



THE RELATIONSHIP BETWEEN TAXES AND SHADOW ECONOMY IN TURKEY

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Abstract

This study focuses on the understanding of what has been wrongly called the “informal economy”. The aim of this study is to show that this shadow economy is, in fact, a set of strategies implemented by socio-economic actors in need of filling a gap. Hence, this study reviews the concept of shadow economy and factors that could have an impact on it. Specifically, the study examines the relationship between all of unemployment rate, corporation income tax, interest rate, goods and services tax, value added tax, revenue tax, labor force participation rate, labor force ratio, property tax, individual income tax, capital and financial transactions tax, and total revenue taxes on the size of the shadow economy within developing countries, including Turkey and Sweden which are subjects of the study. The theoretical work is basically from the literature review about shadow economy, from previous studies and in points of view of dominant schools of thoughts and researchers. The research uses quantitative methods where data is collected from OECD about Turkey and Sweden. Data is analyzed using SPSS Descriptive statistics was applied followed by correlation test to test the hypotheses. The results indicate that there is an effect of taxes on the size of the shadow economy in different way.

Keywords: Shadow economy, total revenue taxes, interest rate, Turkey, Sweden

INTRODUCTION

The research measured the effect of factors including taxes on corporations and individuals leading to create what we know nowadays shadow economy. The notion of shadow remains an invention reflecting the inability to define a sociocultural and economic reality. Its popularization by international institutions and organization by international institutions and organizations has been the basis of many programs and formalization projects, whose objective was the integration of the informal sector into the national development process of developing countries, including Turkey.

Today, as yesterday, formalization approaches have shown, not their weakness, but rather their incapacity and “illegitimacy”. The problem is the definition, that is to say; the very characterization of what is called, so to speak, erroneously informal economy or unregistered economy, illegal economy, parallel economy or shadow economy, etc... We must believe that this so called informal economy, illegal, unregistered, shadow, will continue to make its merry way, thus constituting this form of resistance to the other, which is reflected in the fight for the right to existence and refusal to be phagocytized by the other. This study thus shows that economies, still invisible, want to emerge through the apparent disorder. These economies would be more of survival strategies than a “shadow economy”, two very distinct concepts of each other.

The shadow economy or the underground, secondary, informal sector is a controversial term, which was first coined in 1972, in (ILO) the International Labor Organization report on Kenya, even that the subject has entered the academic debate after the world war II (*ILO 1972*). Throughout the academic literature, the term shadow economy has been used interchangeably with terms such as informal work, informal sector, and informal economic activity. While attempting to describe those economic activities that are not covered by formal arrangement, the literature itself presents a merging of the term as studies refer to the informal economy as follow: irregular economy (*Ferman, 1973*), subterranean economy (*Guttmann, 1977*), the underground economy (*Simon and White 1982, Houston 1987*), The black economy (*Dilnot and Morris 1981*), and the shadow economy (*Frey, Weck and Pomeerehne 1982, Cassel and Cichy 1986*).

The current formal economy is governed by Western rules of operation and management, while the informal economy is endogenous. Thus, the success of most “microenterprises” in the so-called informal sector yet struggling with a hostile environment and deprived of all state aid, is mainly due to the ability of entrepreneurs to reconcile socio-cultural values with the necessary economic efficiency.

The purpose of the study

The main purpose of this study is to interrogate the outcomes of taxes on the expanded size of the shadow economy in Turkey, besides making a comparison to country with low size of shadow economy as Sweden the used one in this study, through focuses on:

- Clarifying the possible reasons that impact the economic growth of the country creating the known shadow economy.
- Investigating the relationship between taxes and increased size of the shadow economy in Turkey.
- Analyzing how could taxes affect the shadow economy using specific tools of research.
- Provide recommendation to prevent the increased impact of tax burden on shadow economy and by the end impacting the economic growth of the country.

LITERATURE REVIEW

Shadow Economy

The shadow designation involves an area of economic activity in which participants prefer to stay out of sight. (*Schneider et al. 2010*) go so far as to say that “Doing a research in this area can be considered as a scientific passion to know the unknown” (p.444). In addition, the formal definition of the shadow economy is the subject of lengthy reports (*Schneider, 2011*). I contend that the shadow economy activity consists of a market activity deliberately undertaken in a manner that eludes detection by public officials. While this definition potentially includes both illegal activity and what would be legal if not deliberately concealed. Hence, according to this definition, illegal drug traffickers and illegal black marketers both contribute to the shadow economy.

The existence of an important shadow economy is above all a sign of a serious dysfunction of the formal economy or public services of the state, a first critical issue related to the definition of the shadow economy. Since the mid-century, the shadow economy has become an important topic by the researchers (*Gouldner, 1954. Blau, 1957*), at the very beginning, the studies focused essentially on the informal economy in the developing countries (e.g. *Hart, 1973*). After that, the researchers focused on the developed countries to study the shadow economy (*Gerxhani, 2003*). The recent works have concentrated essentially on the conceptualization of the shadow economy besides its significance (*Harding and Jenkins, 1989. Hernando, 1990. Feige, 1990*).

Schneider also (1986) stated that a shadow economy is simply all economic activities that should be included in value added and should be incorporated in the national income but have not been reported to the government. In contrast, *Smith (1994)* stated that the shadow

economy is the total sum of the market basket of products and services, whether legal or illegal, that has not been added to the yearly registered gross domestic product (GDP) of a specific country. *Enste and Schneider (2000)* further emphasized that the shadow includes literally all activities that should be added to national income but have not been. Furthermore, *Chye et al. (2011)* defined the shadow economy as all transactions, whether legal or illegal, that escape government observation, regulation, and taxation.

Çiloğlu (1998), defined the shadow economy as: “All of the economic activities used to obtain the GNP accounts and which are not estimated according to known statistical methods “. In the tax context, *Altuğ (1994)*, mentioned: “Tax incentives or avoidance of tax incentives and activities of tax administration out of knowledge”. And according to *Smith (1994)*, the shadow economy is defined as follow: “Market and market-based, legal or illegal, service production which is not included in official GDP estimates”. We consider the definition as well provided by *Sarıllı (2002)*, “All kind of economic transactions and activities outside of the control of public administrations”, besides *Choi and Thum (2005)* definition: “Activities not included in official statistics”

The evolution of the shadow economy

Since its discovery in the 1970s, the shadow economy and its role in economic development have been heatedly debated. From 1950s- 1960s, it was assumed that, modern economies and petty traders, small producers and many casual jobs would be absorbed into the formal economy with the right mix of economic policies and resources, low income traditional economies could be transformed into dynamic. By the mid-1960s, optimism about economic growth in developing countries has begun to give way to concerns about widespread unemployment and persevering traditional economy. By the 1970s, British anthropologist Keith Hart coined the term “informal sector” during his study about economic activities among rural migrants in Accra on 1971, Ghana (*Hart 1973*). Hart concluded that, in spite of external constraints besides capitalist domination, the overwhelming majority of migrants were engaged in informal activities that had “autonomous capacity for generating incomes”.

By the 1980s, the debate widely expanded to include changes occurring in developed capitalist economies, in which production was reorganized into small and more flexible economic units. These kinds of changes were associated with the informalization of employment. Standard jobs switched to non-standard jobs, where wages were hourly and the benefits were too weak, and the production was contracted on piece rate without any benefit to small units and industrial workers. On that phase, the informal economy turned into a

permanent and dependent feature of capitalist development. Also, during the 1990s, globalization contributed to the informalization of the workforce in many countries.

More recently, there was a renewed interest in the informal economy over the globe. In fact, since the shadow economy has not only grown, but also emerged in new shapes and in unexpected areas. Informal employment expanded conspicuously during this recession (*Horn 2009*). While interest in the informal economy was more focused, the concept was more emphasized to be useful to many policymakers and researchers. The informal economy is nowadays a field of study in its own right, covering scholars from many disciplines, including economics, gender, industrial relations, political science and sociology. Focusing on the size and composition of the shadow economy, what causes the informality, study the consequences in terms of productivity and welfare.

RESEARCH METHODOLOGY

Research design

The study will be presented by utilizing a secondary quantitative data and will depend totally on annual statistics of economic field of Turkey for the time span of 1990-2017. The reason behind selecting time series database is that the aim of the research is to study the continuously increasing of shadow economy during this phase and to determine the reason behind this increasing size, thus the use of statistical methods to analyze this time series data in order to extract meaningful results about the data.

Data sources and instruments

The research will utilize the secondary data and the work done will be collected from evaluation of yearly reports and statistics listed at OECD stats web site concerning Turkey. The variables used in this study are CIT (corporate income tax), GDP (gross domestic product) growth rate, TR (Taxes revenue), IR (interest rate), LF (labor force) rate, LF ratio, PT (property tax), TTR (total tax revenue), CFTT (capital and financial transaction tax), IIT (individual income tax), GST (goods and services taxes), VAT (value added tax) and UNEMP (unemployment) rate.

Data processing and analyzing

The research requires to employ different approaches to study the variables influencing the shadow economy. First, basic statistics will be used to analyze and describe data for final rendering with mathematical calculations that make it possible to release data a real positive or negative trend of the results. The mean and the variance of the data will be calculated then graphical analysis will be presented. The descriptive analysis will be fully shown, equally

important, the correlation matrix for the variable will also be stated in order to check the correlation that could exist between the variables with graphs as well to figure the correlation type.

RESULTS

Descriptive analysis

Basic descriptive statistics provide simple information about the sample and observations that has been interpreted after the collection of data. It essentially displays the data and numerical facts as graph or table surely with examining and determining procedures. To reach the result, mean, median, standard deviation, variance, kurtosis, skewness, minimum and maximum are used for the evaluation.

Table 1: Descriptive analysis of Turkey's data

	Mean	Median	Std. Deviation	Variance	Kurtosis	Skewness	Min	Max
CIT	1.46	1.60	0.37	0.14	-1.03	-0.56	0.76	2.01
GDP	4.73	6.09	4.62	21.37	0.56	-1.16	-5.96	11.11
IR	15.47	12.81	8.20	67.22	3.79	1.68	6.93	39.73
LF	53.88	52.68	3.36	11.31	-1.11	0.36	49.64	59.96
LF r	49.54	49.19	3.29	10.81	-0.76	0.51	45.45	55.74
PT	0.79	0.80	0.30	0.09	-1.02	-0.04	0.33	1.31
TR	4.95	5.24	1.70	2.90	-1.31	-0.11	1.98	7.30
CFTT	0.60	0.58	0.22	0.05	-1.00	0.12	0.29	0.95
GST	9.33	10.77	2.64	6.96	-0.86	-0.82	4.06	12.46
IIT	4.06	3.84	0.67	0.44	0.85	1.38	3.44	5.63
TTR	22.01	23.43	3.68	13.57	-0.69	-0.92	14.55	25.90
VAT	4.81	5.01	0.92	0.84	0.15	-0.68	2.67	6.28
UNEMP	9.02	9.08	1.89	3.56	-0.10	0.37	6.00	13.34

The maximum value of CIT is 2.01 and the minimum value is 0.76 the mean and median of CIT are 1.46 and 1.60 respectively as the standard deviation and variance are 0.37 and 0.14 respectively as well, concerning the skewness value is -0.56 which means that there is a moderate negative skew, besides the kurtosis value -1.03 which means that there is a plytokurtic more flat.

The maximum value of GDP is 11.11 and the minimum value is -5.96, the mean is 4.73 while the median is 6.09 concerning skewness value is -1.16 which means that there is a high negative skew, while the kurtosis is 0.56 which means that is also a plytokurtic more flat.

For the IR variable, the maximum and minimum values are respectively 39.73 and 6.93, the skewness value is 1.68 which means that there is a high positive skew and concerning the kurtosis value is 3.79 which means that there is a leptokurtic high peak.

For the LF rate the maximum and minimum values are respectively 59.96 and 49.64, the mean and median are around the same value and are respectively 53.88 and 52.68, concerning the skewness value is of 0.36 which imply that there is a symmetrical skew, the kurtosis value is -1.11 that means there is plytokurtic more flat.

Coming to PT, the minimum and maximum values are 1.31 and 0.33, respectively. The skewness value -0.04 that means that there is a symmetrical skew.

The maximum value of GST is 12.46 and a minimum value as 4.06, while the skewness is near to -1 with the value -0.82 that imply that there is high negative skew.

TTRas well shows a skewness with the value -0.92 that imply that there is a high negative skew. Equally important the VAT shows a skew with a value -0.68 indicating that there is a moderate negative skew.

Table 2: Descriptive statistics of Sweden's data

	Mean	Median	Std. Deviation	Variance	Kurtosis	Skewness	Minimum	Maximum
CIT	2,67	2,67	0,58	0,34	0,41	-0,50	1,29	3,69
GDP	2,10	2,46	2,34	5,48	1,75	-1,14	-5,13	5,70
IR	3,89	3,25	4,00	15,96	0,91	1,21	-0,50	14,03
LF rate	89,83	90,01	1,38	1,89	-0,72	0,06	87,74	92,78
PT	1,36	1,40	0,30	0,09	-1,34	0,25	0,99	1,92
CFTT	0,30	0,27	0,14	0,02	9,38	2,82	0,13	0,85
GST	12,21	12,16	0,29	0,08	0,82	0,00	11,50	12,84
IIT	14,50	14,58	1,87	3,48	-0,45	0,27	11,70	19,06
VAT	8,45	8,46	0,62	0,39	0,18	-0,89	7,02	9,26
TTR	45,43	45,11	2,12	4,50	-0,93	0,40	42,51	49,48
UNEMP	7,54	7,37	2,11	4,44	0,79	0,03	2,11	11,67

The maximum value of CIT is 3.69 and the minimum value is 1.29, the skewness is -0.50 that means that there is a moderate negative skew and kurtosis value is 0.41 that implies that there is a plytokurtic more flat. Besides the variance is 0.34 that means that sets are near each other. The maximum value of GDP is 5.70 and minimum is 1.29, while the skewness value is -1.14 that indicates that there a high negative skew, besides kurtosis is equal to 1.75 that states that there is a plytokurtic more flat.

For IR maximum 14.03, and minimum -0.50, the skewness shows a value of 1.21 indicating that there is a high positive skew besides a kurtosis 0.91 indicating that there is a platykurtic.

IIT, VAT, TTR and UNEMP are showing negative values of kurtosis that means that there is a platykurtic more flat, while CFTT shows the higher number of kurtosis that implies that there is leptokurtic high peak.

LF, PT, GST, IIT, TTR and UNEMP show small values of skewness that mean that there is symmetrical to moderate skew.

Correlation analysis

Correlation analysis is an analysis based on calculating the strength of relationship between two variables. Correlation matrix is used to evaluate the dependence or the relationship between several variables at the same time. The characteristics of the correlation matrix are that it is diagonal and symmetric since the coefficients of the matrix are symmetrical with respect to the main diagonal which equal to 1 (from the top left corner to the bottom right corner).

The strength of the linear relationship between the two variables: The more the value of the coefficient is close to +1 or -1, the more strongly the two variables are associated. On the contrary, the closer the coefficient is to 0, the less the variables are related and hence the less the association is strong.

The direction of the linear relationship between the two variables: The correlation coefficient, which finally the standardized covariance varies between -1 and +1. A coefficient of 1 indicates a perfect positive correlation between the two variables. Conversely, a coefficient of -1 indicates a perfect negative correlation: when X increases, the Y decreases in the same proportion. In both cases, the points fall perfectly to the line. A coefficient of 0 indicates that there is no relationship between the two variables. After calculating the correlation matrix of the study, the results were presented the Table 3.

Table 3: Correlation matrix results of Turkey

	CIT	GDP	IR	LF	LF r	PT	TR	CFTT	GST	IIT	TTR	VAT	UNEM
CIT	1	--	--	--	--	--	--	--	--	--	--	--	--
GDP	-0.03	1	--	--	--	--	--	--	--	--	--	--	--
IR	0.26	0.00	1	--	--	--	--	--	--	--	--	--	--
LF	-0.81	-0.09	-0.34	1	--	--	--	--	--	--	--	--	--
LF r	-0.43	-0.01	-0.29	0.99	1	--	--	--	--	--	--	--	--
PT	0.53	-0.08	-0.64	-0.53	0.22	1	--	--	--	--	--	--	--
TR	0.76	0.13	-0.65	-0.84	0.12	0.74	1	--	--	--	--	--	--

CFTT	0.67	0.17	-0.70	-0.83	0.22	0.80	0.92	1	--	--	--	--	--
GST	0.90	0.14	0.38	-0.94	-0.31	0.67	0.84	0.79	1	--	--	--	--
IIT	-0.14	-0.47	0.49	0.21	-0.13	-0.42	-0.40	-0.33	-0.34	1	--	--	--
TTR	0.91	0.05	-0.27	-0.88	-0.20	0.66	0.87	0.85	0.96	-0.15	1	--	--
VAT	0.85	0.09	0.48	-0.80	-0.39	0.52	0.64	0.61	0.90	-0.07	0.90	1	--
UNEMP	0.52	-0.06	0.04	-0.55	0.25	0.56	0.71	0.57	0.62	-0.55	0.54	0.34	1

Table 3...

The correlation coefficient between CIT and LF is -0.81 which indicates that there is a high negative relationship between these variables that implies if the CIT increases (decreases) the LF decreases (increases).

Equally important, the correlation coefficient is positive with all of TR, GST, TTR, VAT and UNEMP and that implies that there is a high positive relationship between both variables which states that they correlate in the same direction.

Concerning GDP, we could notice clearly that there is a weak statistical relationship with other variables except with IIT it is negative stating that there is a moderate negative correlation.

For the variable IR, we notice that except PT, TR, and CFTT that shows a high negative relationship, the rest are showing a low to a little correlation in both directions.

Coming to LF, the matrix shows a positive correlation with LF ratio near to 1 with a value of 0.99 correlating in the same direction positively, while with TR, CFTT, GST, TTR, and VAT there is negative correlation.

PT shows a positive correlation with all of TR, CFTT, GST and TTR.

TR as well shows a perfect positive correlation with CFTT, GST, TTR and UNEMP that means the variables increase and decrease in the same direction.

Concerning GST, there is also a perfect correlation with TTR and VAT that states that the correlation is in the same direction. And finally, TTR correlate highly in a positive way with the VAT with a value of 0.90.

As it is mentioned in the analysis part, we could notice that there is correlation between variables in both directions, and it is indicated that there is an impact of the taxes that are continually increasing for instance the VAT and IIT increases in the same direction that creates a pressure on the individuals that pushes them to seek to work in illegal activities and avoid taxes that could be a reason of the shadow economy in Turkey. To seek if this might be among the reasons, we have conducted a research on shadow economy in Sweden which has a low size of shadow economy comparing to turkey (Table 4).

Table 4: Correlation matrix result of Sweden

	CIT	GDP	IR	LF	PT	CFTT	GST	IIT	VAT	TTR	Unemp
CIT	1,00	--	--	--	--	--	--	--	--	--	--
GDP	0,54	1,00	--	--	--	--	--	--	--	--	--
IR	<u>-0,71</u>	-0,28	1,00	--	--	--	--	--	--	--	--
LF	-0,38	-0,42	0,21	1,00	--	--	--	--	--	--	--
PT	-0,39	0,03	0,63	-0,28	1,00	--	--	--	--	--	--
CFTT	-0,47	-0,28	0,56	<u>0,61</u>	0,25	1,00	--	--	--	--	--
GST	0,08	-0,19	-0,11	0,24	-0,19	0,03	1,00	--	--	--	--
IIT	-0,39	0,03	<u>0,74</u>	-0,14	<u>0,87</u>	0,36	-0,25	1,00	--	--	--
VAT	<u>0,61</u>	0,19	<u>-0,84</u>	-0,02	<u>-0,72</u>	-0,42	0,53	<u>-0,80</u>	1,00	--	--
TTR	-0,10	0,17	0,47	-0,32	<u>0,88</u>	0,24	-0,05	<u>0,87</u>	-0,50	1,00	--
Unemp	0,22	0,17	-0,11	-0,40	-0,02	<u>-0,76</u>	0,01	-0,03	0,05	-0,12	1,00

The correlation coefficient between IR and CIT indicates that there is a negative relationship between both variables which means that when IR increases (decreases), CIT decreases (Increases), same with the relationship between CIT and CFTT.

While there is a positive relationship between VAT and CIT that implies that if VAT increases CIT increases and vice versa. Moreover, correlation coefficients of GDP show that there is a weak relationship of GDP with the other variables.

Concerning IR, there is a positive relationship between IR with all of PT, CFTT and IIT that means that the variables mentioned correlate in the same direction.

But there is a negative correlation with VAT that states that an increase of VAT leads to a decrease of IR and vice versa.

The LF shows a positive correlation with CFTT, which indicates that both variables increase and decrease in the same direction.

PT correlate positively with all of IIT and TTR showing a positive coefficient, while it shows a negative correlation with VAT that means there is a correlation in different directions.

Concerning CFTT, it indicates that there is a low negative correlation with VAT that means both variables correlate in different directions.

IIT as well shows a negative relationship with VAT and a positive relationship with TTR.

While analyzing the variables relationships, it is clearly noticeable that the relationships between taxes is a direct relationship in case of Turkey, that states that taxes increase in the same time and same direction that create the known tax burden which has been previously proved in researches as the main cause of the shadow economy, for instance the VAT

increases in the same time the PT increases creating a pressure on individuals and business concerning properties.

Figure 1 and Figure 2 respectively show the relationships between VAT and PT of Turkey and Sweden.

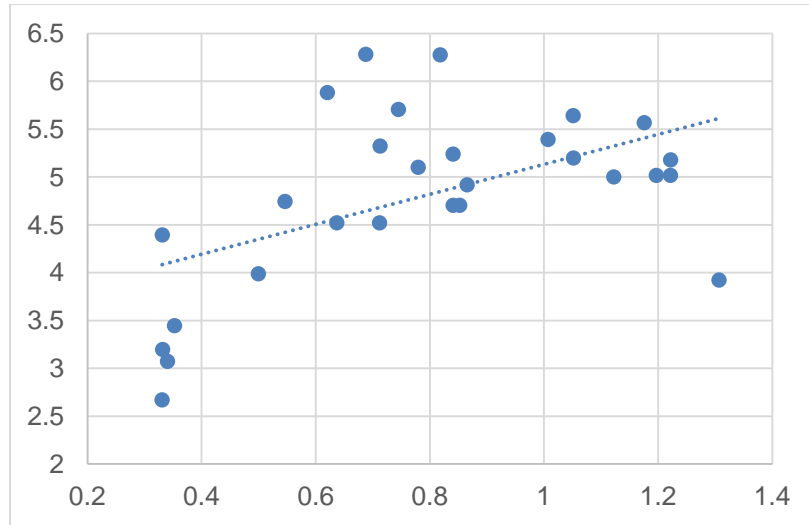


Figure 1 Relationship between VAT and PT in Turkey

Figure 1 indicates that there is a positive relationship between VAT and PT that states that an increase (decrease) in VAT leads to an increase (decrease) in PT, then a direct positive relationship has been found.

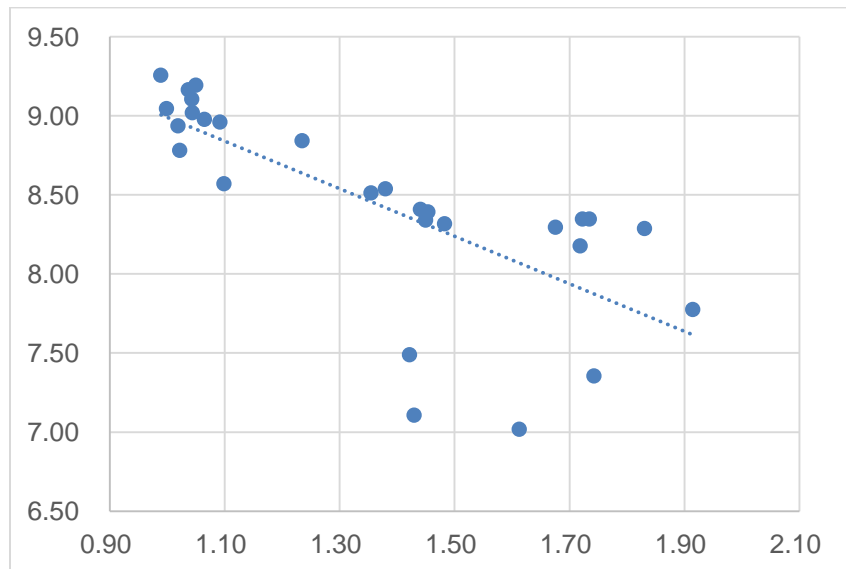


Figure 2 Relationship between VAT and PT in Sweden

Figure 2 illustrates that there is a negative relationship between VAT and PT that implies that if VAT increases (decreases) then PT decreases (increases), then an inverse relationship has been found.

CONCLUSION & RECOMMENDATIONS

The generic term of shadow economy encompasses a wide range of activities from illegal legal activities to illegal activities. Given this diversity, a census of underground activities is a prerequisite for any attempt to measure their importance in relation to the wealth produced annually within a country, with all the reasons of the shadow economy starting from the financial and economic reasons that tax burden and unemployment are part of these reasons, to social and psychological reasons such as the taxpayers psychology and tax resistance.

The correlation analysis for Turkey shows that there is a critical issue of taxes that are high and that the relationship between them changes in the same direction that impact negatively the taxpayers and by the end the individuals tries to avoid paying tax and recourse to illegal activities creating the shadow economy in the country that is highly noticed. While the correlation analysis for Sweden shows that the relationship between taxes varies in different directions when one increases the other decreases creating a less tax pressure on taxpayers' morality so that explain the low size of shadow economy in Sweden. And the results are consistently with previous studies about shadow economy reasons.

Finally, after reviewing the results, and reaching the recommendation part, the researcher reached some recommendations to be mentioned to benefit from them for the future studies, since Turkey is facing a phase of high taxes that is becoming more and more a burden for businesses and taxpayers, and since government has a positive influence on economic growth therefore my recommendations includes that the government should attempt to soften some business regulations that pushes private corporations and businesses to go into hidden and not declare their income that must be subject to tax. Moreover, the policymakers should endeavor to reduce the taxes gradually by applying some improvement to tax laws so that the taxpayers will invest in healthy economic indicators and they will be encouraged to comply with their duty to the government without high taxes that creates burden and by the end creating the shadow economy.

REFERENCES

- Altuğ, O. (1994) "Draft Law on The Amendment of Various Laws for The Informal Taxation of the Informal Economy".
- Blau, P. M. (1957). "Formal organization: Dimensions of analysis". *American Journal of Sociology*, 63(1):58–69.
- Cassel, D. and Cichy, U, (1986) "Explaining the Growing Shadow Economy in East".
- Choi, J.P, Thum. M(2005). "Corruption and the Shadow Economy". *International Economic Review/ Volume 46, Issue 3. 05 July 2005.*
- Chye, L. T., (2011). "Underground economy: Definition and causes". *Business and Management Review* 1, 14–24.
- Çiloğlu, I. (1998) "The Operation of the Informal Economy and its Effects on Public Budget", *treasury magazine*, p.11, pp.67-91.
- Dilnot, Morris, M., (1981). "Divergent Paths: Economic Mobility in the New American Labor Market". New York: Russell Sage Foundation.
- Feige, L. (1990) "Defining and Estimating Underground and Informal Economies: The New Institutional Economics Approach", *World Development*, Vol:18, No:7.
- Ferman, P. (1973) "The Structural Underpinning of the Irregular Economy Poverty and Human Resources", 8 pp. 3-17.
- Frey, B.S, Weck, H and W.W. Pommerehne (1982), "Has the Shadow Economy Grown in Germany?", 118, pp.499-524.
- Gerxhani, K. (2003) "The Informal Sector in Developed and Less Developed Countries: A Literature Survey, *Public Choice*", 114/3-4, pp. 295-318.
- Gouldner, A. W. (1954). "Patterns of industrial bureaucracy". New York, NY, US: Free Press.
- Guttman, P. (1977) "The Subterranean Economy". *Financial analysts Journal*, 34(1): 24-27.
- Harding, P. and Jenkins, R. (1989). "The myth of the hidden economy: towards a new understanding of informal economic activity". Milton Keynes: Open University Press.
- Hart, K. (1973) "Informal Income Opportunities and Urban Employment in Ghana". *Journal of Modern African studies*, 11(1): 61-89.
- Hernando, D. S. (1990). "The other path: The invisible revolution in the third world". New York: Harper and Row Publisher.
- Horn. Z. E (2009). "No Cushion to Fall Back On: The Global Economic Crisis and Informal Workers". August 2009. WIEGO publishing.
- Houston, John F., (1987): "Estimating the Size and Implications of the Underground Economy," Working paper 87-9, Federal Reserve Bank of Philadelphia, Philadelphia (N. J.).
- International Labour Organization (1972) "Employment, Incomes, and Equality: A Strategy for Increasing Productive Employment in Kenya". Geneva, Switzerland: International Labour Organization. (ILO).
- OECD stats. 2019.<https://stats.oecd.org/>
- Sarılı, M. A (2002). "Reasons Unregistered Economy in Turkey, Size, Effects and Precautions Should Be Taken". *Journal of Bankers*, (2), 32-50.
- Schneider, F. (1986), "Estimating the size of the Danish shadow economy using the currency demand approach: an attempt", *The Scandinavian Journal of Economics*, 88, pp. 643–668.
- Schneider, F. (2010), "The Influence of Public Institutions on the Shadow Economy: An Empirical Investigation for OECD Countries", *European Journal of Law and Economics*, 6/3, pp. 441–468.
- Schneider, F. (ed.) (2011), "Handbook on the Shadow Economy", Edward Elgar, Cheltenham.
- Schneider, F. and D. Enste (2000), "Shadow economies: Size, causes, and consequences", *The Journal of Economic Literature*, 38/1, pp. 77–114.
- Simon, C.P. and A.D. White. (1982). "Beating the System: The Underground Economy", Boston: Auburn House Publication Co., MA.
- Smith, P. (1994), "Assessing the size of the underground economy: the Canadian statistical perspectives", *Canadian Economic Observer*, 11, pp. 16–33.

APPENDIX

ABBREVIATIONS

CFTT	: Capital and Financial Tax
CIT	: Corporation Income Tax
GDP	: Gross Domestic Product
GST	: Goods and Services Taxes
IIT	: Individual Income Tax
IR	: Interest Rate
LF	: Labor Force
OECD	: Organization for Economic Cooperation and Development
PT	: Property Tax
TR	: Tax Revenue
TTR	: Total Tax Revenue
UNEMP	: Unemployment
VAT	: Value Added Tax