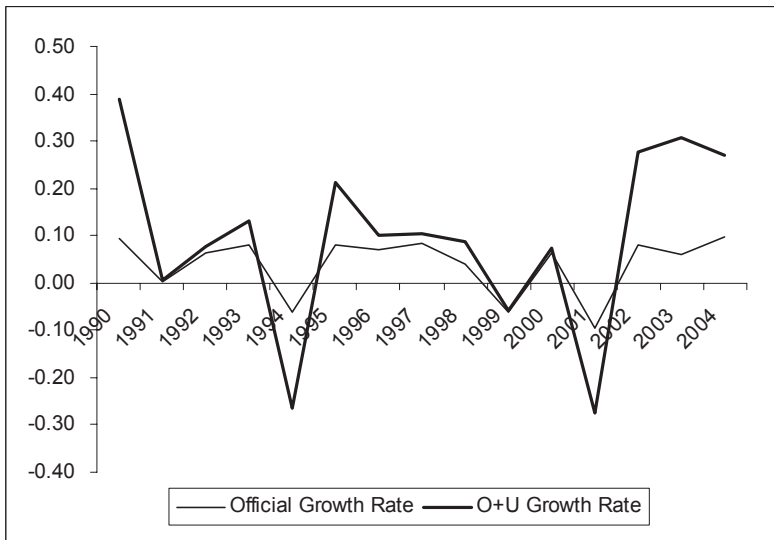
Source: Turkish Treasury Statistics

The most interesting deviations between the two rates were experienced in 1994-1995 and 2001-2002. In those years, a large number of both domestic and foreign factors caused great crises. Turkish Economy was in a great depression and there was a lack of stability. So we can say that in the years in which low economic performance is observed, the size of the shadow economy increases hugely.

The Medium-Term Tax Gap Indicator.

In Table 4, the medium-term tax gap indicator was calculated with the official data.

The realized data indicated that due to the sustainability of debt in those years tax rates had to be increased. Maybe, today's economic performance is a result of the wrong fiscal policies of those years; from this point of view there is a welfare transfer between the generations.

Table 4. The Official Medium-Term Tax Gap Indicator between 1991-1998 in Turkey

Years	Non-Interest Spending to GNP Ratio[8]	Official Sustainable Tax Ratio	Official Tax Gap Indicator[9]
1991	0.17	0.24	0.11
1992	0.16	0.21	0.08
1993	0.18	0.20	0.07
1994	0.15	0.34	0.19
1995	0.14	0.12	-0.02
1996	0.16	0.41	0.26
1997	0.19	0.23	0.07
1998	0.18	0.27	0.10

Source: State Planning Organization (Non-Interest Spending/GNP)

In Table 5, the O+U sustainable tax ratio and O+U tax gap indicator were calculated. Regardless of the choice of data (official or O+U), in all years between 1991-1998 except for 1995, there was a need to increase the tax ratio in order to sustain the debt. However, it is obviously understood that the needed rises in tax rates were very low in O+U calculations relatively. Except in 1996, there was a 3% average difference between the needed official rise and O+U rise. That can be accepted as a proof for the shadow economy's distortion effect on Turkish economy. Furthermore, 3% is a very significant rate for Turkish Taxation System regardless of who pays it. That means that a redistribution of income, which diverges to the pareto-optimal allocations, is experienced. This type of redistribution could touch the most sensitive moral values of the society, since sometimes tax differences are not as important as income differences (Hanousek and Palda, 2003:163).

---

[8]   GNP used instead of GDP
[9]   Tax Burden used as tax ratio

The reason for higher tax ratio in O+U calculations for 1996 is very much the same as in the above discussed topic in Figure 1. As a result of the 1995 depression, the enlargement in the size of shadow economy caused deviations from the aimed total tax income which was planned by Revenue Service. So there was an alternative method in order to increase the tax income, that of an increase in the tax rate. In the following years, as a result of the rise in the tax rate, Turkey has experienced high tax burden and the other repercussions of the fiscal based compensation policies deeply at the cost of low levels of overall welfare.

Table 5. The Official+Unofficial Medium-Term Tax Gap Indicator between 1991-1998 in Turkey

Years	O+U Sustainable Tax Ratio	O+U Tax Gap Indicator[10]
1991	0.21	0.09
1992	0.20	0.07
1993	0.18	0.05
1994	0.31	0.15
1995	0.13	-0.01
1996	0.51	0.36
1997	0.17	0.01
1998	0.19	0.02

Source: Calculated by authors

3.4. Some Other Dimensions of Public Debt and Shadow Economy Relation

The Primary Surplus and the Shadow Economy

The reason for the high tax rates should be examined from the point of the shadow economy in a different manner as well. The shadow economy is also very effective on the analysis of total debt stock as a fraction of GNP. As it can be seen in Figure 2, there is an important difference between the official debt stock/GNP ratios and O+U debt stock/GNP ratios. As a result of this difference, a higher primary surplus is advised by economists in order to be solvent (Dornbusch and Fischer, 1994:582). A higher primary surplus means higher tax

---

[10]   Tax Burden used as tax ratio

rates or decreasing the volume of the funds which are allocated for education, public health and culture.

Figure 2. The Comparison of the Ratios of Public Sector Net Debt Stock to Official and U+O GNP in Turkey between 1990-2004
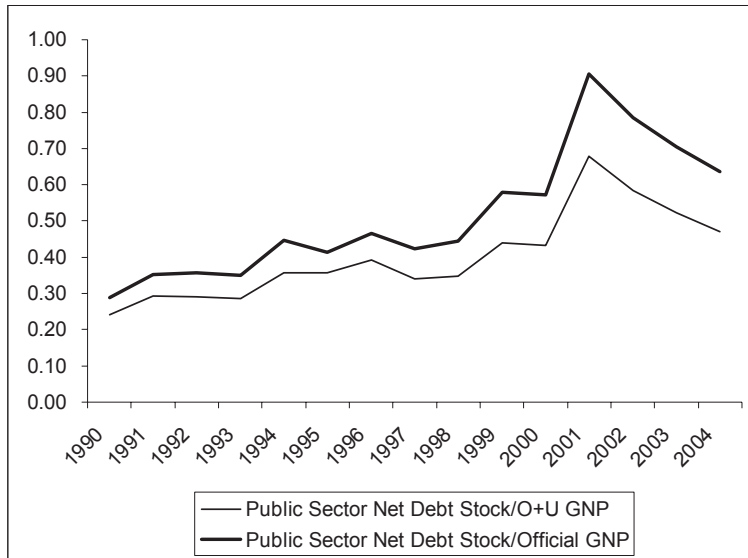
Source: International Monetary Fund (1990-1999), Turkish Treasury Statistics (2000-2004)

The loss of tax income caused by shadow economy changes the budget balance in a critical way and references more fiscal discipline both for public revenues and spending. In Table 6, the primary budget balance can be seen via both the realised and revised data.

The primary budget balance which is focused by most policy makers is a powerful indicator in determining the fiscal policy. The primary budget balance in Turkey is seen very differently with regard to whether the unofficial activities are included in it or not. Furthermore, as the size of shadow economy decreases, the fiscal policies will vary gradually in favour of the household and the overall welfare in society will follow a parallel path in Turkey.

Table 6. The Primary Budget Balance in Turkey between 1991-2004 (In US Dollar)

Years	Official Primary Budget Balance	The Additional Tax Revenue From the Unrecorded Activities	O+U Primary Budget Balance
1991	-1769912	3170456	1400544
1992	-816517	3798960	2982443
1993	-1104438	4159193	3054755
1994	3818678	3893463	7712141
1995	4253516	2827465	7080981
1996	2443426	3904759	6348185
1997	204141	5674099	5878240
1998	7551793	8223298	15775091
1999	2891084	8755308	11646392
2000	10629567	12603906	23233473
2001	8313804	9120108	17433912
2002	7173109	12453684	19626793
2003	13122368	20920232	34042600
2004	19427555	26372308	45799862

Source: Turkish Ministry of Finance Budget Reports

The Tax Revenue and Interest Payments

The first sentence of Blanchard and Weil's study "Dynamic Efficiency, The Riskless Rate, and Debt Ponzi Games Under Undercertainty" is the following:

"Can governments roll their debt over forever in dynamically efficient economies, and thus avoid the need to raise taxes? (Blanchard and Weil, 1992: Abstract)"

This is really a critical question which investigates the financial constraints of the governments. Rising taxes is a magical policy instrument for the governments – as it was experienced in the United Kingdom in 1993 (Sutherland, 1997:147). The answer to the question depends on the restrictions which exist on the capacity to tax and which also account for the government's

ability to issue debt (Buiter and Kletzer, 1992:1). As it is known, taxing capacity affects government expenditures and policies definitely (Davis and Henrekson, 2004:1).

Under fairly tight restrictions on the government's tax menu, rolling over of debt infinitely in the long term is a very hard, almost impossible, process;. because in the rolling over mechanism the share of the debt interest payments increases as it converges to infinity.

As a result of short maturity and increasing interest payments, the need of the government for new income sources is becoming more urgent every day, and after an uncertain time period Pozi Finance becomes inevitable faith for the government. However, there is an alternative way in order to roll debt over also under the assumption of tight restrictions.

Tight and fair restrictions on a taxation menu come together and create a protective system which is designed for the security of personal rights and freedoms. In this way, the arbitrary and despotic decisions of the policy makers (putting up new taxes whenever they need any extra income regardless of the effects on inequality) are no more threats for freedom.

As mentioned above, also under tight restrictions, governments can prevent insolvency. However, only a small group of people are aware of the effect of the shadow economy on taxation. More economic analysis of taxation neglects the underground sector (Davis and Henrekson, 2004:5). But the solution for the above mentioned problem is decreasing the size of shadow economy so the tax income could be increased without any need to invent new taxation techniques.

In Figure 3, the chart compares the official tax income, interest payments and O+U tax income in Turkey between 1997-2004. As it is noticed, the difference between the official tax income and O+U tax income follows an increasing trend from year to year.

Figure 3. The Comparison of Official Tax Income, Interest Payments and O+U Tax Income in Turkey between 1997-2004
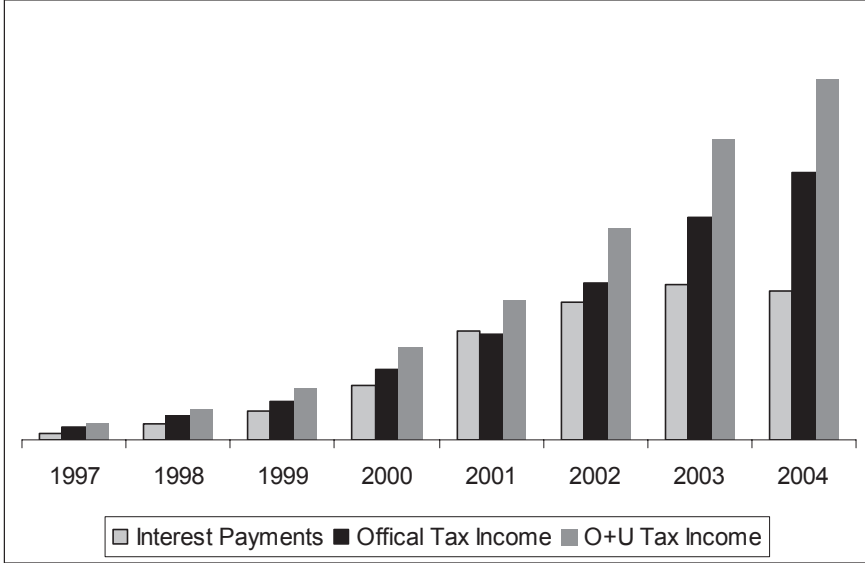
Source: State Planning Organization, Turkish Ministry of Finance

Table 7. The Ratio of Interest Payments to the Official Tax Income and O+U Tax Income

Year	Interest Payments/ Official Tax Income (IP/OTI)	Interest Payments/ O+U Tax Income (IP/O+UTI)	Year	Interest Payments/ Official Tax Income (IP/OTI)	Interest Payments/ O+U Tax Income (IP/O+UTI)
1991	0.31	0.25	1998	0.67	0.52
1992	0.28	0.23	1999	0.72	0.55
1993	0.44	0.36	2000	0.77	0.58
1994	0.51	0.40	2001	1.03	0.78
1995	0.53	0.46	2002	0.87	0.65
1996	0.67	0.56	2003	0.70	0.52
1997	0.48	0.39	2004	0.56	0.41

Source: (IP/OTI) Turkish Ministry of Finance Budget Reports, (IP/O+UTI) Calculated by the Author

For the sake of simplicity of the analysis, in Table 7 the ratio of interest payments to the tax incomes in Turkey was examined via both official data and under the assumption of the shadow economy recorded. As it is seen above, between the years 1991-2004, the arithmetic average of the ratio which is equal to interest payments over official tax income is 0.61; however, when the average was recalculated using O+U tax income instead of only the official one, 0.47 was found as new value. The difference of 0.14 can be regarded as a very critical indicator under the assumption that the volume of the shadow economy was added to the official one, which means that the tax income can serve its basic goals in a more efficient manner in order to increase the level of satistifaction of the citizens whose welfare is very dependent on national security, externalities, social security, health, education and so forth.

4. Conclusions

As a conclusion, a political-economic revision of fiscal policy has to be considered urgently in Turkey. The shadow economy's distortion pressure on markets does not only affect macroeconomic performance but also supports disrespectful behaviours against human rights[11].

Shadow Economy can be considered as one – maybe the most important – of the main causes of the debt accumulation in Turkey. At the beginning of the 1980s, the total debt stock of Turkey was not greater than 35% of the GNP. However, in the 2000s, debt stabilization programmes have been the primary priority of the government.

With the 1980s, a new period in Turkish economy began. Fiscal liberalization was taken into account by policy makers in order to provide a rapid transition to an open economy. As a result of rapid evolution, most regulations were relaxed simultaneously. The changes enabled certain enterpreneurs to shift their current economic activities underground and create new activities which could not be recorded by anybody.

---

[11] "Disrespectful behaviours against human rights" emphasises working conditions in the underground sector, the intergenerational transfer of welfare and the unfair redistribution of income via failures in taxation system etc.; however, those issues are not evaluated in this study any further because of the limitd scope of the paper.

As the size of shadow economy increased in the 1980s and 1990s, there was a parallelism observed between the rise of public debt and the rise of the size of shadow economy. In 2001, the public sector total debt was approximately 140 percent of GNP in Turkey.

After the 1980s, the revenue of the public sector was generally under the expectations. The government needed more financial resources in order to compensate for the lack of revenue and accumulate funds for the integration process. The chosen instrument was borrowing in order to provide an additional financial resource. The instrument chosen temporarily at the beginning became permanent as a result of the simplicity. When the repayment time was up, the dream turned into a shock. The most vital mistake was experienced at that time. Governments should be aware of the vicious circle into which they would push the people of their country. All effort should have been aimed at recording the underground economic activities and the repayments would have been settled by the new resources provided by decreasing the size of the shadow economy. However, that solution was not preferred by the government because of various reasons such as populism, self-interest and rent-seeking. Since, the shadow economy has not been only anticipated as one of the causes which creates a debt trap but also as a factor that deepens the dimension of the debt problem.

Nowadays, both the shadow economy and the debt stock are accepted as the most important problems of the Turkish Economy. IMF and World Bank are observing whether Turkish politicians apply macroeconomic policies leading to stabilization or not. So, first of all, a challenge against the shadow economy should come into the agenda. If the reduction of the size of the shadow economy realized, high public debt would decrease to acceptable levels in short time with no more sacrifice.

In order to produce solutions, firstly the causes of the problems must be analysed in a detailed manner. So the policy makers who are responsible for stabilizing Turkish economy should know the economic history of Turkey to start with.

BIBLIOGRAPHY

Alm, J., Martinez-Vasquez J. and F. Schneider (2004), "Sizing The Problem Of Hard-To-Tax", AY-SPS Conference: *The Hard-to-Tax, An International Perspective*

Bouev, M. (2002) "Official Regulations and the Shadow Economy: A Labour Market Approach", *William Davidson Institute Working Paper 524*

Blanchard, O. J., J-C. Chouraqui, R. P. Hagemann and N. Sortor, (1990), "The Sustainability of Fiscal Policy: New Answers To An Old Question, *OECD Economic Studies No:15*

Blanchard, O.J. and P. Weil (1992), "Dynamic Efficiency, The Riskless Rate, and Debt Ponzi Games Under Undercertainty", *National Bureau Of Economic Research Working Paper No. 3992*

Buiter, W H. (1995), "Measuring Fiscal Sustainability", *mimeo*, Cambridge University

Buiter, W.H. and K.M. Kletzer, (1992), "Government Solvency, Ponzi Finance and The Redundancy and Usefulness Of Public Debt", *National Bureau Of Economic Research Working Paper No. 4076*

Choi, J. P. and M. Thum (2005), "Corruption and The Shadow Economy", *International Economic Review,* Vol. 46, No. 3, pp. 817-836,

Davis, SJ. and M. Henrekson (2004), "Tax Effects On Work Activity, Industry Mix and Shadow Economy Size: Evidence From Rich-Country Comparisons", *National Bureau Of Economic Research Working Paper No. 10509*

Dornbusch, R. and S. Fischer (1994), *Macroeconomics*, McGrawHill, International - Sixth Edition

Fleming, M.H., J. Roman and G. Farrell (2000), "The Shadow Economy", *Journal of International Affairs*, Vol. 53, No. 2, pp. 387-409

Hanousek, J. and F. Palda, (2003), "Why People Evade Taxes in the Czech and Slovak Republics: A Tale Of Twins", *The Informal Economy In The EU Accession Countries: Size, Scope, Trends and Challenges To The Process Of EU Enlargemen*t, Center For The Study Of Democracy, pp.139-173

Najman, B. (2003), "Development Economic Policy: How To Integrate Shadow Economy", *Reinventing Development Conference,* Belgrade, Institut Ekonomskih Nauka

Savaşan, F. (2003), "Modelling the Underground Economy in Turkey: Randomized Response and MIMIC Models", *Journal of Economics,* v. XXIX, No.1, pp. 49-76

Schneider, F. (2005), "Shadow Economies of 145 Countries All Over The World: Estimation Results Over The Period 1999, *University of Linz: Dpartment of Economics, Discussion Paper Linz*, Austria

Schneider, F. (2000), "Dimensions Of The Shadow Economy", *The Independent Review,* v. 1, pp. 81-91

Schneider, F. and D.H. Enste (2000a), "Shadow Economies: Size, Causes and Consequences", *Journal of Economic Literature*, Vol. XXXVIII, pp. 77-114

Schneider, F. and D.H. Enste (2000b), "Shadow Economies Around The World: Size, Causes and Consequences", *IMF Working Paper*, WP/00/26

Schneider, F. and R. Klinglmair (2004), "Shadow Economies Around The World: What Do We Know?", *IZA Discussion Paper No. 1043*

Schneider, F. and F. Savaşan (2005), " The Size of Shadow Economies of Turkey (and of her Neighbouring Countries) Including an Informal Hiring and Sectoral Anaylsis of the Turkish Shadow Economy", www.economics.uni-linz.ac.at/Schneider/

Sutherland, A. J. (1997), "Fiscal Crises and Aggregate Demand: Can High Public Debt Reverse The Effects Of Fiscal Policy?", *Journal of Public Economics 65*, pp. 147-162