TAX POLICIES AND SOCIAL EXPENDITURES:

COMPARING IMPACTS ON POVERTY AND INEQUALITY

IN TURKEY AND MEXICO

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DECLARATION OF ORIGINALITY

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ABSTRACT

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This thesis examines and compares the impacts of overall Turkish and Mexican fiscal system on poverty and income inequality by using the "conventional" incidence analysis method, based on micro data derived from household budget surveys. The fiscal system in both countries reduce relative and absolute poverty and income inequality. In Turkey, the social security system is more effective than the tax system, while the biggest problem of the fiscal system is the relatively high level of "regressive" consumption taxes. This thesis makes three basic recommendations: Readjusting of the Social Security Contribution (SSC) rates in favor of lower income groups; increasing the number and adjusting of income tax brackets; and reducing of Value Added Tax (VAT) and Special Consumption Tax (SCT) rates, or, preferably, eliminating them completely on basic consumption goods and goods that are important for middle income groups. Mexico's tax system is more effective than its social security system, which is less effective than even the other transfers, while Mexico's main problems are imbalances in social security system and low collection of personal income taxes due to high informality. This thesis asserts that increasing the low SSC rate for pensions would increase the effectiveness of Mexican social security system, while decreasing the high SSC rate for health for incomes below three times of the minimum wage income would decrease informality, which in turn would result raise the amount of income tax collected.

ÖZET

Vergi Politikaları ve Sosyal Harcamalar: Türkiye Ve Meksika'da Yoksulluk ve Eşitsizlik Üzerine Etkilerinin Karşılaştırılması

Bu tez, hane halkı bütçe anketlerinden elde edilen mikro verilere dayanarak ve "geleneksel" vergi yükü analizi yöntemini kullanarak, Türkiye ve Meksika mali sistemlerinin yoksulluk ve gelir eşitsizliği üzerindeki etkilerini karşılaştırmalı olarak incelemektedir. Her iki ülkede de mali sistem hem görece ve mutlak yoksulluğu hem de gelir eşitsizliğini azaltmaktadır. Türkiye'de sosyal güvenlik sistemi vergi sisteminden daha etkili iken, mali sistemin en büyük sorunu "azalan oranlı" tüketim vergisinin nispeten yüksek olmasıdır. Bu tez üç temel çözüm ortaya koymaktadır: Sosyal güvenlik prim oranlarının düşük gelirli gruplar lehine yeniden düzenlenmesi, vergi dilimi sayısının artırılması ve vergi dilimlerinin yeniden tasarlanması, temel tüketim malları ve orta gelir grupları için önemli olan malların KDV ve ÖTV oranlarının azaltılması veya tamamen kaldırılması. Meksika'nın vergi sistemi, etkisi diğer transferlerden bile daha az olan sosyal güvenlik sisteminden daha etkili iken, Meksika'nın temel sorunları sosyal güvenlik sistemindeki dengesizlikler ve yüksek kayıt dışılık nedeniyle kişisel gelir vergisinin düşük miktarda tahsil edilmesidir. Bu tez, düşük olan emekli aylığı prim oranlarının artırılmasının Meksika'nın sosyal güvenlik sisteminin etkinliğini artıracağını, gelirlerin asgari gelirin üç katı miktarı altında kalan kısımları üzerinden sağlık için ödenen sosyal güvenlik primi oranının düşürülmesinin ise kayıt dışılığı azaltacağını ve bunun da toplanan gelir vergisinin payının artmasına neden olacağını iddia etmektedir.

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DEDICATION

This thesis is wholeheartedly dedicated to my beloved parents, *Münevver* and *Selahattin*, who have been my source of inspiration, and to my sweetheart, *Selin*, who gave me strength when I thought of giving up several times, and to my mother-in law, *Nalan*, and my father-in-law, *Abdullah*, who continually provide their moral, spiritual, and emotional support.

TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION 1

CHAPTER 2: LITERATURE REVIEW 6

2.1 Development of incidence analysis 6

2.2 Incidence studies on Turkey and Mexico 10

2.3 Incidence studies on other countries 14

CHAPTER 3: METHODOLOGY 18

3.1 Case selection 18

3.2 Income concepts used 21

3.3 Data sources 23

3.4 Estimations, assumptions and limitations 23

CHAPTER 4: OVERVIEW OF THE TURKISH AND THE MEXICAN FISCAL SYSTEMS 30

4.1 Taxes and SSC 30

4.2 SST and other transfers 36

4.3 Poverty 39

4.4 Income inequality 42

CHAPTER 5: INCIDENCE ANALYSIS: THE IMPACTS OF TAXES, TRANSFERS AND THE SOCIAL SECURITY SYSTEMS ON POVERTY AND INCOME INEQUALITY 45

5.1 Turkey 46

5.2 Mexico 56

CHAPTER 6: DISCUSSION AND CONCLUSIONS 67

6.1 Summary and comparison of results 67

6.2 Comments and policy recommendations 71

REFERENCES 80

LIST OF TABLES

Table 1. Tax Revenue as Percent of GDP in OECD Countries For Selected Years, 1990 – 2016 31

Table 2. Tax Revenue as Percent of GDP in OECD Countries, 1990 and 2015 33

Table 3. Revenues from Different Taxes as Percent of Total Tax Revenue in OECD Countries – 1990 and 2015 35

Table 4. Social Expenditure/GDP Ratios on Different Items in OECD countries – 1990 and 2011 37

Table 5. Average Poverty Rates between 1990-2014 Based on Different Poverty Lines 41

Table 6. Comparative Poverty Rates for Years from 2011 to 2015 42

Table 7. Average Gini Coefficients between 1990 – 2014 (After Taxes and Transfers) 43

Table 8. Comparative Gini Coefficients for Years from 2011 to 2015 44

Table 9. Summary of Cases 45

Table 10. Poverty Rates in Turkey 53

Table 11. Gini Coefficients in Turkey 55

Table 12. Poverty Rates in Mexico 63

Table 13. Gini Coefficients in Mexico 66

LIST OF FIGURES

Figure 1. Incidence of taxes in Turkey 46

Figure 2. Incidence of SSC in Turkey 49

Figure 3. Incidence of SST in Turkey 49

Figure 4. SST/SSC ratio in Turkey (employer's contribution included in SSC) 50

Figure 5. Incidence of other transfers in Turkey 51

Figure 6. Incidence of taxes in Mexico 57

Figure 7. Incidence of SSC in Mexico 59

Figure 8. Incidence of SST in Mexico 60

Figure 9. SST/SSC ratio in Mexico (employer's contribution included in SSC) 61

Figure 10. Incidence of other transfers in Mexico 62

ABBREVIATIONS

CCT: Conditional Cash Transfer

CEQ: Commitment to Equity

CIA: Central Intelligence Agency

CM: Conventional Model

GDP: Gross Domestic Product

GEM: General Equilibrium Model

HBS: Household Budget Survey

INEGI: Instituto Nacional de Estadística y Geografía (Mexican National Institute of Statistics and Geography)

MIA: Minimum Income Allowance

OECD: Organization for Economic Cooperation and Development

SCT: Special Consumption Tax

SSC: Social Security Contribution

SSI: Social Security Institution

SST: Social Security Transfer

TURKSTAT: Turkish Statistical Institute

UBI: Universal Basic Income

US: United States

VAT: Value-added Tax

WB: World Bank

CHAPTER 1

INTRODUCTION

The role of the state has always been a controversial issue for economists and other social scientists for centuries. What tasks, functions or responsibilities must be carried out by the state and which of them should be left to the individuals? Classical liberals have argued that the role of the state should be limited to correcting market failures and providing basic public goods, including law and order, national defense, and basic physical infrastructure. This kind of state is called "minimal state". On the other hand, "developmentalists" suggest that well-designed and active state institutions are necessary for development. This "interventionist state" implements interventionist policies to promote economic progress. Social democrats also advocate for state interventions. In contrast to "developmentalists", social democrats suggest state intervention not in terms of economic progress but they argue that state should intervene with the purpose of bringing a wider social restructuring in line with principles such as fairness, equity, equality, and social justice. Two basic features of the "social democratic" states are Keynesianism and welfare state (Heywood, 2013). These two features correspond to two purposes that provide legitimacy for the state intervention: efficiency and equity (Wodon & Moreno-Dodson, 2007).

Efficiency concerns for public expenditures come into play when some services may not be provided sufficiently by the market. Additionally, state intervenes through making adjustments on public spending and taxation in order to regulate the demand for promoting economic growth and employment (even full

employment). On the other hand, equity concerns address inequalities in the distribution of income with a view to improving the social well-being of the society (Demery, 2000, 2003). Even if markets function efficiently, by their nature they would not ensure that economic and social benefits are distributed in a fair or just manner. Since the market does not take issues such as poverty and inequality into consideration, and such complex and deep-rooted issues cannot be left solely to the market. Consequently, the state aims to create positive impacts towards more equality and fairness by implementing progressive tax policies and adjusting composition and direction of social expenditures in favor lower income groups (Martinez-Vazquez, 2008). Thus, the function of the state goes beyond the provision of basic public goods and it intervenes and plays a crucial role in terms of correcting income distribution and reducing poverty.

This thesis pays attention to equity concerns. It examines and compares impacts of overall Turkish and Mexican fiscal system on poverty and income inequality. In recent years, most of the social spending studies have focused on conditional cash transfers (CCTs) that are given with some specific incentives to households who receive them. These studies have usually ignored the impact of the other significant transfers like pensions (Di John, 2011). However, unless the incidence of the overall taxes are pro-poor, or transfers benefit lower income groups in a significant manner, the overall impact of CCTs on income distribution will be moderate (Santiso & Zoido, 2008). On the other hand, the tax burden levied on households is not only justified by CCTs but also other transfers, which are provided by the government through these taxes. Although there are differences in the size and composition of the public expenditures in different countries, other transfers have a higher share in most countries. In other words, although CCTs help people living in

extreme poverty, they do not have a significant overall effect. When the other transfers are not accounted in the analysis of income distribution and poverty alleviation, the important part of social transfer system will be ignored. Thus, examination of all transfers together significantly contributes to get a more complete picture of poverty and income distribution (Atkinson, Cantillon, Marlier, & Nolan, 2002; Garfinkel, Rainwater, & Smeeding, 2006; Aaberge, Langørgen, & Lindgren, 2017).[1]

Note that, not only transfers by the governments but also the distribution of taxes have important equity implications. Potentially, taxes are very substantial tools in terms of combatting poverty and correcting the distribution of income. Their level of effectiveness and efficiency depend on how the fiscal system is designed. It is important to analyze these two significant parts of the fiscal system together, which in fact form the two sides of the same coin. Transfers might not be sufficient by themselves in terms of income redistribution if the taxation system is not well designed and taxation may not be enough by itself if transfers benefit the rich disproportionately (Di John, 2011).

In general, the distributive aspect of a fiscal system does not only consist of taxes and transfers, but available data for most countries are limited to those two important dimensions. This thesis outlines an incidence analysis approach to assess how taxes and transfers influence distributions across different income groups and whether the poor benefit from distribution provided through the combined effect of taxes and expenditures in Turkey and Mexico. Specifically, what is called the

[1] For studies that have included all public transfers in evaluation of the income distribution and poverty reduction see O'Higgins and Ruggles (1981), Gemmell (1985), Smeeding (1986), Evandrou, Falkingham, Hills, and Grand (1993), Ruggeri, Van Wart, and Howard (1994), Slesnick (1996), Antoninis and Tsakloglou (2001), Aaberge and Langørgen (2006), Callan, Smeeding, and Tsakloglou (2008), Paulus, Sutherland, and Tsakloglou (2010), Aaberge, Bhuller, Langørgen, and Lindgren (2010), Aaberge, Langørgen, and Lindgren (2010), Vaalavuo (2011), Tsakloglou and Koutsampelas (2012), and Verbist, Förster, and Vaalavuo (2012).

"accounting" or the "conventional" method, based on micro data derived from Household Budget Surveys (HBS) are used in this thesis. For both Turkey and Mexico data used come from HBS conducted in 2014.[2] A review of the literature will go over how this methodology is used in previous studies and how it has evolved over time. A separate section will explain how this methodology is used in this study.

Policy makers want to know how different kinds of taxes place a burden on different income groups and how public transfers distribute benefits across people. In other words, for choosing the most effective fiscal policies, they need information on which income groups are more likely to pay which taxes and are more likely to benefit from which transfers. As a powerful technique to demonstrate effectiveness of taxes and transfers in terms of distribution and poverty, incidence analysis provides crucial information to policymakers. On the other hand, since incidence analysis does not reveal the whole effect of taxes and transfers, drawing valid inferences from the results and producing new and useful ways for achieving more equal income distribution and less poverty require to be very careful when conducting incidence analysis and interpreting the results. The "conventional" method does not take into account the behavioral effects of alternative policies. Such an evaluation would require more complex methods[3], which are beyond the scope of this thesis.

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[2] For further details about the structure of the Turkish HBS see, http://www.tuik.gov.tr/MicroVeri/HBA2014/english/data-sets/structure-of-data-sets/index.html [Accessed, 30.05.2018].
For further details about the Mexican HBS (in Spanish; English version was not published) see; http://internet.contenidos.inegi.org.mx/contenidos/Productos/prod_serv/contenidos/espanol/bvinegi/productos/nueva_estruc/702825070366.pdf [Accessed, 30.05.2018].

[3] First, experimental or quasi-experimental ex-post evaluation methodologies which are obviously impracticable for our state intervention analysis like the public education and health systems which are large-scale, wide-coverage and long-established interventions. Second, use of ex-ante microsimulation methodologies which are beyond the scope of the present study (Scott, 2014).

The rest of the thesis is structured as follows. Chapter 2 starts with an overview of different approaches to incidence analysis and reviews seminal studies in the literature. It continues with a selective overview of more recent studies and gives special coverage to studies on Mexico and Turkey. Chapter 3 is a methodology section in which selection of cases, data resources, measurement methods, assumptions used in the analysis, along with their limitations, are explained. The income concepts and different cases in terms of pensions and social security contributions that are used in sensitivity analysis are also defined in this chapter. Chapter 4 presents the general overview of the current tax and expenditure systems of Turkey and Mexico before embarking on incidence analyses. It discusses and compares macro-economic indicators about several fiscal tools (i.e. direct and indirect taxes, minimum income allowances, social security contributions, social security transfers and other transfers) in both countries. Lastly, it evaluates and compares macro data on poverty and inequality in these countries. Chapter 5, which presents the incidence analyses for both countries, is the main part of this thesis. In this chapter, each country is analyzed separately in terms of how aforementioned fiscal tools are distributed across deciles constructed on the basis of disposable income. It is also estimated how those tools influence poverty and income distribution by comparing one relative poverty rate and three absolute poverty rates, as well as Gini coefficients for nine different income concepts and four different sensitivity cases. Chapter 6 concludes the thesis with a summary of results, provides a comparative assessment of them for Turkey and Mexico, and offers some policy recommendations.

CHAPTER 2

LITERATURE REVIEW

Studies that deal specifically with the distribution of taxes and public transfers have been carried out after 1950s in parallel with emerging of the welfare states. From 1950s to 1990s there were significant developments in the theoretical basis of how to deal with distributional character of the fiscal system. After 1990s, studies have basically focused on methodological aspects which have resulted in new methodologies, and existent methodologies have also been improved. During this period, data availability has also increased to a considerable extent. This chapter provides a selective overview of a vast number of incidence studies in order to provide the general framework for the methods that are used throughout this study. First section discusses the theoretical basis and basic approaches to incidence analysis, and a second section overviews more recent studies. The third section of the chapter reviews the incidence studies on Turkey and Mexico, and a fourth section presents an overview of incidence studies on other countries.

2.1 Development of incidence analysis

2.1.1 Theoretical basis and basic approaches to incidence analysis

There are two basic models of incidence analysis in the literature: the "Conventional model (CM)" and the "general equilibrium model (GEM)". Leading works that use CM are Musgrave, Carroll, Cook, and Frane (1951), Musgrave (1964), Musgrave, Case, and Leonard (1974), Pechman and Okner (1974), Pechman (1985), Browning

(1978, 1985), Browning and Johnson (1984), Gillespie (1980).[4] For exposing the final incidence of taxes, these studies basically use presumptive reasoning based on economic theory. Tax burdens are allocated to households based on a range of assumptions about who bears the final burden of taxes. Tax burden is analyzed with regards to income level of households that is ranked by deciles or quintiles. Thanks to the increasing data availability and developments in computational methods, CM studies have significantly benefited from microsimulation techniques in recent years. These techniques opened a road for computing tax liabilities by using data that includes thousands of actual tax returns.

There are some prominent approaches within CM. In the first approach, the incidence for each tax and transfer is calculated separately for different income groups by making some tax or transfer shifting assumptions. Income groups have been created on the basis of deciles or quintiles and based on individual or household income. Different taxes and transfers are also added up in order to estimate the incidence of the overall taxes and transfers on different income groups (Martinez-Vazquez, 2008). The required information about the sources and the amount of incomes and transfers are generated from HBS in general. On the other hand, data extracted from tax administration authorities or databases of international organizations are also used (Lustig, 2016).

The second approach, is the "representative (or typical) household approach" in which incidence analysis is based on computing taxes for relatively small number of artificial households. It is one of the oldest methods in the CM approach. Composition, income sources and expenditure patterns of artificial household are assumed to represent the rest of the population. Taxes and transfers are calculated

[4] The CM approach is called as the Pechman and Musgrave (PM) approach by Devarajan, Fullerton and Musgrave (1980) in recognition of the leading roles of these two economists in its theoretical development and implementation.

with respect to the laws and on the basis of the assumed income source and consumption patterns. Hence, the results do not present an economic but statutory incidence (also called the legal or the nominal incidence). The geographic location (Shoup, 1959; Wasylenko, 1986) or the wealth (Wallich & Adler, 1951; Adler, Schlesinger, & Olson, 1952) of households are also taken into consideration in some studies.[5]

There are also two other CM approaches that are explained in detail by Bird and De Wulf (1973). In the first one, income distribution is classified and incidence is estimated with respect to factor shares in income (e.g. labor, capital etc.).[6] In the second one, incidence is estimated via effective (either average or marginal) tax rates by main economic sector (i.e. agriculture, industry, services) or at a much more disaggregated level.[7]

GEM is a second prominent method in which tax incidence is analyzed within the scope of a simple general equilibrium model. Typically such a model involves a two-good or two-sector economy along with two factors of production, typically capital and labor. Additionally, producers are assumed to maximize their profits whereas consumers to maximize their utility (Martinez-Vazquez, 2008). This method was pioneered by Harberger (1962). The other prominent studies of this kind are Mieszkowski (1969), Musgrave and Musgrave (1973), McLure Jr. (1975), Fullerton, Shoven, and Whalley (1983), Fullerton, King, Shoven and Whalley (1981), Boadway and Wildasin (1984) Ballard, Fullerton, Shoven, and Whalley (1985), Bovenberg (1987) and Sarte (1997).

Harberger (1962) ,the seminal study of this kind, assumes that the economy (production sectors as well as consumers) fully adjusts through price changes in

[5] For further details see Martinez-Vazquez (2008).
[6] For instance, see Kaldor (1964), and Sahota, (1971).
[7] For instance, see OECD (2000).

response to new taxes (absolute tax incidence) or changes in the tax structure (differential/marginal tax incidence). In both cases, the basic assumptions are that government expenditures do not change and additional revenues collected by government may be refunded to taxpayers in a lump-sum fashion (Harberger, 1962). Musgrave and Musgrave (1973) go beyond Herberger's analysis made only within the frame of taxes. They introduced a concept of "budget" incidence in which the combined effects of tax and expenditure incidence, including public transfers, are taken into consideration simultaneously (Musgrave & Musgrave, 1973). Boadway and Wildasin (1984) discuss that incidence is not exogenous but depends on several economic parameters, such as capital-labor ratios in the different sectors and the elasticity of substitution in the combination of inputs used in the production functions. (Boadway & Wildasin, 1984).

2.1.2 Recent approaches to incidence analysis

Current developments in computation techniques have increased studies' ability to capture the general equilibrium responses to taxes and transfers in more detail. Accordingly, the information that could be obtained from studies using GEM has been significantly enlarged. A variety of different parameters (e.g. demand patterns, endowments in resources, capital-labor ratios in different economic sectors), which play significant role in the final incidence of taxes and transfers are estimated via these techniques. They also allow for calculating equilibrium prices as a response to changes in taxes and transfers not only for two but a great number of goods or economic sectors (Lofgren, Robinson, & El-Said, 2003; Martinez-Vazquez, 2008).

Recent incidence studies have mostly dealt with middle- and low-income countries. These countries have been examined either on their own or on a

comparative basis. Different methods are used and different parts of the fiscal system (i.e. different taxes, transfers or expenditures) are examined. In addition to the studies analyzing incidence for the whole society, others examined the impacts of fiscal policies on sub-groups defined on the basis of gender (Grown & Valodia, 2010; Browne, 2011; Figari, Immervoll, Levy & Sutherland, 2011; Mogues, Petracco, & Randriamamonjy, 2011; Casale, 2012; Austen, Costa, Sharp, & Elson, 2013; Mogues, 2013), ethnicity (Casale, 2012; Bucheli, Rossi, & Amábile, 2018; Cabrera, Lustig, & Moran, 2015; Lustig, 2015; Pereira, 2016) , and rural vs urban location (Mogues et al., 2011; Casale, 2012; Scott, 2013; Austen et al., 2013; Mogues, 2013; Cabrera et al., 2015).

2.2 Incidence studies on Turkey and Mexico

Zengiobuz, Özertan, Sağlam, and Gökşen (2006) study who pays the indirect taxes in Turkey and how Turkish citizens fund public through indirect taxation. They examine the distribution of consumption taxes across income and consumption groups, (for quintiles of income), product groups and regions. There is also a qualitative section of the study in which the knowledge, perception, attitudes and behaviors of citizens about the Turkish tax system is investigated through focus group interviews (Zenginobuz et al., 2006). In 2010, this study was expanded and updated. In the new study not only consumption taxes but also income tax is examined in terms of their distributional influence. Incidence of the two basic consumption taxes in the Turkish tax system, value-added tax (VAT) and special consumption tax (SCT), are analyzed both separately and together. Besides, the data is expanded from 2003 to 2010. Authors argue that consumption taxes, especially VAT, affect the income of the poor negatively, while SCT partly protects middle

income groups. On the other hand, due to the low rates of income tax collection, its impact on correcting income distribution have been limited (Zenginobuz, Adaman, Goksen, Savci, & Tokgoz, 2010).

Albayrak (2010) deals with the redistributive impacts of indirect tax policies in Turkey. She uses S-Gini indices to measure progressivity with different inequality aversion parameters. She calculates both statutory and effective taxes to cover the impact of indirect taxation on imported and intermediary goods. She finds that the incidence of taxes is sensitive to the chosen welfare indicator. According to her, while the indirect taxes reduce expenditure inequality, they increase income inequality. She also underlines that, effective indirect tax rates verify the significance of taxation of imported and intermediate goods, which are ignored by the standard tax incidence analysis in general (Albayrak, 2010).

In her PhD thesis, Yakut-Çakar (2010) provides a different framework for comparative discussion of poverty and inequality in Turkey. She focuses on social assistance by utilizing both quantitative and qualitative methods. Quantitative analysis is based on a HBS conducted in 2004. The author constructs a national tax-benefit microsimulation model for Turkey, called TR-MOD. This model is inspired from cross-country integrated tax-benefit microsimulation model for the EU countries, the EUROMOD[8]. She uses EUROMOD and TR-MOD together in order to compare Turkey with Southern European countries (i.e. Greece, Italy, Portugal and Spain). The microsimulation results demonstrate the peculiarities of the Turkish tax and benefit systems through the distribution of income across deciles and people who face the risk of poverty separately (Yakut-Çakar, 2010).

[8] For further details, see, https://www.euromod.ac.uk/about/what-is-euromod [Accessed, 29.05.2018]

Lindert (2017) discusses the history and the future of the progressive distribution by examining and comparing collection of fiscal distribution estimates in 53 countries including Turkey and Mexico. He maps how redistribution has evolved historically and makes projections about certain impacts on redistribution trends in the next few decades. He discusses that progressiveness have been a characteristic of all prosperous countries in the last century and turning back to the regressive distribution have been rare and have ultimately been reversed. He advocates that the rising income inequality after 1970s is not about retreatment of progressive fiscal policies. In fact, when the influence of rising subsidies for public education on the inequality of adult earning power later in lifetime is taken into consideration, i.e. a longer-run measure of fiscal incidence would reveal a history of still greater shift toward progressivity. According to the author, the key determinant of this progressive trend will not be factors such as declining sectors, immigration backlash and even inequality itself, but population aging (Lindert, 2017).

Lustig et al. (2013) examines Argentina, Bolivia, Brazil, Mexico, Peru, and Uruguay in order to evaluate how much redistribution and poverty reduction are being performed through social expenditure, subsidies, and taxes. They apply comparable fiscal incidence analysis. They conclude result that direct taxes and cash transfers reduce inequality and poverty by nontrivial amounts in Argentina, Brazil, and Uruguay, but less so in Bolivia, Mexico, and Peru. They claim that although direct taxes are progressive in these countries, their redistributive effect is small due to the fact that they have low shares over gross domestic product (GDP). On the other hand, except in Bolivia, where the cash transfer programs do not target the poor, cash transfers are notably progressive in absolute terms while in-kind education and health spending reduce inequality in all countries by considerably more than

cash transfers. Authors also indicate that negative impact of indirect taxes on reducing poverty is more than positive effect of cash transfers in Bolivia and Brazil (Lustig et. al., 2013).

Lustig (2017) examines the impacts of taxes, public transfers, government education and health spending on poverty and inequality by applying comparable fiscal incidence analysis method for 28 low and middle income countries, including Mexico. She uses 2010 data, but if it is not available for a country she uses closest previous data. She defines four different income concepts (i.e. market income, disposable income, consumable income, final income) corresponding to aforementioned fiscal interventions and compares their marginal effect on Gini coefficient and poverty. She argues that fiscal redistribution is achieved essentially by redistributive efforts (i.e. share of social spending to GDP) in all countries. In addition, the extent to which transfers are targeted at lower income groups and direct taxes are targeted at higher income groups determine the effectiveness of fiscal redistribution. She finds that fiscal system in general reduces inequality in all countries. Nevertheless, this is not the case in terms of poverty in Ethiopia, Tanzania, Ghana, Nicaragua, and Guatemala, where the extreme poverty headcount ratio is higher after taxes and transfers (excluding in-kind transfers) than before. She also states that unequal countries allocate more resources to redistributive spending and seem to redistribute more by underlining that the latter is not a robust result across specifications (Lustig, 2017).

Scott, Rosa and Aranda (2017) compute the redistributive effect of Mexican fiscal system over the period 1992-2014. In addition to HBS, authors use public tax, social security and spending data to make some adjustments for correcting income underreporting. Using such income adjustments techniques increase estimated

income inequality significantly. They discuss that the fiscal system's impact on redistribution have been modest and reflected mostly the differences in tax/transfer ratios coupled with each adjustment method. Authors analyze the influence of education and health spending, social security and direct transfers for the whole mentioned period while they examine overall fiscal system for the period between 2008 and 2014. They also calculate the impacts of major fiscal reform implemented after 2014, which they define basically as the transition from large subsidies to taxes on petrol. They apply average and marginal fiscal incidence analysis for rural/urban and indigenous/non-indigenous populations, the poorest segments of the population in Mexico. Their analysis demonstrates that there have been a continuous improvement in the redistributive effects of the fiscal system through the 1990s and 2000s. This trend is linked to the increases both in the amount and the progressivity of the social expenditures over this period. However, this improvement stagnated and was reversed after 2008, partly as a result of an interruption of the expansive and progressive trend of social transfers, but particularly of a sharp decline of net indirect subsidies (Scott et al., 2017).

2.3 Incidence studies on other countries

Higgins, Lustig, Ruble, and Smeeding (2013) conducts broad fiscal incidence analyses for Brazil and the US, including direct cash and food transfers, targeted housing and heating subsidies, public expenditure on education and health, and personal income, corporate income, payroll, property, and consumption taxes. Despite the fact that primary spending in both countries is close to 40 percent of their respective GDPs, the US achieves higher redistribution through direct taxes and transfers. Authors explain this to be the result of underutilization of the personal

income tax in Brazil and the fact that Brazil's highly progressive cash and food transfer programs have relatively small share, while less progressive transfer programs a have high share. On the other hand, when health and non-tertiary education spending are added to income by using the government cost approach, two countries achieve similar levels of redistribution (Higgins et al., 2013).

Younger (2016) simulates hypothetical policy changes and uses them to evaluate three different policy reforms in Ghana and Tanzania. These reforms are removal of energy subsidies, expansion of CCT programs and shifts in the balance between direct and indirect taxation. He carries out four, five and three simulations respectively for energy subsidies, CCT programs and tax balance. The results of Younger's simulations are as follows: Both in Ghana and Tanzania energy subsidies are significant and popular; however, they are regressive despite the use of lifeline tariffs for electricity consumption. From that point forth, removal of energy subsidies would reduce inequality. On the other hand, this situation increases poverty by a nontrivial amount because poor people receive some benefit from these subsidies. Contemporaneous expansion of cash transfers could compensate the increase in poverty at considerably lower fiscal cost than that of the energy subsidies. Despite the fact that direct taxes are more progressive than indirect taxes in both countries, shifting from direct to indirect taxation has little effect on both inequality and poverty (Younger, 2016).

Harris et al. (2018) examine and compare preferential VAT rates in Ethiopia, Ghana, Senegal and Zambia. For Senegal and Zambia they use the results from fiscal incidence analyses conducted by the Commitment to Equity (CEQ) Institute and the World Bank (WB). They then create two microsimulation models for Ethiopia and Ghana (ETHTAX and GHATAX, respectively), which are compatible with methods

used in the study of the CEQ Institute and the WB. By using these two microsimulation models and pre-conducted analysis for Senegal and Zambia, the authors calculate the impact of differential VAT rates on individual revenues, poverty, inequality and consumption distribution. They then go on to test for each country the following: if government revenues arising from broadening the VAT base are used to fund universal basic income (UBI) instead of existing cash transfer schemes, how would the poverty rate change? They argue that UBI would be more effective than cash transfers even only 75% of the additional VAT revenue was disbursed as UBI payment. That is to say, despite its untargeted character, UBI would create broader net gains for poor households and reduce inequality and most other most measures of extreme poverty. Moreover, both cash transfer schemes and preferential VAT regimes decrease poverty in all countries. However, cash transfer schemes are better targeted towards poor households than VAT regimes (Harris et al., 2018).

Other than the aforementioned studies, there are many incidence studies in the literature that examine different countries. Among others are studies for Albania (Dávalos, Robayo-Abril, Shehaj, & Gjika, 2018), Argentina (Rossignolo, 2017; Lustig & Pessino, 2014), Armenia (Younger & Khachatryan, 2017), Bangladesh (Faridy & Sarker, 2011; Khan et al., 2017), Belarus (Grainger, Zhang, & Schreiber, 2015; Bornukova, Shymanovich, & Chubrik, 2017), Bolivia (Arauco, Molina, Aguilar, & Pozo, 2014), Brazil (Politi & Mattos, 2011; Pereira, 2016; Higgins & Pereira, 2013), Chile (Rothstein, 2010; Martínez-Aguilar, Fuchs, Ortiz-Juarez, & Del Carmen, 2017), Colombia (Vélez, 2012; Alvaredo & Vélez, 2013), Costa Rica (Blackman, Osakwe, & Alpizar, 2010; Sauma & Trejos, 2014), Croatia (Inchauste & Rubil, 2017), Dominican Republic (Aristy-Escuder, Cabrera, Moreno-Dodson, &

Sánchez-Martín, 2016), Ecuador (Pinto, Pinto, Pinto, & Saa, 2015), El Salvador (Beneke, Lustig, & Oliva, 2016), Ethiopia (Mogues, et al., 2011; Mogues, 2013; Hill, Inchauste, Lustig, Tsehaye, & Woldehanna, 2017), Georgia (Cancho & Bondarenko, 2017), Ghana (Akazili, Gyapong, & McIntyre, 2011; Akazili, Garshong, Aikins, Gyapong, & McIntyre; 2012; Younger, Osei-Assibey, & Oppong, 2017), Guatemala (Cabrera et al., 2015), Indonesia (Amir, Asafu-Adjaye, & Ducpham, 2013; Nugraha & Lewis, 2013; Jellema, Wai-Poi, & Afkar, 2017), Iran (Sajadifar, Khiabani, & Arakelyan, 2012; Enami, Lustig, & Taqdiri, 2016), Jordan (Wallace & Timofeev, 2016; Alam, Inchauste, & Serajuddin, 2017), Lebanon (Salti & Chaaban, 2010), Mauritius (David & Petri, 2013), Nicaragua (Vijil, 2017), Nigeria (Onwujekwe, Hanson, & Uzochukwu, 2012), Paraguay (Higgins, Lustig, Ramirez, & Swanson, 2013), Peru (Jaramillo, 2014), Poland (Goraus & Inchauste, 2016), Russian Federation (Lopez-Calva, Lustig, Matytsin, & Popova, 2017), South Africa (Casale, 2012; Ataguba & McIntyre, 2012; Inchauste, Lustig, Maboshe, Purfield, & Woolard, 2015), Sri Lanka (Arunatilake, Inchauste, & Lustig, 2017), Tanzania (Mtei et al., 2012; Younger, Myamba, & Mdadila, 2016), Timor-Leste (Austen, et al., 2013), Tunisia (Jouini, Lustig, Moummi, & Shimeles, 2016; Alm, 2014, 2016), Uganda (Jellema, Lustig, Haas, & Wolf, 2016), and Uruguay (Burdín, Esponda, & Vigorito, 2014; Martorano, 2014; Amábile et al., 2014).

CHAPTER 3

METHODOLOGY

This chapter explains the methodology used in this thesis. There is not any ideal or unique approach to the fiscal incidence analysis. All approaches have different advantages and disadvantages. This thesis applies Conventional Model, which is the most used and relatively simple approach in incidence studies. This method only estimates what is paid and what is received by individuals or households without assessing the behavioral responses that taxes and transfers may trigger on them (Lustig, 2014). It allows for making transparent assumptions and comparing implications of these alternative assumptions more easily. This chapter continues with a section in which reasons behind case selection are explained. The second section presents different incomes concepts corresponding to different parts of the fiscal system. In the third section data sources are presented. In the last section of the chapter, estimation methods and assumptions made for variables used in estimations are presented, and limitations arising from these assumptions are discussed.

3.1 Case selection

There are two main questions that should be answered about selection of cases: Why only two cases were selected? Why these cases are Turkey and Mexico?

It is not always true that increasing the number of cases (N) produces 'better-determined' research designs. When the number of cases studied increases, the number of cases variables external to the hypothesis that is being investigated

increase, and controlling for them becomes more difficult (Della Porta & Keating, 2012). Adding more countries also augments the problem of concept stretching, which is a form of measurement error that arises when established concepts and theories are inappropriately applied to new contexts (Munck, 2004). In this case, former assumptions about the meaning of some components of a concept, and about the interrelatedness between these components, are not met in these new contexts (Brady & Collier, 2010). Such issues reduce the reliability and comparability of the measures and indicators used to convert national experiences into comparable operational categories (Mair, 1996). In other words, as the number of countries increases, the comparison will become more complex and less reliable in general. Hence, only two cases, which share similar characteristics, have been selected for this thesis.

The selection of Turkey and Mexico as the two countries to be investigated was a major decision with important consequences not only for the external validity but also internal validity of comparative analysis. There are theoretical, substantial and practical reasons in selection of these countries for comparison. First of all, both countries are members of OECD. The members of this club share some common characteristics that allows more valid and reliable comparisons. Second, these countries share relatively similar political, sociological and economic characteristics. Both Turkey and Mexico have reactive characteristics in the sense that they react to the facts coming from the past rather than anticipating the future. In other words, they focus on the present rather than optimizing for the well-being of their citizens in the long-run. They do not have a history of anticipating problematic issues and threats that aren't there, and react after issues show up (Öniş & Şenses, 2007). In both of these countries, protectionist policies have been ineffective and inefficient. In

addition, in both countries the regulatory arm of the state has improved considerably in the wake of the recent severe financial crises that they have both experienced. These crises were instrumental in terms of building a broad domestic coalition in favor of stronger macroeconomic and financial regulation. Despite these important public reforms in 1990s and 2000s, there have been important differences in both countries between rules on paper and their actual implementation (Özel, 2013). These countries have also been labelled as late-democratized, and clientelism have been another prominent characteristic of both of them. In these countries, family structures are also similar and family-oriented policies are in the foreground. In addition, Turkey and Mexico have the largest informal sectors (as a percentage of GDP) across OECD members (Elgin & Sezgin, 2017). Two countries also have low labor force participation (Organisation For Economic Cooperation And Development [OECD], n.d.)[9] and labor productivity (OECD, n.d.)[10] levels.

Turkish and Mexican welfare states are underdeveloped and exhibit relatively low state expenditures (notably on social security). They share same cluster called as an "informal security regime" in global welfare regime analysis (Sharkh and Gough, 2010). Their tax systems are also similar. Tax systems are very complex and tax legislations change frequently. Together with frequent tax amnesties and configurations, these perpetual changes create great discomfort for the citizens who pays their tax in time. Accordingly, public trust on whether the government will produce sufficient level of services via taxes is low (International Federation of Accountants [IFAC] & Association of Chartered Certified Accountants [ACCA] 2017).[11] Hence, people have a disincentive to pay their taxes, which feeds the high

[9] For further details, see, https://stats.oecd.org//Index.aspx?QueryId=54218 [Accessed, 22.07.2018]
[10] For further details, see, https://stats.oecd.org//Index.aspx?QueryId=54369 [Accessed, 22.07.2018]
[11] For further details, see, https://www.ifac.org/system/files/publications/files/G20-Public-Trust-in-Tax.pdf [Accessed, 22.07.2018]

levels of informality. As a result, the share of tax revenue in GDP is respectively low in both countries. On the other hand, consumption taxes have a high share in total tax revenue (OECD, n.d.).[12] Last but not least, both poverty and inequality is relatively high in these countries. Over the course of many years, Gini and poverty rates in these countries have been under the OECD average to a considerable extent and they have been at the bottom of the rankings (OECD, n.d.).[13]

3.2 Income concepts used

Fiscal incidence analysis evaluates how taxes and transfers are allocated across individuals or households. In order to do this it is required to compare different kinds of 'pre and post-fiscal' incomes. The latter may include all or just a particular subset of the fiscal interventions. It is critically important to be precise when defining these income concepts. In this regard, nine different income concepts, which represent different parts of the fiscal system, are defined in the following paragraph. These definitions follow the Commitment to Equity Handbook, which is a seminal guide for different kinds of methods used for analyzing fiscal incidence (Lustig, 2016). On the other hand, four different income concepts that are not used in the Commitment to Equity Handbook, namely "Market Income After Direct Taxes Before Minimum Income Allowance (MIA)", "Market Income After Net Direct Taxes", "Market Income After Social Security Contributions, and "Market Income After Taxes", are defined and used in this thesis. These four incomes have been useful to examine effects of direct taxes, minimum income allowances, and SSC separately as well as the overall impact of whole taxes. The definitions for nine income concepts borrowed from the Commitment to Equity Handbook are as follows:

[12] For details see, https://stats.oecd.org//Index.aspx?QueryId=21699 [Accessed, 22.07.2018]
[13] For details see, http://www.oecd.org/social/income-distribution-database.htm [Accessed, 22.07.2018]

i. Market income: Market income includes factor incomes such as wages and salaries earned from both the formal and informal sectors (also known as earned income) as well as income from capital (rents, profits, dividends, interest, and so on)[14], private transfers (remittances and other private transfers comes from other individuals/households such as alimony or private institutions), imputed rent for owner occupied housing (also known as income from owner occupied housing), and the value of own production.

ii. Gross income: Constructed by adding "direct cash[15] and near-cash transfers (e.g. food, fuel etc.)" to market income. It is assumed that relevant households receive whole benefits from these transfers and any case of spillover to other households is ignored.

iii. Net market income: Constructed by subtracting "net direct taxes (i.e. direct taxes paid actually after minimum income allowance are added)" and SSC from market income.[16]

iv. Market income after taxes and SSC: Constructed by subtracting all taxes (i.e. direct and indirect taxes) and SSC from market income.

v. Market income after income tax before MIA: Constructed by subtracting "direct taxes before MIA" from market income.

vi. Market income after net income tax: Constructed by subtracting "net direct taxes" from market income.

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[14] In Turkish HBS there is only data for capital gains that are earned from interest. Therefore, the other capital gains could not be covered in the Market Income.

[15] Whether pensions are included in direct cash or treated as a part of market income have been controversial issue. This thesis takes these two different assumptions about pensions into consideration and conducts sensitivity analysis. These assumptions are explained in detail in Section 3.4.

[16] For wage earners some studies only include part of SSC paid by employees. However, it might also be assumed that SSCs paid by employers are shifted to workers in the form of lower income. In this case market and gross income would include SSC payments made by the employers. This is one other sensitivity analysis carried out in this thesis.

vii. Market income after SSC: Constructed by subtracting only "SSC" from market income.

viii. Disposable income: Constructed by adding "direct transfers" to net market income or subtracting "direct taxes" and "SSC" from gross income.

ix. Consumable income: Constructed by subtracting indirect taxes from disposable income.

Direct transfers in individual level and disposable income in both individual and household level are directly extracted from HBS. Other incomes, which are not presented via HBS are calculated by grossing up and subtracting estimated taxes and SSC and given transfers.

3.3 Data sources

The macro indicators analyzed and cited throughout the paper are extracted from the OECD, the WB and the CIA Factbook databases. Micro data, which is main source of fiscal incidence estimations, are obtained from HBSs in 2014, published by Turkish Statistical Institute (TURKSTAT) and Mexican National Institute of Statistics and Geography (INEGI). Turkish HBS includes three data sets, while Mexican HBS includes thirteen. Mexican HBS are conducted biannually but it includes more variables than Turkish HBS.

3.4 Estimations, assumptions and limitations

As mentioned in the previous section, HBSs present different types of revenues and transfers at the individual level, while the consumption data is at the household level. In order to make adjustments between these variables, Social Security Transfer (SST) and other social transfers are aggregated to the household level first. Then

direct taxes and SSC are calculated from revenue statistics for each individual and aggregated to the household level. Lastly, indirect taxes are estimated for each household. Then these variables involving disposable income are used for constructing remaining income concepts for each household. After all incomes are estimated, households are ranked according to deciles for each income concept. Incidences of direct and indirect taxes, SSC, SST and other social transfers on disposable income are estimated for each decile. Accordingly, Gini coefficients[17], relative poverty[18] and absolute poverty[19] indices are estimated and compared for each income concept.

In the first stage, SST and other social transfers are calculated. Before the calculations two different cases are assumed for both Turkey and Mexico.[20] In the first case, contributory social transfers (i.e. retirement pension, widows and orphans pension and unemployment payment) are regarded as pure government transfers and all SSCs are treated as direct tax. In the second case, contributory social transfers are taken purely as a component of market income and they are not included in transfers. Accordingly, the SSC paid for pensions and unemployment payment is thought as forced saving and are not included in calculations, while the remaining part of SSC (i.e. payments made for health and maternity) is treated as direct tax. In this case,

[17] Gini coefficient is the most prevalent index in measuring the income inequality. It is calculated by dividing the area between 45° diagonal line and Lorenz curve, which maps the cumulative distribution of an income against the cumulative distribution of the population ranked using the income level, to the whole area under the 45° diagonal line (i.e. 0.5). The Gini coefficient vary between 0 and 1. If it is 0 it means perfect equality, where the income of the all individuals are the same. On the other hand, the Gini coefficient of "1" shows perfect inequality case in which all the income goes to just one individual.

[18] Relative poverty is a percentage share of the households with income less than some fixed proportion of the median income in overall population. In this thesis 60% of median income is used as a relative poverty line.

[19] Absolute poverty is a percentage share of the households with daily income less than some fixed amount. In this thesis 1.90 $ (ultra-poverty), 3.20 $ (extreme poverty) and 5.50 $ (moderate poverty) per day used as absolute poverty lines. These are the international absolute poverty lines used by the WB, but their labels are given by the author. For further detail, see, http://blogs.worldbank.org/developmenttalk/2017-global-poverty-update-world-bank

[20] This method of making different simulations about a certain fiscal policy is called as sensitivity analysis (Lustig, 2016).

people are assumed to pay their SSC for health and maternity but does not get any cash return against this payment. In the real case, however, they benefit from the health services in remuneration. Unfortunately, these thesis could not take such in-kind transfers into consideration due to insufficient data. In the light of these assumptions the amount of social security and other transfers are calculated for each case.

After transfers, income taxes and SSC are estimated for each individual. In order to decide which wage earner is employed in a formal sector, it is paid regard to his or her status of social security and income level. In Turkish HBS there is only information about individuals' situation and the reason for affiliation to social security does not exist. Hence, if an individual is registered to Social Security Institution (SSI) and earns equal to or more than the minimum income he or she is deemed as working in the formal sector. That is to say that if someone, who is insured by SSI, earns lower than minimum income, its assumed that his or her security is arising from someone else in the family. In fact, this assumption neglects two types of wage earners. First, some individuals might be earning lower than minimum income although they are employed in the formal sector due to part-time working. Second, some individuals earning more than minimum income might be working in informal sector. In this case, their registration to the SSI might be arising from their relatives or due to the fact that they are pensioners. The former situation creates relatively more income tax and SSC incidence on lower income groups in reality and the incidence of income tax and SSC on lower income groups might be higher than calculated. On the other hand, the latter situation creates relatively less incidence on different income groups depending on how this kind of individuals distributed across deciles.

In addition to these assumptions, all employees are treated as workers in private sectors. However, wage structure of state employees, who constitute 12.86 percent of the workers in 2013 in Turkey (OECD, n.d.)[21], is different from that of the private sector employees. State employees earn some compensations and additional index payments that depend on the length of their service, seniority and positions. These revenues are not included in taxable income and in the real case, civil servants, who are in middle income groups in general, pay less for income tax and SSC than calculated. As a result, incidence of income taxes and SSC over middle income groups are overestimated. In overall, whether the real incidence of income taxes and SSCs are lower or higher than calculated depends on the distribution, size and revenue shares of above-mentioned types of individuals.

In contrast to Turkey, data on reason for affiliation to the social security is given in Mexican HBSs. Consequently, in Mexican case, an individual is assumed to be employed in formal sector, if his or her affiliation to the social security originates from employment. In other words, wage earners who work in informal sector but registered to social security due to their relatives or because they are pensioners are not included in estimations. On the other hand, as in Turkish case, the use of minimum income as the threshold and treating all workers as employed in private sector were maintained for Mexico as well.[22] Hence, differences between the estimated and the real incidences arising from these assumptions are also valid for Mexican case.

[21] For further detail, see, https://stats.oecd.org/Index.aspx?QueryId=66856 [Accessed, 04.08.2018]
[22] Employment in public sector as a percentage of total employment is 11.78 in Mexico according to 2013 OECD data. For further detail, see, https://stats.oecd.org/Index.aspx?QueryId=66856 [Accessed, 04.08.2018]

For estimating SSCs for wage earners two different cases are considered. In the first case, only SSC which is paid by employee (i.e. employee contribution) is calculated and SSC paid by employer (i.e. employer contribution) is not taken into consideration. In the second case, it is assumed that employer contribution is actually shifted to workers in the form of lower income. Hence, SSC payments made by the employers[23] also calculated and added to market and gross income. This is the second sensitivity analysis carried out in this thesis.

In terms of calculation of income taxes and SSC the actual wage is accepted as official wage because of the fact that both in Turkish and Mexican HBSs there are no individual or household data that demonstrate official income. In fact, the official income (i.e. the income which taxes and SSC are paid with respect to) of a wage earner might be less than his or her actual income. Hence, incidence of taxes and SSC might be less in the real case for individuals who actually earns more wage than their official salary.

Minimum income and social security assumptions are also applied for self-employed individuals in Turkey and Mexico. According to Turkish legislations, income basis for SSCs varies between minimum wage income and 6.5 times of the minimum wage income, while the income basis for SSCs in Mexico varies between minimum wage income and 25 times of the minimum wage income. Due to the fact that the lower limit of basis is minimum income in both countries, self-employed individuals earning less than minimum income are deemed to work in informal sector, even when they are registered to the social security institution, as in the case of employees. Although in Turkey, self-employed people, who pay their SSC regularly, have right to contribute on basis of 5 point reduced rate (29.5%),

[23] In Turkey, employers, who pay SSC regularly, are granted 5 point discount (i.e. from 22.5% to 17.5%). However, estimations in this thesis are made in accordance with normal rate due to the disincentive to regular pay arising from frequent amnesties.

estimations in this thesis are made with respect to normal rate (34.5%). In fact, Turkish government frequently grants tax and social security amnesties. As a result, self-employed people have disincentive to pay their SSCs when due. In the Mexican case, there are two payment scheme for self-employed. The first scheme is based on family structure of the households while the second is a flat rate for every individual. In this study, the second scheme is used because data available does not allow calculation of the first one.

Both in Turkey and Mexico, agriculture income may be taxed on a lump-sum or the actual basis. However, it is not possible to understand which individual is taxed in which way from the existing data in HBSs. Therefore, it is assumed that all individuals' agriculture income are taxed in the normal way. In addition, assumptions that are made for calculating income taxes and SSCs of self-employed people are also applied for agriculture income earners.

If an individual earns at least two different types of income that are applicable to SSC payments, all SSC calculations are added to see whether the total estimated amount exceeds the upper limit of SSC. If it exceeds the upper limit, it adjusted to the legal maximum level.

After income taxes and SSC, indirect taxes are calculated. In Turkey, there are increasing rates in special consumption tax for alcoholic beverages and new automobiles. Thus, for alcoholic beverages, effective value of tax rate for variety of sub-products is calculated. On the other hand, for new automobiles, a macro data on the sales share for each type of automobile[24] is found. Then consumption data is ranked increasingly and the shares calculated using the macro data that is distributed among consumption rates.

[24] For detail see;
http://www.odd.org.tr/folders/2837/categorial1docs/1051/BASINBULTENI7OCAK2015.pdf
[Accessed, 12.04.2018]

Lastly, nine income concepts are calculated for each sensitivity case. Then, burden of direct and indirect taxes, SSC, SST and other transfers on the disposable income are estimated for each decile. Additionally, Gini coefficients and poverty rates are computed for all income concepts in each case. When estimating different incomes, a negligible number of cases (less than 1 percent) resulted in negative incomes. However, any negative income in the data would complicate the interpretation of the results and estimation of Lorenz curve and Gini coefficient. Hence, it is adopted the following adjustments: If the particular income in individual level has a negative value it is left as negative. However, if total income ends up being negative, when all individual incomes are aggregated at the household level, then that income is converted to zero. To clarify, suppose a household with two individuals. First individual's income is 500 Turkish Lira (TL), while the second individual's income is -600 TL. The second individual's income is not adjusted to 0 TL which would result in a household income of 500 TL + 0 TL = 500 TL. Rather it is accepted that second individual's income is -600 TL, and then it is added to the income of first individual. Consequently, the total income of the household is taken as -100 TL and it is converted to 0 TL.

CHAPTER 4

OVERVIEW OF THE TURKISH AND THE MEXICAN FISCAL SYSTEMS

This chapter is a general assessment and comparison of the Turkish and the Mexican fiscal systems on the basis of macro data provided by the OECD, the WB and the CIA Factbook. The first section outlines the structure of taxes and SSC, while the second section evaluates SST and other transfers. The subsequent sections focus poverty and income inequality.

4.1 Taxes and SSC

According to Table 1, in Turkey the shares of total tax revenue over GDP was 25.5 percent in 2016, while the OECD average was 34.3 percent in the same year. The 8.8 percent gap between the Turkey's ratio and the OECD average is substantial, but the gap has decreased significantly since 1990 when it stood at 17.4 percent. The share of total tax in GDP in Turkey has increased by 11 percentage points from 1990 to 2016, most of the increase occurring between 1995 and 2000 (an increase of 7.2 percentage points). The main reason behind this major change was the new legislation passed and measures taken after the1994 economic crisis. On the other hand, this ratio have increased only by 1.9 percentage points in the 2000s.

The change has been more striking for Mexico. For decades, Mexico was the worst performer among the OECD countries in terms of total tax revenue/GDP ratio. In 1990, Mexico's total tax revenue/GDP ratio stood at 12.4 percent, 19.5 percentage points below the OECD average. From 1990 to 2014 this ratio have increased by just 1.8 percentage points, while the OECD average increased by 2 percentage points,

Table 1. Tax Revenue as Percent of GDP in OECD Countries For Selected Years, 1990 – 2016

Country	1990	1995	2000	2005	2010	2011	2012	2013	2014	2015	2016
Australia	28.0	28.2	30.4	29.9	25.4	26.1	27.1	27.3	27.6	28.2	..
Austria	39.4	41.4	42.4	41.2	41.1	41.3	42.0	42.8	43.1	43.7	42.7
Belgium	41.2	42.6	43.5	43.2	42.6	43.1	44.2	45.2	45.0	44.8	44.2
Canada	35.2	34.8	34.8	32.2	30.6	30.5	31.0	30.9	31.2	32.0	31.7
Chile	16.9	18.3	18.8	20.7	19.6	21.1	21.3	19.9	19.6	20.5	20.4
Czech Republic	..	34.7	32.4	34.5	32.5	33.3	33.7	34.1	33.1	33.3	34.0
Denmark	44.4	46.5	46.9	48.0	44.8	44.8	45.5	45.9	48.6	45.9	45.9
Estonia	..	36.0	31.1	30.0	33.3	31.5	31.7	31.7	32.8	33.9	34.7
Finland	42.9	44.5	45.8	42.1	40.8	42.0	42.7	43.6	43.8	43.9	44.1
France	41.0	41.9	43.1	42.8	42.0	43.2	44.3	45.2	45.3	45.2	45.3
Germany	34.8	36.2	36.2	33.9	35.0	35.7	36.4	36.8	36.8	37.1	37.6
Greece	25.2	27.8	33.4	31.2	32.0	33.6	35.5	35.5	35.9	36.4	38.6
Hungary	..	40.9	38.6	36.7	37.5	36.4	38.5	38.1	38.2	39.0	39.4
Iceland	30.2	30.5	36.2	39.7	33.3	34.4	35.2	35.8	38.6	36.7	36.4
Ireland	32.4	31.7	30.8	29.4	27.0	27.3	27.5	28.2	28.5	23.1	23.0
Israel	..	35.4	34.9	33.7	30.7	30.9	30.0	30.7	31.1	31.3	31.2
Italy	36.4	38.6	40.6	39.1	41.9	41.9	43.9	44.1	43.5	43.3	42.9
Japan	28.2	25.8	25.8	26.2	26.5	27.5	28.2	28.9	30.3	30.7	..
Korea	18.8	19.1	21.5	22.5	23.4	24.2	24.8	24.3	24.6	25.2	26.3
Latvia	..	29.7	29.1	27.8	28.1	27.7	28.4	28.5	28.8	29.0	30.2
Luxembourg	33.5	34.9	36.9	37.8	37.4	37.0	38.4	38.2	37.4	36.8	37.1
Mexico	12.4	11.4	13.1	12.1	13.4	13.3	13.1	13.8	14.2	16.2	17.2
Netherlands	40.2	37.7	37.2	35.4	36.1	35.9	36.0	36.5	37.5	37.4	38.8
New Zealand	36.2	35.6	32.5	36.1	30.3	30.5	32.1	31.1	32.4	33.0	32.1
Norway	40.2	40.0	41.9	42.6	42.0	42.1	41.5	39.9	38.9	38.3	38.0
Poland	..	37.7	32.9	33.0	31.4	31.9	32.1	31.9	32.0	32.4	33.6
Portugal	26.5	29.3	31.1	30.8	30.4	32.3	31.8	34.1	34.3	34.6	34.4
Slovak Republic	..	39.6	33.6	31.3	28.1	28.6	28.3	30.2	31.2	32.3	32.7
Slovenia	..	38.4	36.6	38.0	36.9	36.5	36.9	36.7	36.5	36.6	37.0
Spain	31.6	31.3	33.2	35.1	31.2	31.2	32.2	33.1	33.7	33.8	33.5
Sweden	49.5	45.6	49.0	46.6	43.2	42.5	42.6	42.9	42.6	43.3	44.1
Switzerland	23.6	25.4	27.4	26.5	26.5	27.0	26.8	26.9	27.0	27.7	27.8
Turkey	14.5	16.4	23.6	23.4	24.8	25.9	24.9	25.3	24.6	25.1	25.5
United Kingdom	32.9	29.8	33.2	32.9	32.6	33.5	32.8	32.6	32.2	32.5	33.2
United States	26.0	26.5	28.2	25.9	23.5	23.9	24.1	25.7	25.9	26.2	26.0
OECD - Average	31.9	33.3	33.9	33.5	32.5	32.8	33.2	33.6	33.9	34.0	34.3

Source: Revenue Statistics 1965-2016, OECD

indicating that Mexico fell further below the average during that period. From 2014 to 2016 Mexico managed to increase its ratio by 3 percentage points, while the gap with the OECD average decreased from 19.7 percentage points to 17.1 percentage points. The 2014 tax reform was behind this drop which, in comparison to what had transpired in the previous 24 years, was rather significant.

As can be seen from Table 2, in Turkey the main source of increasing tax revenue/GDP ratio during this period has been the relatively high increase in consumption taxes and social security contributions. In 1990, consumption taxes constituted 4.1 percent of GDP, while in 2015 this ratio increased to 11.1 percent. In comparison with the OECD average, in 1990 the consumption tax/GDP ratio in Turkey was 5.9 percentage points below the OECD average of 10.0 percent, while in 2015 it exceeded the OECD average of 10.9 percent by 0.2 percentage points. Accordingly, as can be followed from Table 3, the share of consumption taxes in total tax revenues was 27.9 percent in 1990, and it increased to 44.3 percent in 2015. The corresponding OECD average rates were 32.5 percent in 1990 and 32.4 percent in 2015. This shows that Turkish tax system relies heavily on consumption taxes not because of high level of consumption taxes but low level of income tax collection. Share of income tax in GDP has only increased 0.2 percentage points during the same period, from 4.9 in 1990 to 5.1 percent in 2015. As can be seen in Table 2, this is the lowest rate in 2015 among the OECD countries.

From 1990 to 2015, the ratio of SSC to GDP have increased from 2.9 percent to 7.3 percent, whereas its share in total tax revenue have increased from 19.7 percent to 29 percent. Thus, by 2015 the ratio of SSC to GDP exceeded that of income tax revenue to GDP. The main reason for the sharp increase in SSC/GDP ratio was the decrease in the size of the informal economy and employment as well

Table 2. Tax Revenue as Percent of GDP in OECD countries, 1990 and 2015

	Taxes on income, profits and capital gains		SSC		Taxes on payroll and workforce		Taxes on property		Taxes on goods and services		Other Taxes		Total Taxes	
Country	1990	2015	1990	2015	1990	2015	1990	2015	1990	2015	1990	2015	1990	2015
Australia	16.0	16.0	0.0	0.0	1.7	1.4	2.5	3.0	7.8	7.8	0.0	0.0	28.0	28.2
Austria	10.1	13.2	12.9	14.7	2.4	3.0	1.1	0.6	12.4	11.9	0.5	0.2	39.4	43.7
Belgium	15.2	16.0	13.7	14.3	0.0	0.0	1.6	3.5	10.7	10.7	0.0	0.0	41.2	44.8
Canada	17.1	15.3	4.3	4.8	0.8	0.7	3.5	3.8	9.1	7.4	0.4	0.0	35.2	32.0
Chile	3.9	7.5	1.5	1.4	0.0	0.0	1.0	0.9	10.6	11.1	-0.2	-0.4	16.9	20.5
Czech Republic	..	7.2	..	14.4	..	0.0	..	0.5	..	11.2	..	0.0	..	33.3
Denmark	27.1	29.0	0.0	0.1	0.3	0.3	1.9	1.9	15.1	14.5	0.0	0.0	44.4	45.9
Estonia	..	7.9	..	11.3	..	0.0	..	0.3	..	14.2	..	0.0	..	33.9
Finland	16.8	15.4	11.0	12.7	0.0	0.0	1.1	1.4	14.0	14.2	0.1	0.0	42.9	43.9
France	6.6	10.6	18.1	16.8	0.8	1.6	2.6	4.0	11.6	11.0	1.3	1.1	41.0	45.2
Germany	11.3	11.6	13.0	14.0	0.0	0.0	1.2	1.1	9.3	10.3	0.0	0.0	34.8	37.1
Greece	5.0	8.2	7.6	10.7	0.2	0.0	1.2	3.1	11.2	14.3	0.0	0.0	25.2	36.4
Hungary	..	7.1	..	12.6	..	0.6	..	1.3	..	17.1	..	0.2	..	39.0
Iceland	9.0	17.2	0.9	3.6	1.1	0.3	2.5	2.0	15.5	11.9	1.2	1.7	30.2	36.7
Ireland	12.3	9.9	4.6	3.9	0.4	0.1	1.5	1.5	13.6	7.5	0.0	0.0	32.4	23.1
Israel	..	9.8	..	5.1	..	1.2	..	3.3	..	11.9	..	0.0	..	31.3
Italy	13.3	13.8	12.0	13.0	0.1	0.0	0.8	2.8	10.2	11.8	0.0	1.7	36.4	43.3
Japan	14.2	9.6	7.5	12.1	0.0	0.0	2.7	2.5	3.9	6.4	0.1	0.1	28.2	30.7
Korea	6.2	7.6	1.9	6.7	0.1	0.1	2.2	3.1	8.3	7.1	0.1	0.6	18.8	25.2
Latvia	..	7.5	..	8.3	..	0.0	..	1.0	..	12.0	..	0.0	..	29.0
Lithuania	..	5.4	..	11.6	..	0.0	..	0.3	..	11.3	..	0.0	..	28.9
Luxembourg	13.5	13.4	9.2	10.7	0.0	0.0	2.8	3.3	7.9	9.4	0.1	0.1	33.5	36.8
Mexico	4.2	6.8	2.1	2.2	0.2	0.4	0.2	0.3	5.4	6.3	0.2	0.2	12.4	16.2
Netherlands	13.0	10.4	15.0	14.1	0.0	0.0	1.5	1.4	10.6	11.1	0.1	0.1	40.2	37.4
New Zealand	21.6	18.3	0.0	0.0	0.0	0.0	2.5	2.0	12.1	12.7	0.0	0.0	36.2	33.0
Norway	14.2	15.1	10.6	10.5	0.0	0.0	1.2	1.1	14.3	11.6	0.0	0.0	40.2	38.3
Poland	..	6.5	..	12.5	..	0.2	..	1.4	..	11.7	..	0.0	..	32.4
Portugal	6.8	10.4	7.2	9.0	0.0	0.0	0.7	1.3	11.7	13.3	0.1	0.5	26.5	34.6
Slovak Republic	..	7.0	..	13.8	..	0.0	..	0.4	..	10.9	..	0.0	..	32.3
Slovenia	..	6.6	..	14.5	..	0.1	..	0.6	..	14.6	..	0.0	..	36.6
Spain	9.7	9.6	11.2	11.4	0.0	0.0	1.7	2.6	9.0	10.0	0.0	0.0	31.6	33.8
Sweden	20.6	15.5	13.5	9.7	1.2	4.6	1.7	1.0	12.4	12.2	0.1	0.0	49.5	43.3
Switzerland	11.2	12.9	5.6	6.8	0.0	0.0	1.9	1.9	4.9	6.0	0.0	0.1	23.6	27.7
Turkey	4.9	5.1	2.9	7.3	0.0	0.0	0.3	1.2	4.1	11.1	2.4	0.4	14.5	25.1
United Kingdom	12.9	11.5	5.6	6.1	0.0	0.0	2.7	4.1	10.2	10.7	1.5	0.0	32.9	32.5
United States	11.7	12.9	6.6	6.2	0.0	0.0	3.0	2.7	4.6	4.5	0.0	0.0	26.0	26.2
OECD - Average	12.2	11.5	7.3	9.0	0.3	0.4	1.8	1.9	10.0	10.9	0.3	0.2	31.9	34.0

Source: Revenue Statistics 1965-2015, OECD

as the increasing in the overall employment rate. The question that should be asked at this point is why the share of income tax in GDP has increased only marginally despite the large drop in the size of the informal economy and increasing employment rates. A complete answer to that question requires delving into political economy. Technically speaking, on the other hand, one can cite three reasons behind this development. First, in this period both individual income tax and corporate income tax rates have decreased. Second, new exemptions, immunities and deductions for both individual and corporate taxes have been introduced. Third, the minimum income allowance was introduced in 2008 in assessing income tax liabilities. With no corresponding changes in its rates and assessment methods, SSC payments have increased relatively more than income tax payments.

In contrast to Turkey, the increase in income tax collections has been the major development behind the increase in the total tax revenue/GDP ratio in Mexico. From 1990 to 2015, income tax/GDP ratio have increased from 4.2 percent to 6.8 percent, while the share of income taxes in total tax revenues increased from 34 percent to 41.7 percent in the same period. During this period there was a decrease in corporate income tax rates, but individual income tax rates have increased considerably. Thanks to decreases in the size of the informal economy and new regulations regarding tax collection, the overall income tax base have also increased. Additionally, some changes were made to eliminate or decrease major deductions and exemptions. Hence, the share of collected income tax have increased.

In the same period the ratio of consumption taxes to GDP and its share in total tax revenue have also increased but at a lower rate than those for income taxes. In 1990 consumption tax/GDP ratio was 5.4 percent, while it reached 6.3 percent in 2015 due to the elimination of several reduced rates and introduction of new taxes.

Table 3. Revenues from Different Taxes as Percent of Total Tax Revenue in OECD countries - 1990 and 2015

	Taxes on income, profits and capital gains		SSC		Taxes on payroll and workforce		Taxes on property		Taxes on goods and services		Other Taxes	
Country	1990	2015	1990	2015	1990	2015	1990	2015	1990	2015	1990	2015
Australia	57.1	56.7	0.0	0.0	6.1	5.0	9.0	10.7	27.8	27.5	0.0	0.0
Austria	25.5	30.2	32.9	33.6	6.0	6.8	2.7	1.3	31.5	27.3	1.3	0.5
Belgium	36.9	35.7	33.2	31.9	0.0	0.0	3.8	7.8	26.1	23.8	0.0	0.0
Canada	48.6	47.9	12.1	15.1	2.3	2.0	10.0	11.8	25.8	23.1	1.2	0.1
Chile	23.2	36.4	9.0	6.9	0.0	0.0	6.2	4.4	62.9	54.1	-1.3	-1.8
Czech Republic	..	21.5	..	43.0	..	0.0	..	1.4	..	33.5	..	0.0
Denmark	61.2	63.1	0.0	0.1	0.7	0.6	4.3	4.1	33.9	31.6	0.0	0.0
Estonia	..	23.4	..	33.4	..	0.0	..	0.8	..	41.8	..	0.0
Finland	39.2	35.2	25.6	28.9	0.0	0.0	2.4	3.3	32.5	32.4	0.1	0.1
France	16.1	23.5	44.1	37.1	1.9	3.5	6.3	9.0	28.4	24.3	3.2	2.5
Germany	32.4	31.2	37.5	37.6	0.0	0.0	3.4	2.9	26.7	27.8	0.0	0.0
Greece	19.9	22.5	30.2	29.4	0.7	0.0	4.6	8.5	44.5	39.4	0.0	0.0
Hungary	..	18.3	..	32.4	..	1.5	..	3.3	..	43.8	..	0.4
Iceland	29.7	46.9	3.1	9.8	3.5	0.8	8.4	5.4	51.3	32.4	3.9	4.7
Ireland	38.0	43.0	14.1	16.8	1.3	0.6	4.6	6.4	41.9	32.6	0.0	0.0
Israel	..	31.2	..	16.4	..	3.8	..	10.6	..	38.0	..	0.0
Italy	36.5	31.8	32.9	30.1	0.3	0.0	2.3	6.5	28.0	27.3	0.0	3.9
Japan	50.2	31.2	26.5	39.4	0.0	0.0	9.4	8.2	13.7	21.0	0.3	0.3
Korea	32.8	30.3	10.1	26.6	0.4	0.3	11.8	12.4	44.3	28.0	0.7	2.4
Latvia	..	25.9	..	28.7	..	0.0	..	3.4	..	41.3	..	0.0
Lithuania	..	18.6	..	40.1	..	0.0	..	1.2	..	39.2	..	0.0
Luxembourg	40.2	36.4	27.5	29.0	0.0	0.0	8.4	8.9	23.6	25.5	0.2	0.1
Mexico	34.0	41.7	16.8	13.9	1.8	2.4	1.9	2.0	44.0	38.6	1.6	1.5
Netherlands	32.3	27.7	37.4	37.8	0.0	0.0	3.7	3.8	26.4	29.6	0.2	0.2
New Zealand	59.6	55.5	0.0	0.0	0.0	0.0	6.8	6.1	33.6	38.4	0.0	0.0
Norway	35.2	39.4	26.3	27.3	0.0	0.0	2.9	2.9	35.5	30.4	0.0	0.0
Poland	..	20.1	..	38.5	..	0.7	..	4.2	..	35.9	..	0.1
Portugal	25.7	30.2	27.2	26.1	0.0	0.0	2.7	3.7	44.2	38.4	0.2	1.3
Slovak Republic	..	21.8	..	42.7	..	0.0	..	1.3	..	33.7	..	0.0
Slovenia	..	18.1	..	39.7	..	0.1	..	1.7	..	40.0	..	0.0
Spain	30.6	28.3	35.4	33.8	0.0	0.0	5.5	7.7	28.4	29.7	0.0	0.0
Sweden	41.6	35.9	27.2	22.4	2.5	10.7	3.5	2.4	25.0	28.1	0.2	0.1
Switzerland	47.4	46.5	23.5	24.6	0.0	0.0	8.1	6.7	20.8	21.8	0.2	0.4
Turkey	33.5	20.3	19.7	29.0	0.0	0.0	2.3	4.9	27.9	44.3	16.7	1.5
United Kingdom	39.3	35.3	17.0	18.7	0.0	0.0	8.2	12.6	31.0	32.9	4.5	0.0
United States	45.2	49.1	25.6	23.7	0.0	0.0	11.6	10.3	17.6	17.0	0.0	0.0
OECD - Average	37.5	34.1	22.0	25.8	1.0	1.1	5.7	5.8	32.5	32.4	1.2	0.5

Source: Revenue Statistics 1965-2015, OECD

For instance, the discounted 11 percent VAT rate applied in free trade zones (the "maquiladoras") was eliminated. Besides new excise taxes, such as special taxes on some non-alcoholic beverages and high-calorie food, were introduced and the rates for some existing excise taxes were increased. On the other hand, the relatively higher increase in income tax revenues resulted in a decrease in the share of consumption taxes in total tax revenue, from 44 percent in 1990 to 38.6 percent in 2015. As a consequence of decreasing employee and employer contribution rates, the ratio of SSC to GDP only increased 0.1 percentage points from 1990 to 2015, despite decreases in the size of the informal economy, resulting in a decrease in the share of SSC in total tax revenue from 16.8 percent to 13.9 percent during the same period.

4.2 SST and other transfers[25]

According to Table 4, in Turkey the ratio of total social expenditures to GDP has increased from 5.5 percent to 12.5 percent from 1990 to 2011, while the OECD average has increased from 16.9 percent to 20.7 percent. Although the gap between Turkey and the OECD average has decreased for this ratio, Turkey is still 8.2 point below the OECD average. In the same period, total ratio of old age and survivors payments to GDP has increased more than three times from 2.4 percent to 7.6 percent, almost reaching the OECD average of 8.3 percent. The share of pensions in total social expenditures also increased from 43.6 percent to 61 percent, suggesting that the increase in pension payments may have played a role in reducing poverty and income inequality during the same period. The ratio of health expenditures to GDP increased from 1.5 percent to 4.0 percent from 1990 to 2011, while the share of

[25] 2011 values are used for both Turkey and Mexico, as no data on social expenditures are available for Mexico.

Table 4. Social Expenditure/GDP Ratios on Different Items in OECD countries - 1990 and 2011

	Old age and Survivor's		Incapacity related		Health		Family		Active labor market programs		Unemployment		Housing		Other social policy areas		Total	
Country	1990	2011	1990	2011	1990	2011	1990	2011	1990	2011	1990	2011	1990	2011	1990	2011	1990	2011
Australia	3.7	4.7	1.7	2.5	4.3	5.9	1.5	2.6	0.2	0.3	1.1	0.5	0.2	0.4	0.4	0.3	13.1	17.2
Austria	11.5	13.4	2.6	2.3	5	6.4	2.5	2.6	0.3	0.7	0.9	0.9	0.1	0.1	0.3	0.3	23.2	26.8
Belgium	9	10.1	2.6	2.7	6.3	7.8	2.2	2.8	1.1	0.8	2.8	3.5	..	0.2	0.5	0.8	24.4	28.7
Canada	4.2	4.3	1.1	0.8	6.2	7.2	0.6	1.2	0.5	0.3	1.8	0.6	0.6	0.3	2.4	2.2	17.5	17
Chile	8	3.3	0.9	0.8	0	3.1	0.5	1.3	0.4	0.2	0	0	0	1	0	0.3	9.8	10
Czech Republic	5.6	8.6	2.2	1.9	3.6	5.9	2.3	2.2	..	0.3	..	0.7	..	0.1	0.5	0.1	14.2	19.8
Denmark	8.3	9.7	3.7	4.9	4.4	6.6	3.2	3.8	0.7	1.9	0	0	0.6	0.7	1	1.2	22	28.9
Estonia	..	6.8	..	2.2	..	4.4	..	2.2	..	0.2	..	0.3	..	0	..	0.1	..	16.3
Finland	7.9	11	4.1	3.8	5.6	5.4	3.1	3.1	0.8	1	1.1	1.6	0.2	0.5	0.4	0.7	23.3	27.1
France	10.5	13.7	2	1.7	6	8.4	2.4	2.8	0.7	0.9	1.6	1.5	0.7	0.8	0.1	0.6	24.3	30.5
Germany	9.5	10.2	1.9	2	6.1	7.7	1.8	2.1	0.9	0.8	0.8	1.1	0.2	0.6	0.1	0.1	21.4	24.7
Greece	9.5	14.8	1.2	1	3.3	6.7	0.7	1.4	0.2	0.3	0.4	1.1	0.4	0.3	0.1	0.5	15.7	25.9
Hungary	..	10.4	..	2.2	..	4.8	..	3.2	..	0.4	..	0.8	..	0.4	..	0.1	..	22.2
Iceland	3.4	2.5	1.3	2.6	5.5	5.2	2.3	3.4	0	0.1	0.3	1.4	0	1.4	0.4	0.6	13.2	17.2
Ireland	5.1	5.4	1.7	2.2	4.1	5.4	1.9	3.5	1	0.9	2.1	2.9	0.6	0.5	0.3	0.3	16.8	21
Israel	..	5.3	..	2.5	..	5	..	2	..	0.1	..	0.3	..	0	..	0.6	..	15.8
Italy	11.4	15.4	1.9	1.7	5.7	6.8	0.9	1.3	0.2	0.4	0.6	1.5	0	0	0	0.2	20.7	27.3
Japan	5	11.8	0.6	1	4.4	7.7	0.4	1.4	0.3	0.3	0.3	0.3	0	0.1	0.1	0.5	11.1	23.1
Korea	0.7	2.2	0.3	0.6	1.4	3.7	0	0.7	0	0.3	..	0.3	..	..	0.2	0.5	2.7	8.2
Latvia	..	8.2	..	1.8	..	3.5	..	1.1	..	0.3	..	0.5	..	0.1	..	0.3	..	15.9
Luxembourg	8	7.6	2.8	2.7	4.7	5.7	1.8	3.6	0.2	0.6	0.4	1.1	0	0.3	0.2	0.5	18.1	22.2
Mexico	0.5	1.8	0	0.1	1.7	2.8	0	1.1	0	0	.	.	0.6	1.1	0.3	0.5	3.2	7.4
Netherlands	6.8	6	5.9	3.1	5	7.5	1.6	1.5	1.2	1	2.4	1.4	0.3	0.4	0.8	1.2	24	22
New Zealand	7.3	4.7	2.8	2.5	5.5	7.7	2.5	3.3	0.3	0.3	1.8	0.4	0.2	0.9	0.1	0.2	20.5	19.9
Norway	7.4	7.3	4.6	3.8	3.9	5.5	2.7	3	0.9	0.6	1	0.4	0.2	0.1	0.9	0.7	21.6	21.4
Poland	5	10.6	3.3	2.3	4.3	4.4	1.6	1.3	0.1	0.4	0	0.2	0	0.1	0.1	0.2	14.6	19.4
Portugal	4.9	12.8	2.3	1.9	3.6	6.4	0.7	1.2	0.5	0.6	0.3	1.2	0	0	0	0.2	12.2	24.4
Slovak Republic	..	7.1	..	1.8	..	5.5	..	2	..	0.3	..	0.6	..	0	..	0.4	..	17.7
Slovenia	..	11.3	..	2.2	..	6.3	..	2.1	..	0.4	..	0.7	..	0	..	0.6	..	23.5
Spain	7.9	11	2.2	2.6	4.8	6.7	0.3	1.3	0.8	0.9	3.1	3.4	0.1	0.2	0.1	0.2	19.2	26.3
Sweden	8.7	9.2	5.2	4.1	5.8	6.4	4	3.5	1.6	1.2	0.8	0.4	0.6	0.4	0.5	0.7	27.2	25.8
Switzerland	5.4	6.5	1.6	2.3	3.4	6.1	1.1	1.5	0.2	0.6	0.1	0.7	0.1	0.1	0.3	0.6	12.1	18.3
Turkey	2.4	7.6	0.2	0.3	1.5	4	0.9	0.4	0	0	0.4	0.1	0	0	0.1	0.1	5.5	12.5
United Kingdom	4.8	6.6	2	2	4.2	7.3	1.8	4	0.5	0.2	0.7	0.4	1.2	1.4	0.1	0.5	15.2	22.4
United States	5.9	6.8	1	1.4	4.6	8	0.5	0.7	0.2	0.1	0.4	0.8	0.3	0.4	0.4	0.9	13.2	19.1
OECD - Average	6.7	8.3	2.3	2.1	4.4	5.9	1.6	2.1	0.4	0.5	0.9	0.9	0.3	0.4	0.4	0.5	16.9	20.7

Source: Social Expenditure Statistics 1965-2013, OECD

health expenditures in total social expenditures increased from 27 percent to 32 percent, resulting in the narrowing of the gap between Turkish ratio and the OECD average from to two-thirds to one-third. Pension payments and health expenditures together constituted 93 percent of Turkey's total social expenditures in 2011, while it was 70.6 percent in 1990. In this period the ratio of disability related social expenditures to GDP has increased from 0.2 percent to 0.3 percent, while its share in total social expenditures decreased from 3.6 percent to 2.4 percent. Due to insufficient policies and programs, the ratio of family support payments to GDP and the ratio of unemployment related expenditures to GDP, as well as their shares in total social expenditures, have decreased during this period. In Table 4, the share of social expenditures paid for active labor market programs are presented as zero percent. In fact, the policies for active labor market programs in Turkey have recently become more comprehensive. For instance, the number of unemployed people trained by the Turkish Employment Agency (İŞKUR) have increased from 30,000 in 2008 to 464,000 in 2012, while 80 percent of training positions in 2012 were job guaranteed (The World Bank, 2013). At the same time, expenditures for such programs have also increased. However, when compared with the overall social expenditures, they are still at a negligible level (hence the representation as zero percent in tables here). The same holds for the share of social expenditures on housing as well. Public spending for housing in Turkey have increased in parallel with the significant increase in the presence of private-public partnerships in construction sector (Buğra & Savaşkan, 2014). As in the case of active labor market programs, however, the share of public spending for housing policies are very low (taken as zero percent in tables here). The ratio of expenditures on other social policy items to GDP did not change, but their share in total social expenditures decreased.

For Mexico, although the ratio of total social expenditures to GDP increased from 3.2 percent in 1990 to 7.4 percent in 2011, it stood at just one-third of the OECD average. The ratio of old age and survivors expenditure's to GDP increased from 0.5 percent to 1.8 percent, which was only slightly more than one-fifth of the OECD average. On the other hand, share of old age and survivors expenditures in total social expenditures have increased from 15.6 percent to 24.3 percent. Social health expenditures constituted the major part of total social expenditures both in 1990 and 2011, and its ratio to GDP increased from 1.7 percent to 2.8 percent, while the share of social health expenditures in total social expenditures decreased from 53 percent to 38 percent. This was a consequence of the fact that the share of pensions in total social expenditures increased relatively more than for social health expenditures. On the other hand, the share of pensions and health expenditures together constituted 62.3 percent of total social expenditures in 2011 and this ratio reached 68.6 percent in 1990. The most dramatic change was observed in family support payments, which stood at zero in 1990. They increased to 1.1 percent of GDP and constituted 14.9 of total social expenditures in 2011. Ratios of expenditures on housing and other social policy areas to GDP have almost doubled during the same period, while disability payments, which stood at zero in 1990, reached 0.1 percent of GDP in 2011. Lastly, as in the case of Turkey, there were negligible amount of expenditures for active labor market programs both in 1990 and in 2011.

4.3 Poverty

Poverty rates have been relatively high both in Turkey and Mexico when compared with other OECD countries. According to Table 5, Turkey and Mexico have been the worst two countries among the OECD countries in terms of their average poverty

rates. Based on income after taxes and transfers and using 60 percent of the median income as the relative poverty line, the average poverty rate between 1990 and 2014. was 25.5 percent in Turkey and 26.5 percent in Mexico. Compared to the OECD average of 17.9 percent for the same period, this amounted to a 7.6 percentage points higher relative poverty rate in Turkey and 8.6 percentage points higher poverty rate in Mexico.

The same pattern is observed for absolute poverty lines. As in the case of relative poverty, Mexico has the highest rate among the OECD countries in terms of three absolute poverty measures that are based on different allowances for consumption per day. Turkey is third worst country, after Chile, among the OECD countries in all of the three absolute poverty measures. While in terms of relative poverty the rate for Mexico is only 1 percentage point above that of Turkey, this gap is 4.98 percentage points, 11.29 percentage points, and 20.69 percentage points for absolute poverty lines of 1.90 USD of consumption per day, 3.20 USD of consumption per day and 5.5 USD of consumption per day, respectively.

In the OECD database, data are available also for relative poverty rates (at 60 percent of median income) based on income before taxes and transfers. However, for Turkey and Mexico those data are only presented for income after taxes and before transfers, which is useful only for understanding to what extent the poverty is reduced through transfers. Table 6 reveals that Turkey and Mexico were close to each other in terms of poverty rates in 2012 and 2014, similar to the average poverty rates between 1990 and 2015. Although poverty rates after taxes and before transfers in Turkey is lower than the rates in Mexico, Mexico performs better after transfers. This implies that poverty was reduced after transfers in both countries, but this reduction was pronounced in Mexico than in Turkey. In Mexico, transfers reduced

Table 5. Average Poverty Rates between 1990-2014 Based on Different Poverty Measures

Country	Relative Poverty (60% of Median Income)	Ultra-Poverty (1.90 $ a day)	Extreme Poverty (3.20 $ a day)	Moderate Poverty (5.5 $ a day)
Australia	21.10%	0.68%	0.88%	1.22%
Austria	14.70%	0.32%	0.43%	0.69%
Belgium	17.00%	0.13%	0.23%	0.39%
Canada	18.50%	0.31%	0.44%	0.72%
Chile	25.00%	3.64%	11.05%	28.25%
Czech Republic	10.80%	0.02%	0.12%	0.67%
Denmark	12.80%	0.16%	0.23%	0.53%
Estonia	20.80%	0.91%	2.20%	6.48%
Finland	12.40%	0.00%	0.00%	0.18%
France	14.00%	0.00%	0.05%	0.17%
Germany	13.70%	0.03%	0.03%	0.26%
Greece	20.60%	0.80%	1.42%	3.18%
Hungary	14.50%	0.20%	0.45%	2.83%
Iceland	11.70%	0.07%	0.10%	0.24%
Ireland	17.50%	0.28%	0.41%	0.81%
Israel	25.40%	0.43%	0.86%	3.99%
Italy	19.30%	0.95%	1.32%	2.08%
Japan	21.50%	0.30%	0.70%	1.00%
Korea	20.50%	0.30%	0.70%	1.43%
Latvia	22.60%	1.20%	3.59%	12.21%
Luxembourg	14.50%	0.03%	0.06%	0.15%
Mexico	26.50%	6.37%	18.50%	41.98%
Netherlands	13.70%	0.04%	0.15%	0.33%
New Zealand	19.40%	N/A	N/A	N/A
Norway	13.10%	0.10%	0.20%	0.33%
Poland	17.70%	0.17%	1.97%	11.51%
Portugal	19.40%	0.43%	1.03%	2.80%
Slovak Republic	13.10%	0.34%	0.91%	3.11%
Slovenia	14.00%	0.00%	0.04%	0.25%
Spain	21.20%	0.77%	1.23%	2.30%
Sweden	14.30%	0.38%	0.58%	0.80%
Switzerland	15.50%	0.00%	0.07%	0.14%
Turkey	25.50%	1.39%	7.21%	21.29%
United Kingdom	18.90%	0.25%	0.35%	0.72%
United States	24.00%	0.85%	1.13%	1.66%
OECD - Average	17.90%	0.64%	1.72%	4.55%

Source: Author's own calculations based on Poverty Statistics 1965-2014, OECD and World Development Indicators 1960-2017, The World Bank

Note: Presented rates are poverty rates for incomes after taxes and transfers.

the poverty rates by 2.9 and 3.2 percentage points in 2012 and 2014, respectively; while in Turkey the reduction in poverty with transfers were 1.4 and 1.3 percentage points, respectively in 2012 and 2014.

Table 6. Comparative Poverty Rates for Years from 2011 to 2015

Country	Poverty Line	2011	2012	2013	2014	2015
TURKEY	%60 of Median Income (after taxes and before transfers)	28	27.1	26.5	26.4	27
	%60 of Median Income (after taxes and transfers)	26.6	25.7	24.7	25.1	25.2
MEXICO	%60 of Median Income (after taxes and before transfers)	-	28.6	-	26.9	-
	%60 of Median Income (after taxes and transfers)	-	25.7	-	23.7	-

Source: Poverty Statistics 1965-2014, OECD
Note: Data is available only for even years because HBS conducted biennially in Mexico.

4.4 Income inequality

Table 7 demonstrates that Turkey, with an average Gini coefficient of 0.419 for the period 1990-2014, ranks the third highest in inequality, right after Chile and Mexico, whose Gini coefficients are 0.49 and 0.487, respectively. In general, Turkey stands between Latin American countries, whose Gini coefficients are around 0.50, and the developed countries, whose Gini coefficients are around 0.30.[26] The Gini coefficient for Turkey is 0.105 units higher than the OECD average, while that for Mexico is 0.172 units higher.

[26] According to CIA Factbook Turkey is 63th country among 145 countries in terms of size of income equality. Mexico is ranked as 24th country. The case for most of other Latin American countries are worse. For further details, see, https://www.cia.gov/library/publications/the-world-factbook/rankorder/2172rank.html [Accessed, 27.06.2018]

Table 7. Average Gini Coefficients between 1990-2014 (After Taxes and Transfers)

Country	Average Gini
Chile	0.490
Mexico	0.487
Turkey	0.419
United States	0.370
Latvia	0.364
Israel	0.363
Portugal	0.356
United Kingdom	0.350
Greece	0.339
Spain	0.331
Estonia	0.331
Japan	0.330
New Zealand	0.329
Australia	0.325
Italy	0.321
Canada	0.310
Poland	0.309
Ireland	0.309
Korea	0.309
Switzerland	0.294
France	0.290
Hungary	0.288
Netherlands	0.285
Luxembourg	0.278
Austria	0.277
Germany	0.277
Belgium	0.271
Iceland	0.268
Slovak Republic	0.261
Czech Republic	0.258
Norway	0.254
Sweden	0.254
Finland	0.247
Slovenia	0.245
Denmark	0.233
OECD Average	0.315

Source: Author's own calculations based on Poverty Statistics 1965-2014, OECD

In OECD database, there are three different estimations for Gini coefficient: before taxes and transfers (i.e. market income), after transfers and before taxes (i.e. gross income), and after taxes and transfers (disposable income). However, as in the case of poverty, only data for "after taxes and transfers" and "after taxes and before transfers" are available for Turkey and Mexico. As shown in Table 8, similar to poverty reduction, transfers have positively affected income inequality in both

countries. On the other hand, transfers in Mexico have been less effective than transfers in Turkey in reducing income inequality. Transfers in Turkey decreased Gini coefficient by 0.023 and 0.025 points in 2012 and 2014, while the respective rates for Mexico were 0.016 and 0.019.

Table 8. Comparative Gini Coefficients for Years from 2011 to 2015

	Year	2011	2012	2013	2014	2015
TURKEY	Gini Coefficient (after taxes and before transfers)	0.427	0.422	0.416	0.423	0.429
	Gini Coefficient (after taxes and transfers)	0.403	0.399	0.390	0.398	0.404
MEXICO	Gini Coefficient (after taxes and before transfers)	-	0.473	-	0.478	-
	Gini Coefficient (after taxes and transfers)	-	0.457	-	0.459	-

Source: Poverty Statistics 1965-2014, OECD
Note: Data is available only for even years because HBS conducted biennially in Mexico.

CHAPTER 5

INCIDENCE ANALYSIS:

THE IMPACTS OF TAXES, TRANSFERS AND THE SOCIAL SECURITY SYSTEMS ON POVERTY AND INCOME INEQUALITY

This chapter is the main part of this thesis. In the sections of the chapter Turkey and Mexico are examined separately. For each country, incidences of income tax, minimum income allowance, consumption tax, total tax, SSC, SST and other transfers are evaluated. Moreover, relative, ultra, extreme and moderate poverty rates and Gini coefficients are assessed for nine income concepts for four different cases. Two cases treat contributory SST as transfers or part of market income, with SSC treated accordingly. In two other cases employers' portion of SSC is and is not assessed as a payment by the employee. Table 9 summarizes the four different cases studied.

Table 9. Summary of Cases

Cases	Contributory SST	Definition of SSC	Employers' SSC
1st Case	Transfer	All contributions	Excluded
2nd Case	Market Income	Contributions paid for health services	Excluded
3rd Case	Transfer	All contributions	Included
4th Case	Market Income	Contributions paid for health services	Included

5.1 Turkey

5.1.1 Tax system

Based on calculations using data from 2014 HBS data, Figure 1 displays the overall incidences of income tax as a percentage of disposable income for different income definitions. The overall incidences of income tax before and after accounting for Minimum Income Allowance (MIA) are 12.94 percent and 10.99 percent, respectively. Both taxes increase from the lower to the higher deciles, an implication of the statutory progressivity of the Turkish income tax system. The statutory incidences of income taxes before and after MIA on the richest decile is much higher than those on the poorest decile. Incidence of the income tax on the first decile is very low as a consequence of employment mainly in the informal sector for low income people.

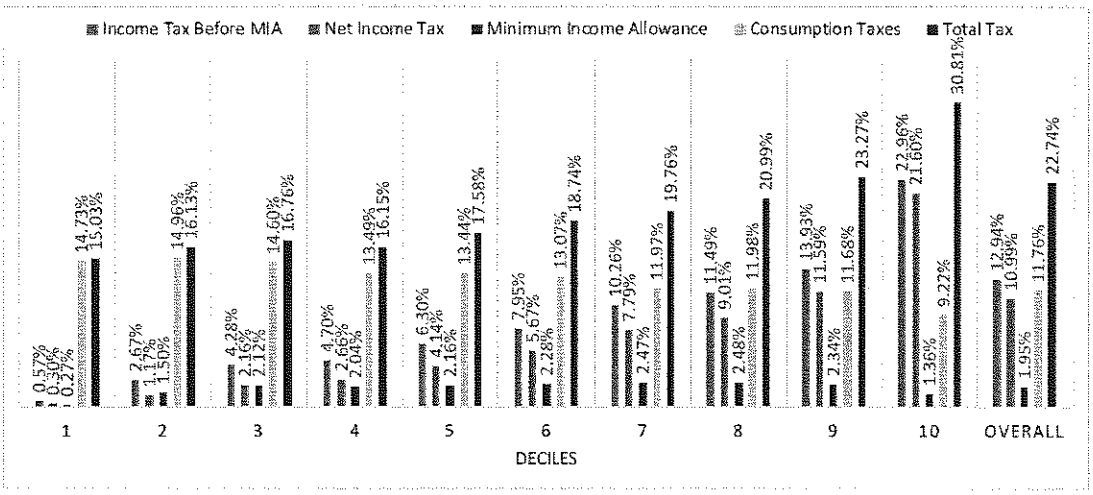


Figure 1. Incidence of taxes in Turkey
Source: Author's own calculations based on Turkey HBS 2014

Taken as the component of income that decreases the tax burden on the individual, greater incidence of MIA has positive meaning. In other words, as incidence of MIA increases, incidence of the net income tax decreases. Incidence of

MIA for the first decile is the lowest with 0.27 percent, while it is the second lowest for the last decile with 1.36 percent. Low incidence for the first decile arises from the same reasons behind the low incidence of income taxes. On the other hand, due to its flat rate, increase in the amount of MIA from the ninth to the tenth decile is relatively less than the increase in income for these deciles, which results in a lower incidence of MIA on the tenth decile. However, this is not the case for the middle income groups, and incidence increases from the second to the eight decile except for the fourth decile, which is due to the fact in the fourth decile the number of people working in the formal sector increase relatively more than their income.

Turning to consumption taxes, their overall incidence is 11.76 percent. Despite reduced VAT rates of 8 percent and 1 percent for some basic consumption goods, which are more significant for lower income groups, and several progressive excise taxes with rates that increase with quality or price, consumption taxes are regressive. Lower income groups, who consume a greater portion of their incomes, pay a higher percent of their incomes as consumption taxes than higher income groups, who consume relatively smaller portion of their incomes. The regressivity of consumption taxes is exacerbated by the existence of various special consumption taxes on goods that are consumed by the poor and the rich alike.[27]

In the overall, incidence of total taxes with respect to disposable income is 22.74 percent, making the Turkish tax system a progressive one. In fact, income taxes ameliorate income inequality, while consumption taxes work in the opposite direction. Although the incidence of consumption taxes is 0.77 percentage points higher in the overall than that of net direct taxes and this holds true for all income deciles except for the ninth and the tenth, this is not enough to neutralize or reverse

[27] Among the OECD countries Turkey has the highest special consumption tax revenue/GDP ratio (Buydens, 2016).

the progressivity of the income taxes. Note, however, that the income tax incidence calculated here are "hypothetical," in the sense that it is based on statutory income tax obligations and ignores tax evasion. Whether the Turkish tax system is in the overall progressive or regressive depends on how much of the statutory income tax obligations are evaded.

5.1.2 The social security system

Figure 2 indicates that the overall burden of social security contributions (SSC) is 11.23 percent when employers' contribution is excluded, and 21.60 percent when it is included. Despite its flat rate, distribution of SSC over disposable income is progressive in general. In fact, in the economy in which there is full employment and all people work in the formal sector, the burden of SSC would be flat or even regressive due to the non-wage income earned by richer income groups. However, in Turkey, where the size of the informal economy and employment is high especially across the lower income groups and the formal employment rates increase from lower to higher income groups, the progressivity of SSC is natural. Note that the incidence of SSC for the tenth decile is lower than that for the ninth decile. This is due to the fact that incomes of the most of the people in the richest decile is above the upper limit of for SSC (6.5 times of minimum income) after which there is no SSC to be paid. Consequently their contributions do not increase but remain constant as their income increase and they pay relatively low share of their income.

According to Figure 3, social security transfers (SST) are also progressive in general despite the fluctuation across the first four deciles. In the overall the incidence of SST is 16.13 percent, and is more on individuals in the lower income

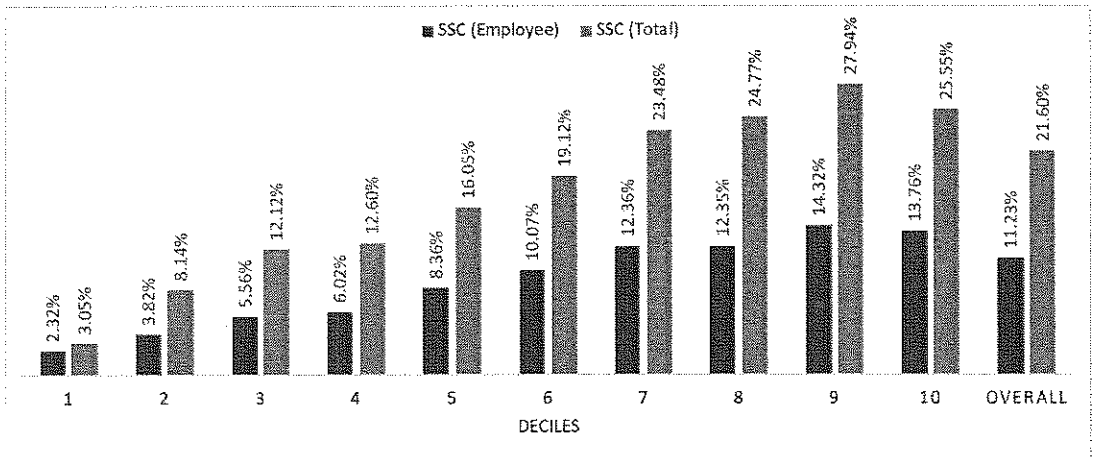


Figure 2. Incidence of SSC in Turkey
Source: Author's own calculations based on Turkey HBS 2014

groups, i.e. they benefit more in proportion to their income from SST than those in higher income deciles. The incidence of SST is low in higher income groups, due to an upper limit for SST similar to the upper limit for SSC. Using data from HBS, it is estimated that the average SST per month for the overall population is slightly more than the minimum wage income, while the average SST per month for the tenth decile is slightly more than 1.5 times of the minimum wage income. Accordingly, the share of SST in the income of higher income groups is less.

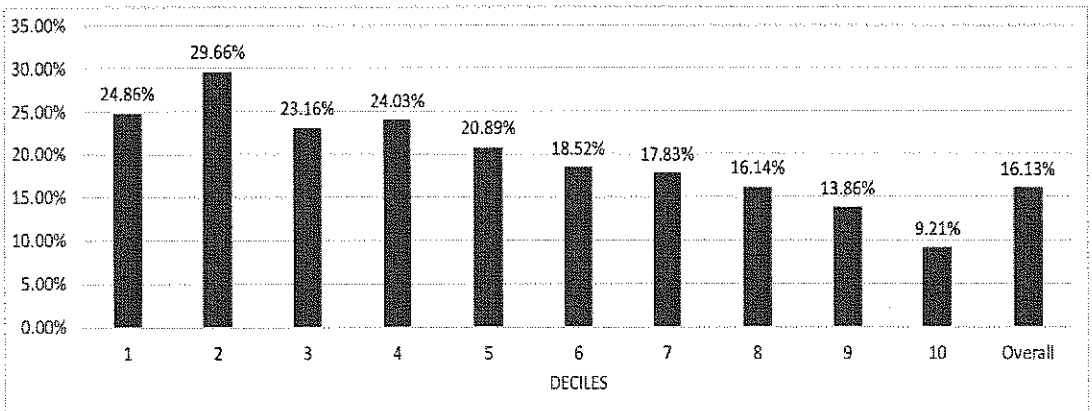


Figure 3. Incidence of SST in Turkey
Source: Author's own calculations based on Turkey HBS 2014

Figure 4 shows how the SST/SSC ratio varies over different deciles. In the overall 75 percent of SSC is returned as SST. Note that SSC also include health payments, while the individual level SST figures used in this study are not adjusted for the in kind health care benefits received. From macro level data presented in Table 4, we know that government health expenditures is about half of the pensions and unemployment benefits. Consequently, when the value of in-kind health transfers added as SST, the overall compensation rate will be more than 1. Figure 4 reveals that lower deciles receive relatively more as SST. The first five income deciles receive more transfers than their paid contributions, whereas the remaining five income groups gets less. This indicates that in terms of SSC and SST, the social security system in Turkey is progressive.

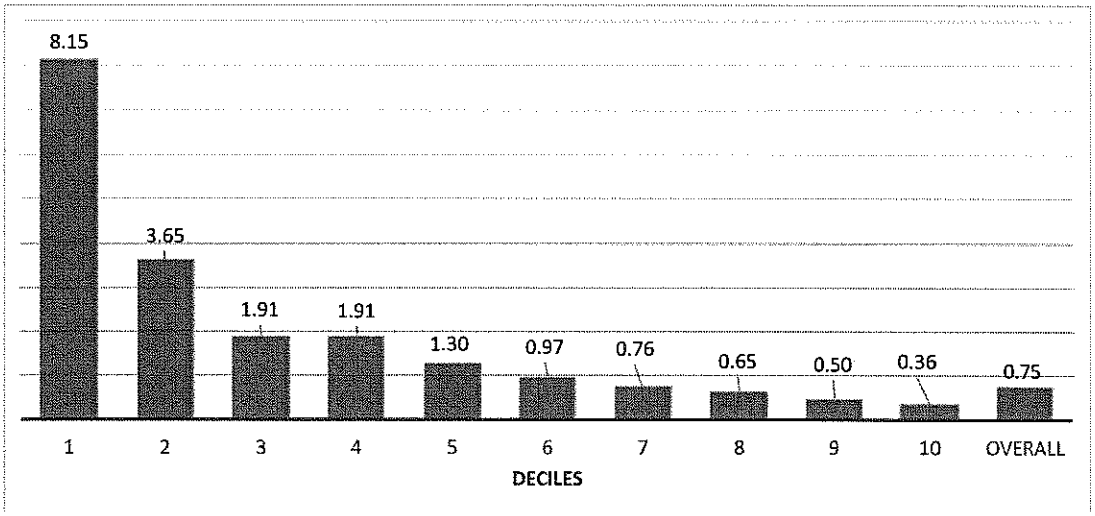


Figure 4. SST/SSC ratio in Turkey (employer's contribution included in SSC)
Source: Author's own calculations based on Turkey HBS 2014

Figure 5 presents the distribution of social security transfers other than pensions, unemployment benefits and health. Other transfers have a positive impact on income distribution as they constitute a decreasing share of income across deciles. Other transfers, which constitute about 9 percent of total transfers, stands at

1.60 percent of the overall disposable income. However they amount to 9.18 percent of disposable income for the poorest decile, while the same figures is 0.89 percent for the richest decile. These figures are in line with studies, which argue that non-contributory transfers such as social assistance payments are typically pro-poor and they reduce extreme poverty.[28] Even these type of transfers have positive impact on income distribution, they are not that much effective for overall Turkish society due to their low share over total income.

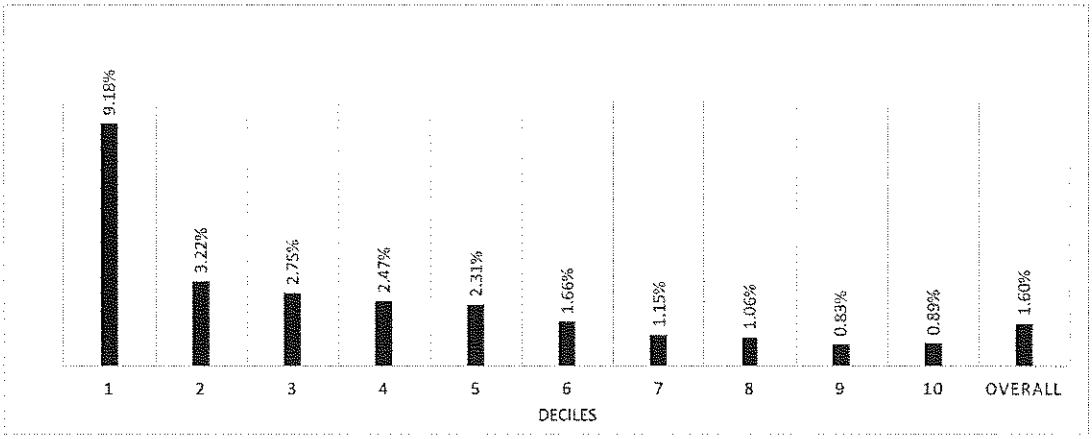


Figure 5: Incidence of other transfers in Turkey
Source: Author's own calculations based on Turkey HBS 2014

5.1.3 Poverty rates and Gini coefficients

Table 10 presents relative and absolute poverty rates in Turkey that were calculated using the 2014 HBS data. Poverty rates for nine different income concepts are given separately. In all cases, relative poverty rate for market income is more than the rate for net market income, indicating that taxes and SSC together have a positive effect on relative poverty. Poverty rates with market income after income tax and before deducting minimum income allowance (MIA) are less than the poverty rates for market income after SSC except for the third case, in which employers' contributions

[28] See, for instance, Cabrera et al. (2015), Bosch and Manacorda (2012), Baez and Comacho (2011), and Lomeli (2008).

are included as part SSC paid by the individuals.. So income taxes before MIA have greater positive impact on poverty compared to SSC in all cases except the third case,. The amount of SSC paid is about twice of the income tax paid, so the third case indicates that a unit of income tax is more effective than a unit of SSC in reducing relative poverty. Ratios of SSC's impact in the first case to the third case and in the second case to the fourth case are more than 2, which implies that employers' contributions are more effective than contributions of employees in reducing poverty. Except for the very small positive effect (0.2 percentage points) in the second case, the impact of MIA on relative poverty is negative in other cases. On the other hand, although indirect taxes increase relative poverty, taxes in the overall reduce relative poverty.

In the first and third cases, in which SST are taken as transfers, transfers decrease relative poverty 6.95 and 7.59 percentage points, respectively, while the respective rates for the second and fourth cases, in which transfers are considered as part of market income, are 0.92 and 0.88 percentage points. These together suggest that SST is the most effective fiscal tool for reducing the relative poverty, while the effect of other transfers is relatively low. On the other hand, the share of other transfers on reducing relative poverty is about 12.5 percent while their share in total transfers is 9 percent, implying that a unit of other transfers is more efficient than a unit of SST in reducing relative poverty.

In terms of absolute poverty, Table 10 shows that SST, other transfers, and MIA that leads to increases in incomes of individuals decrease absolute poverty rates, as to be expected; while taxes and SSC that they pay increase absolute poverty. In all cases, both income tax and SSC increase absolute poverty for all three measures, while SSC has more negative impact on poverty rates than income tax.

Table 10. Poverty Rates in Turkey

	Poverty Lines	Market Income	Gross Income	Net Market Income	Market Income After Taxes And SSC	Market Income After Income Tax Before MIA	Market Income After Net Income Tax	Market Income After SSC	Disposable Income	Consumable Income
First Case	Relative Poverty	30.54%	23.59%	28.44%	30.22%	29.29%	29.89%	29.42%	21.59%	22.45%
	Point Change		-6.95	-2.09	-0.32	-1.24	-0.65	-1.12	-6.86	0.86
	Ultra-Poverty	3.43%	0.19%	3.52%	8.92%	3.44%	3.44%	3.50%	0.21%	0.76%
	Point Change		-3.24	0.09	5.49	0.01	0.01	0.07	-3.31	0.55
	Extreme Poverty	7.79%	1.28%	8.06%	14.73%	7.83%	7.83%	8.01%	1.42%	3.02%
	Point Change		-6.51	0.27	6.94	0.04	0.04	0.22	-6.64	1.6
	Moderate Poverty	18.14%	5.42%	19.16%	27.66%	18.51%	18.38%	18.87%	6.20%	10.16%
	Point Change		-12.71	1.02	9.52	0.38	0.24	0.73	-12.95	3.95
Second Case	Relative Poverty	23.91%	22.99%	22.48%	23.30%	22.90%	22.88%	23.71%	21.59%	22.45%
	Point Change		-0.92	-1.43	-0.61	-1.01	-1.03	-0.20	-0.89	0.86
	Ultra-Poverty	0.59%	0.19%	0.66%	1.72%	0.60%	0.60%	0.65%	0.21%	0.76%
	Point Change		-0.41	0.07	1.13	0.01	0.01	0.06	-0.45	0.55
	Extreme Poverty	2.20%	1.28%	2.40%	4.42%	2.22%	2.22%	2.39%	1.42%	3.02%
	Point Change		-0.92	0.20	2.21	0.02	0.02	0.19	-0.98	1.60
	Moderate Poverty	7.39%	5.57%	7.96%	12.18%	7.73%	7.48%	7.80%	6.20%	10.16%
	Point Change		-1.82	0.57	4.79	0.34	0.09	0.41	-1.76	3.95
Third Case	Relative Poverty	32.81%	25.22%	28.44%	30.22%	31.28%	31.99%	29.42%	21.59%	22.45%
	Point Change		-7.59	-4.37	-2.59	-1.53	-0.82	-3.39	-6.86	0.86
	Ultra-Poverty	3.43%	0.19%	3.52%	8.92%	3.44%	3.44%	3.50%	0.21%	0.76%
	Point Change		-3.24	0.09	5.49	0.01	0.01	0.07	-3.31	0.55
	Extreme Poverty	7.79%	1.28%	8.06%	14.73%	7.83%	7.83%	8.01%	1.42%	3.02%
	Point Change		-6.51	0.27	6.94	0.04	0.04	0.22	-6.64	1.60
	Moderate Poverty	17.83%	5.26%	19.16%	27.66%	18.04%	17.93%	18.87%	6.20%	10.16%
	Point Change		-12.58	1.32	9.83	0.21	0.10	1.04	-12.95	3.95
Fourth Case	Relative Poverty	24.21%	23.34%	22.48%	23.30%	23.27%	23.39%	23.71%	21.59%	22.45%
	Point Change		-0.88	-1.74	-0.92	-0.95	-0.82	-0.50	-0.89	0.86
	Ultra-Poverty	0.59%	0.19%	0.66%	1.72%	0.60%	0.60%	0.65%	0.21%	0.76%
	Point Change		-0.41	0.07	1.13	0.01	0.01	0.06	-0.45	0.55
	Extreme Poverty	2.20%	1.28%	2.40%	4.42%	2.21%	2.21%	2.39%	1.42%	3.02%
	Point Change		-0.92	0.20	2.21	0.01	0.01	0.19	-0.98	1.60
	Moderate Poverty	7.32%	5.50%	7.96%	12.18%	7.51%	7.38%	7.80%	6.20%	10.16%
	Point Change		-1.82	0.64	4.86	0.19	0.06	0.48	-1.76	3.95

Source: Author's own calculations based on Turkey HBS 2014

While income tax only increases ultra-poverty by 0.01 percentage points in all cases, SSC leads to an increase of 0.06 percentage points when contributions for pensions are included and 0.07 percentage points when they are excluded. The negative impact of income tax on ultra-poverty is low as most of the individuals in this income category are typically not employed or work in the informal sector, hence they do not pay income taxes. However, since all individuals, regardless of whether they are unemployed or work in the informal sector, are by law obligated to make a general health insurance payment, the negative impact of SSC on absolute poverty is more than that of income taxes. As for MIA, it does not have a significant effect on ultra and extreme poverty, while it decreases moderate poverty. People who live in ultra or extreme poverty are either unemployed or work in the informal sector, while a higher proportion of individuals work in the formal sector in the moderate income range. Accordingly, most of the poorest people cannot benefit from MIA. Last but not least, as in the case of relative poverty, SST is the most effective tool in reducing absolute poverty rates, while other transfers are less effective due to their lower share in income.

Table 11 presents Gini coefficients that were calculated using the 2014 HBS data for Turkey. Similar to their impact in the case of poverty, income tax and SSC together reduce income inequality in all cases, while income tax before MIA is more effective than SSC except for the third case. MIA has a very small effect in reducing the Gini coefficients. Together with their similar impact on poverty rates, MIA is effective in redistributing income only for middle income groups and does not work toward reducing poverty or inequality among very poor. On the other hand, despite the fact that indirect taxes increases Gini coefficient by 0.15 points, Turkey's overall tax system reduces inequality in all cases. SST is the most effective tool in terms of

reducing inequality, while impact of other transfers is relatively low due to the their low share, as in the case of poverty. However, differently from the case of poverty, SST and other transfers have similar unit effect in terms of reducing Gini coefficient when their share over disposable income is taken into account.

Table 11. Gini Coefficients in Turkey

Cases	Market Income	Gross Income	Net Market Income	Market Income After Taxes And SSC	Market Income After Income Tax Before MIA	Market Income After Net Income Tax	Market Income After SSC	Disposable Income	Consumable Income
1st Case	0.490	0.413	0.440	0.471	0.462	0.461	0.474	0.363	0.378
Point Change		-0.077	-0.050	-0.019	-0.028	-0.029	-0.016	-0.077	0.015
2nd Case	0.408	0.401	0.370	0.387	0.376	0.376	0.403	0.363	0.378
Point Change		-0.007	-0.038	-0.022	-0.032	-0.032	-0.005	-0.007	0.015
3rd Case	0.500	0.425	0.440	0.471	0.475	0.475	0.474	0.363	0.378
Point Change		-0.075	-0.060	-0.029	-0.025	-0.026	-0.026	-0.077	0.015
4th Case	0.413	0.406	0.370	0.387	0.382	0.382	0.403	0.363	0.378
Point Change		-0.007	-0.043	-0.026	-0.031	-0.031	-0.010	-0.007	0.015

Source: Author's own calculations based on Turkey HBS 2014

In summary, the Turkish fiscal system reduces the relative poverty in all cases, while its effect on absolute poverty varies depending on how pension payments are treated. In the first and third cases, in which pensions are treated as social security transfers, the overall impact of the fiscal system on poverty is positive. However, as in the second and the fourth cases, if pensions are not included in the social security transfers, the overall fiscal system fails to reduce absolute poverty rates. Gini coefficient for consumable income is less than for market income in all cases, which indicates that in the overall the Turkish fiscal system is progressive and distributes income more equally than the market distributes.

5.2 Mexico

5.2.1 Tax system

Figure 6 demonstrates that in Mexico the incidence of income tax before MIA in the overall is 5.98 percent, while it goes down to 5.30 percent after taking into account MIA. Thanks to the progressive statutory income tax rates, the distribution of incidence of income tax over deciles is unexceptionally progressive for both before and after MIA. Note that the incidence of net income tax is negative for the first three deciles. In other words, for the first three deciles, the amount of MIA exceeds the amount of income tax that employees should pay. There are two basic reasons behind this. First, the tax rates for lower income groups are low. The rates for the first three tax brackets are 1.92 percent, 6.4 percent and 10.88 percent, while the Turkish income tax brackets start with a 15 percent tax rate. Secondly, MIA rates are higher for lower incomes and, moreover, if its amount exceeds the amount of income tax to be paid the difference is paid to the employee. On the other hand, the incidence of income tax before MIA is also low for the first three deciles due to the high unemployment and informal employment rates for individuals in these deciles and low tax rates for the corresponding low income brackets.

The structure of MIA is different in Mexico than in Turkey. In Turkey, every employee has right to get MIA and the amount depends on his or her marital status and family structure, while in Mexico the only determinant is the wage level. There are ten brackets for MIA and individuals earning more than 7,382.33 pesos (approximately 3.66 times of the minimum wage income) do not have a right to

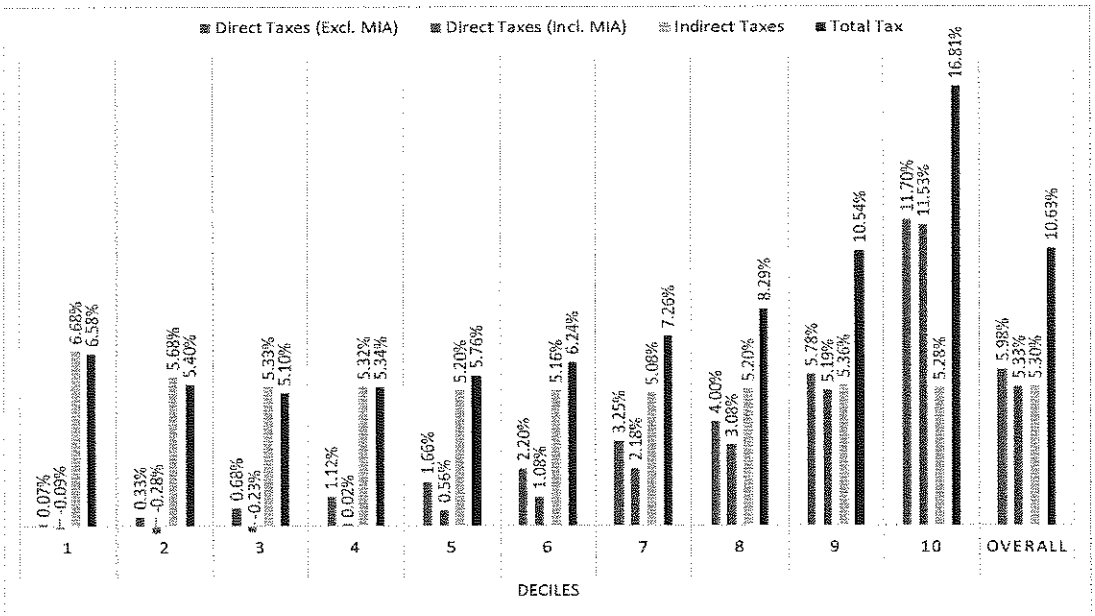


Figure 6. Incidence of taxes in Mexico
Source: Author's own calculations based on Mexico HBS 2014

benefit from MIA.[29] Consequently, the incidence of MIA would be expected to be zero or very low for high income deciles and high for the lower incomes. However, this is not the case. With 0.16 percent the incidence of MIA is the lowest for the lowest income decile and with 0.59 percent it is the third lowest for the second lowest income decile. This is due to high rates of unemployment and informal employment within low income groups that prevent them from benefiting from MIA. As unemployment and informal employment rates decrease with income deciles, the incidence of MIA increases until the seventh decile. It starts to decrease after seventh decile due to the lower share of people earning less than 7382.33 pesos in higher income groups. The incidence for the highest income decile is 0.17 percent and not equal to zero, as some individuals in that income category work for incomes less than 7382.33 pesos.

[29] For further details, see (in Spanish), http://m.sat.gob.mx/informacion_fiscal/devoluciones_compensaciones/Paginas/subsidio_al_empleo.aspx [Accessed, 17.08.2018]

Figure 6 also reveals that the overall incidence of total consumption taxes with respect to disposable income is 5.30 percent. Despite its regressive nature in general, the incidence of consumption tax across deciles does not change very much. Except for the first decile, the incidence of consumption taxes over deciles are between 5 and 6 percent, with the incidence on the first decile at 6.68 percent. This is a result of the zero rated VAT policy that is applied for all basic consumption goods. Additionally, excise taxes are very low such as Mexico has the lowest excise tax/ GDP ratio among the OECD countries (Buydens, 2016).

Figure 6 reveals that the incidence of the total taxes in the overall is 10.63 percent. Although the total tax incidence is the highest for the highest income decile, the overall tax system is not monotonically progressive. While income tax incidence increases monotonically as income increases, the incidence of consumption taxes exhibit a complex picture. The incidence of total taxes decreases from the first until the third deciles and then increases monotonically for the rest of the income deciles. Note that the incidence of indirect taxes is more than that of direct taxes for the all income groups except the tenth decile. In other words, only individuals in the highest income decile pay more tax on their income than on their consumptions. For individuals in the lowest income decile, while the incidence of income tax is negative, the incidence of indirect taxes is 6.68 percent. For the highest income decile the incidence of direct taxes is more than double of that of indirect taxes.

5.2.2 The social security system

According to Figure 7, for the case in which employer contributions are not counted in SSC, the incidence of SSC in the overall is only 1.04 percent thanks to the very low SSC rates for employees. When employers' contribution is included in SSC, the

incidence becomes 6.16 percent. In both cases the distribution of SSC over income deciles is progressive. The incidence on individuals in the lowest income decile is very low in both cases due to high unemployment and informal employment rates for that group, and the incidence on individuals in the highest income decile is the highest. Although there is an upper limit for SSC, which is 25 times of the minimum wage income, it is not applied for the contributions made for health care. As a result, the total amount of SSC paid by individuals in the highest income decile continues to increase even after their incomes exceed the upper limit. In Mexico, the SSC rate for employers is 30.55 percent for gross incomes until three times of the minimum wage income and decreases 11.25 percent after that. On the other hand, employees' SSC rates for the corresponding income levels are 2.38 and 2.78 percent, respectively (Social Security Administration, 2016). Consequently, the gap between the incidences before and after employers' contribution added is more for individuals in lower income deciles than for individuals earning more than three times of the minimum wage income.

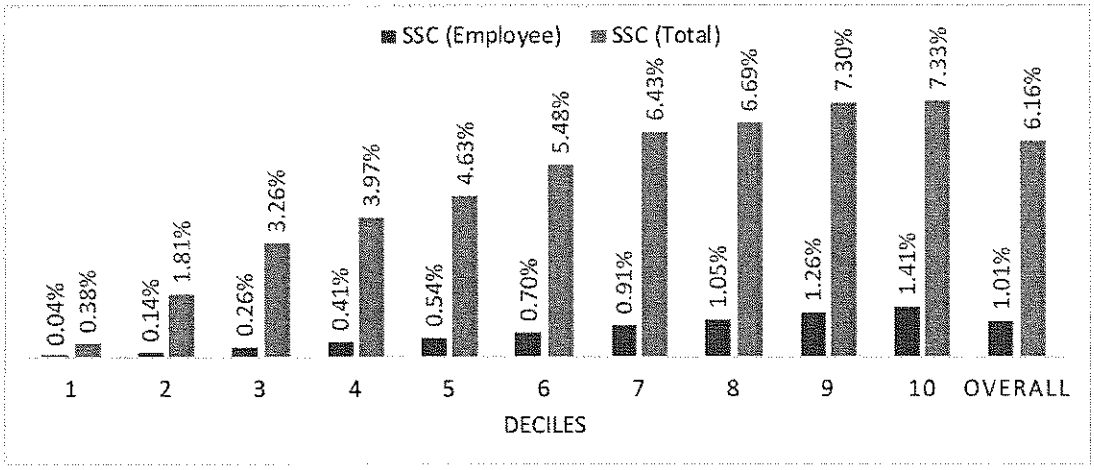


Figure 7. Incidence of SSC in Mexico
Source: Author's own calculations based on Mexico HBS 2014

As Figure 8 reveals, social security transfers (SST) exhibit a complex distribution, appearing to be regressive rather than progressive. The overall incidence of SST is 6.13 percent, while the incidence is 2.19 percent and 8.97 percent for the first and the last decile, respectively. In other words, the rich benefit more from SST. Note that the overall incidence of SST is about one third of that in Turkey (16.13 percent). Namely, SST in Mexico are not much and designed poorly. Similar results are obtained in previous studies as well (Lindert, Skoufias & Shapiro, 2006; Scott, 2014).

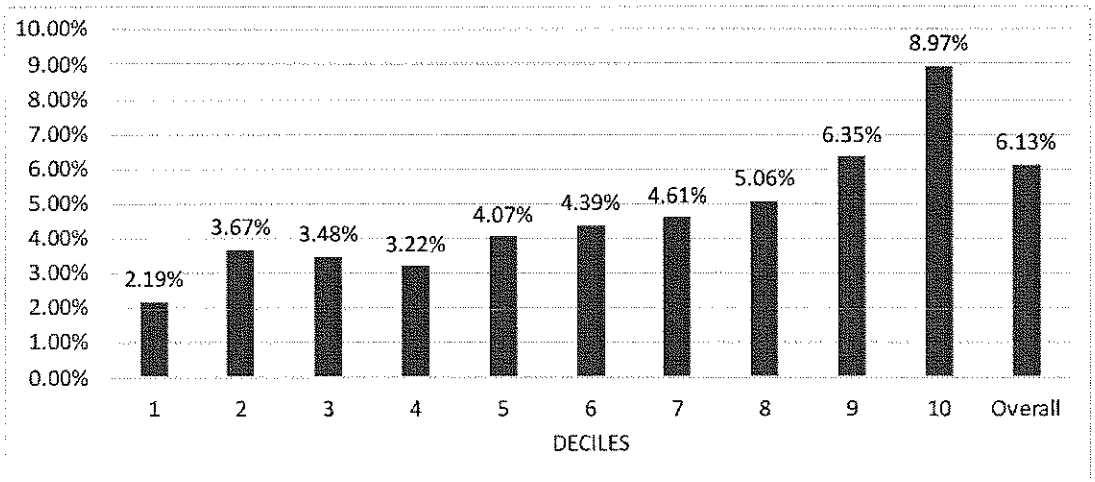


Figure 8. Incidence of SST in Mexico
Source: Author's own calculations based on Mexico HBS 2014

Figure 9 presents the ratio of incidences of SST and SSC. In overall, the ratio is equal to 1, which means that on average individuals get back what they pay from the social security system. When the in-kind health-care transfers, which is the part of SST but not included in this thesis due to the lack of data at the individual level, are included, the ratio will be more than 1. Individuals in the first three income deciles get paid a relatively higher portion of their income as SST, while they pay a relatively smaller portion of their income as SSC. The same is true also for

individuals in the highest income decile, albeit less sharply so. Thus, it can be said that the Mexican social security system in overall works on behalf of both lower and higher income groups, while the middle income groups are the losers of the system.

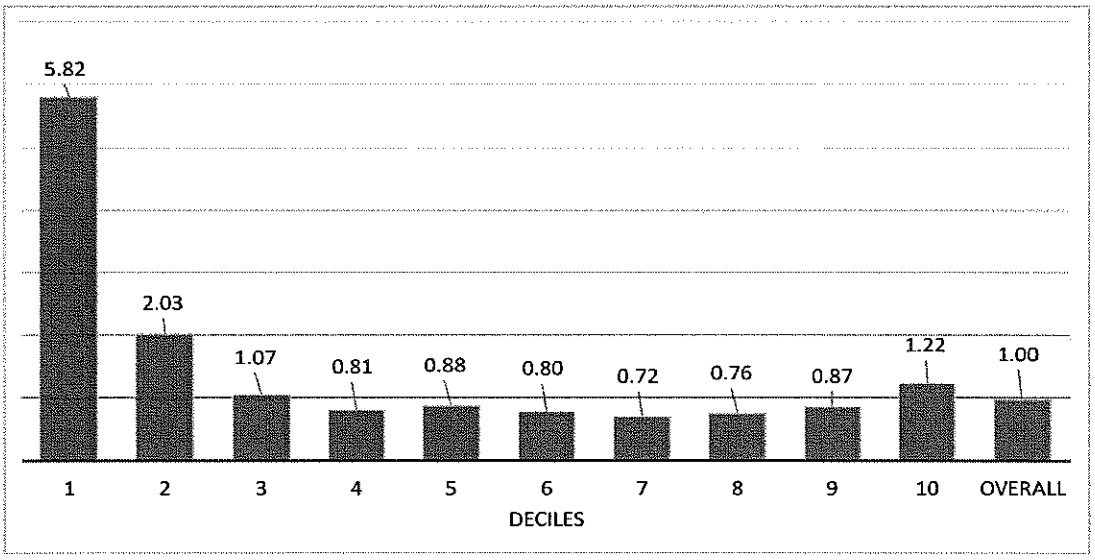


Figure 9. SST/SSC ratio in Mexico (employer's contribution included in SSC)
Source: Author's own calculations based on Mexico HBS 2014

Figure 10 demonstrates that other transfers are distributed progressively across income deciles. The incidence of other transfers in the overall is 2.58 percent, which is lower than the incidences of other parts of the Mexican fiscal system except MIA. On the other hand, incidence is 18.19 percent for the poorest decile while it is only 0.55 percent for the richest decile. Accordingly, its incidence on the poorest decile is more than the incidences of the other fiscal tools, while it has the lowest incidence after MIA on the richest decile. These results support the researchers who suggest that such non-contributory transfers are what benefit the very poor, but are less effective for the rest of the society. Note that the share of other transfers in total transfers is 29.6 percent in Mexico, more than three times of the corresponding share

of about 9 percent for Turkey, and, taking into account also the regressivity of SST, other transfers has a much more significant impact in Mexico than in Turkey.

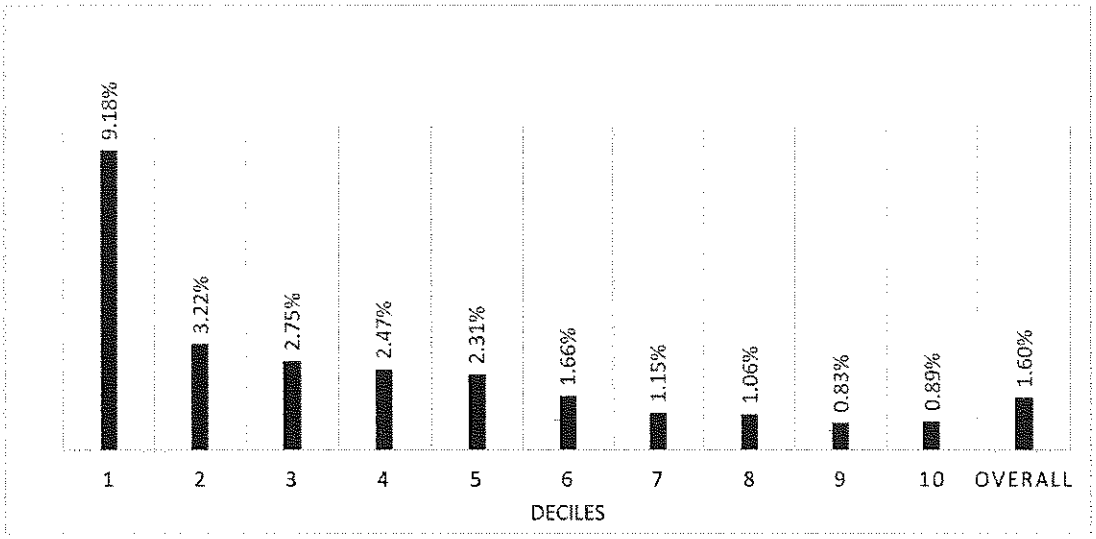


Figure 10. Incidence of other transfers in Mexico
Source: Author's own calculations based on Mexico HBS 2014

5.2.3 Poverty rates and Gini coefficients

As presented in Table 12, in Mexico the relative poverty rates for the net market income is more than the rates for the market income in all cases. Accordingly, the income tax and SSC together have positive effect on relative poverty. However, following the same as for Turkey, SSC are less effective than income tax except for the third case, which includes the employer's contribution in calculating the SSC. In all cases the relative poverty rates for market income after net income tax is more than the relative poverty rates for market income after income tax and before MIA. That is to say, MIA increases relative poverty rates in all cases. On the other hand, indirect taxes increase relative poverty by 0.15 percentage points. In the overall, taxes and SSC increase relative poverty in the first case, while they decrease it in other cases.

Table 12. Poverty Rates in Mexico

	Poverty Lines	Market Income	Gross Income	Net Market Income	Market Income After Taxes And SSC	Market Income After Income Tax Before MIA	Market Income After Net Income Tax	Market Income After SSC	Disposable Income	Consumable Income
First Case	Relative Poverty	26.52%	24.72%	26.26%	26.62%	26.22%	26.30%	26.50%	24.16%	24.31%
	Point Change		-1.80	-0.26	0.10	-0.29	-0.21	-0.02	-2.10	0.15
	Ultra-Poverty	5.33%	2.58%	5.33%	6.60%	5.34%	5.32%	5.33%	2.56%	3.21%
	Point Change		-2.76	-0.01	1.26	0.01	-0.01	0.00	-2.76	0.65
	Extreme Poverty	13.86%	9.16%	13.85%	15.92%	13.96%	13.81%	13.91%	9.14%	10.52%
	Point Change		-4.70	-0.01	2.06	0.10	-0.05	0.05	-4.71	1.38
	Moderate Poverty	33.10%	27.41%	33.30%	36.22%	33.63%	33.09%	33.25%	27.60%	30.27%
	Point Change		-5.68	0.20	3.13	0.53	-0.01	0.15	-5.70	2.67
Second Case	Relative Poverty	26.32%	24.64%	25.91%	26.08%	25.82%	25.95%	26.27%	24.16%	24.31%
	Point Change		-1.68	-0.42	-0.25	-0.51	-0.38	-0.06	-1.75	0.15
	Ultra-Poverty	4.72%	2.58%	4.72%	5.67%	4.73%	4.71%	4.72%	2.56%	3.21%
	Point Change		-2.15	-0.01	0.95	0.01	-0.01	0.00	-2.15	0.65
	Extreme Poverty	12.40%	9.19%	12.37%	13.93%	12.48%	12.37%	12.42%	9.14%	10.52%
	Point Change		-3.21	-0.03	1.53	0.08	-0.03	0.02	-3.23	1.38
	Moderate Poverty	30.52%	27.51%	30.58%	33.17%	31.07%	30.52%	30.55%	27.60%	30.27%
	Point Change		-3.01	0.06	2.64	0.54	-0.01	0.03	-2.98	2.67
Third Case	Relative Poverty	27.36%	25.36%	26.26%	26.62%	26.95%	27.22%	26.50%	24.16%	24.31%
	Point Change		-2.00	-1.10	-0.74	-0.40	-0.14	-0.85	-2.10	0.15
	Ultra-Poverty	5.32%	2.56%	5.33%	6.60%	5.32%	5.32%	5.33%	2.56%	3.21%
	Point Change		-2.75	0.01	1.28	0.00	0.00	0.02	-2.76	0.65
	Extreme Poverty	13.62%	9.00%	13.85%	15.92%	13.65%	13.59%	13.91%	9.14%	10.52%
	Point Change		-4.62	0.23	2.30	0.03	-0.03	0.29	-4.71	1.38
	Moderate Poverty	31.65%	26.15%	33.30%	36.22%	32.00%	31.57%	33.25%	27.60%	30.27%
	Point Change		-5.50	1.64	4.57	0.35	-0.08	1.60	-5.70	2.67
Fourth Case	Relative Poverty	26.55%	24.92%	25.91%	26.08%	26.04%	26.19%	26.27%	24.16%	24.31%
	Point Change		-1.64	-0.65	-0.48	-0.52	-0.37	-0.29	-1.75	0.15
	Ultra-Poverty	4.71%	2.56%	4.72%	5.67%	4.71%	4.71%	4.72%	2.56%	3.21%
	Point Change		-2.15	0.01	0.96	0.00	-0.01	0.01	-2.15	0.65
	Extreme Poverty	12.25%	9.05%	12.37%	13.93%	12.30%	12.23%	12.42%	9.14%	10.52%
	Point Change		-3.20	0.13	1.69	0.05	-0.02	0.17	-3.23	1.38
	Moderate Poverty	29.57%	26.65%	30.58%	33.17%	30.03%	29.54%	30.55%	27.60%	30.27%
	Point Change		-2.92	1.01	3.60	0.46	-0.03	0.98	-2.98	2.67

Source: Author's own calculations based on Mexico HBS 2014

Transfers decrease relative poverty by 1.80 and 2.00 percentage points in the first and third cases, respectively, while the decrease exhibited in the second and the fourth cases are 1.68 and 1.64 percentage points, respectively. In other words, excluding pensions from social transfers decreases its poverty reducing effect by only 0.12 and 0.36 percentage points depending on whether employers' contributions are included in SSC. Thus, it can be concluded that SST are not effective in reducing relative poverty when compared to other transfers. Income tax before MIA decreases relative poverty by 0.51 and 0.52 percentage points in the second and fourth cases, while other transfers decreases it by 1.68 and 1.65 percentage points, respectively. These rates reveal that other transfers are more effective than income tax in terms of decreasing poverty rates. Consequently, other transfers come out to be the most effective tool of Mexican fiscal system for reducing the relative poverty.

Both income tax and SSC lead to increases in the three kind of absolute poverty measures considered in all cases. Income taxes increase poverty more than SSC when employers' contribution are excluded, while the opposite is true when they are included. The negative impact of income tax on ultra-poverty changes between 0 and 0.01 across the three cases, while the impact of SSC varies between 0 and 0.02. The reason behind this is the fact that most of the very poor individuals are either unemployed or work in the informal sector, and thus do not pay any income tax or SSC. MIA leads to decreases in all absolute poverty measures in all cases except for the ultra-poverty measure in the third case, where it does not make any change. While MIA reduces moderate poverty more than extreme and ultra-poverties, it reduces all absolute poverty rates more than the increase that income taxes engender. Accordingly, absolute poverty rates for market income after net income tax is less than the absolute poverty rates for market income. As in the case

of relative poverty, other transfers is the most effective tool in reducing absolute poverty rates. While their impact increases going from ultra to extreme poverty, they decrease going from extreme to moderate poverty. On the other hand, the impact of SST increases going from extreme to moderate poverty. These results are in line with the assertion that in Mexico other transfers are more effective tools for the poor, while SST redistribute toward high income groups.

Table 13 presents the Gini coefficients that were calculated using the 2014 HBS data for Mexico, Income taxes and SSC reduce income inequality in all cases, and income taxes prove to be more effective than SSC in reducing inequality in all cases. In fact, SSC reduce income inequality by only 0.001-0.002 percentage points, except for the third case (where contributions paid by employers are included in SSC). On the other hand, when MIA is taken into account, the decreases in the Gini coefficients are only between 0.001 and 0.002, indicating that the positive impact of MIA on inequality reduction is minimal. Indirect taxes increase the Gini coefficient only by 0.01 percentage points in all cases. Compared with the case of relative and absolute poverty rates, indirect taxes have less negative impact on income inequality rate. Accordingly, the Mexican tax system in the overall reduces income inequality in all cases.

When transfers are examined, SST come out to be less effective in reducing income inequality than other transfers. However, differently from the cases of poverty rates, other transfers are the second most effective fiscal tool in reducing the income inequality, income tax being the most effective one in that regard. All fiscal tools except indirect taxes decrease income inequality. The most effective tool is the income tax and the other transfers the second. While SST have less impact than other

transfers, SSC and MIA have the lowest positive effect. In overall, Mexican fiscal system reduces all types of poverty and income inequality irrespective of cases.

Table 13. Gini Coefficients in Mexico

Cases	Market Income	Gross Income	Net Market Income	Market Income After Taxes And SSC	Market Income After Income Tax Before MIA	Market Income After Net Income Tax	Market Income After SSC	Disposable Income	Consumable Income
1st Case	0.462	0.442	0.439	0.442	0.443	0.441	0.460	0.420	0.421
Point Change		-0.020	-0.023	-0.020	-0.020	-0.021	-0.002	-0.018	0.001
2nd Case	0.457	0.441	0.437	0.439	0.439	0.438	0.457	0.420	0.421
Point Change		-0.016	-0.020	-0.018	-0.018	-0.020	-0.001	-0.016	0.001
3rd Case	0.469	0.448	0.439	0.442	0.450	0.449	0.460	0.420	0.421
Point Change		-0.020	-0.030	-0.026	-0.019	-0.020	-0.009	-0.018	0.001
Fourth Case	0.457	0.441	0.437	0.439	0.439	0.438	0.457	0.420	0.421
Point Change		-0.016	-0.020	-0.018	-0.018	-0.019	-0.001	-0.016	0.001

Source: Author's own calculations based on Mexico HBS 2014

CHAPTER 6

DISCUSSION AND CONCLUSIONS

6.1 Summary and comparison of results

6.1.1 Tax systems

Income tax is progressive in both countries while their incidence on each corresponding decile and overall society is higher in Turkey. It reduces relative poverty and income inequality in Turkey relatively more than in Mexico, while income tax in Turkey has more negative impact on absolute poverty measures. In other words, income tax is more progressive in Turkey, but it increases absolute poverty rates more due to the fact that its incidence on low income groups are relatively higher in Turkey.

Despite the differences in values, incidence of MIA in both countries have a u-shaped trend in terms of benefits it provides, which means that its share in disposable income increases from low to middle incomes while it decreases from middle to high incomes. In both countries, MIA increases relative poverty levels slightly, while its relative impact is more in Turkey. It reduces the Gini coefficient in both countries, but the decrease is not very significant. In terms of absolute poverty, in Turkey MIA only reduces moderate poverty, while it reduces all measures of absolute poverties in Mexico at a higher rate. In total, MIA has a slightly regressive – almost neutral (i.e. neither progressive nor regressive) – structure in both countries, while in both countries it has a certain positive impact in reducing absolute poverty, more so in Mexico than in Turkey.

Despite some exceptions while moving across deciles, consumption taxes are regressive in both countries. This is mainly due to flatness of consumption tax rates and the fact that the poor consume a larger proportion of their income. Lowering or zeroing VAT rates for necessities and introducing special excise taxes for goods that are consumed more by individuals with higher incomes could ameliorate the regressivity of consumption taxes. There are such amendments to the otherwise flat consumption taxes in both Turkey and Mexico, but only to a limited extent that does not significantly change the regressive nature of consumption taxes in both countries. Comparing the two countries, Turkey's consumption tax system is more regressive than that of Mexico. As in the case of income tax, incidences of consumption taxes on each corresponding decile and in the overall are higher in Turkey. The overall incidence of consumption taxes is less than that of income tax in Mexico despite the fact the incidence of income tax is more than incidence of consumption taxes only in tenth decile, which is a consequence of the significant concentration of income in that decile. In Turkey the incidence of income tax exceeds that of consumption taxes in the ninth and the tenth deciles, together which is enough to overcome the regressivity of the consumption taxes in the overall . Consumption taxes increase all poverty rates and Gini coefficients in both countries, while their impact is more pronounced in Turkey for all poverty and inequality measures.

In overall, the Turkish tax system is monotonically completely progressive, while the Mexican tax system is progressive with the exception of the first two deciles. In both countries, taxes decreases inequality and relative poverty, with a more pronounced reduction in Turkey. On the other hand, as to be expected, taxes by themselves increase absolute poverty rates in both countries, while their overall

impact on absolute poverty rates is more in Turkey. In fact, consumption tax is less regressive in Mexico while progressiveness of its income tax is similar to Turkey. However, taxes in Turkey are more effective in both reducing relative poverty and income inequality as well as in increasing absolute poverty rates since the statutory rates are higher on average in Turkey than in Mexico.

6.1.2 Social security systems

In Turkey, the overall incidence of SSC before employers contribution is 11.23 percent, while it becomes 21.60 percent when employers contribution is counted as a payment that comes ultimately out of the employees' pockets. The respective overall incidences for Mexico are 1.01 percent and 6.16 percent. In Mexico, most of the statutory burden of SSC is on employers, while in Turkey the share of employees and self-employed together is slightly more than employers' share. On the other hand, the incidence of SSC on each corresponding decile and in the overall is higher in Turkey. Irrespective of whether employers' contribution is included in the estimation of SSC or not, SSC are monotonically progressive in Mexico, while there is drop going from the ninth to tenth decile in Turkey. As explained in the previous chapter, this exception is due to the structure of the social SSC in Turkey that caps the maximum income subject to contributions at 6.5 times of the minimum wage income. In both countries SSC reduces relative poverty and income inequality in all cases, while the opposite is the case for absolute poverty measures. Due to the fact that SSC in Turkey is much higher than in Mexico, SSC have relatively more influence both in reducing relative poverty and income inequality and increasing absolute poverty rates in Turkey.

The overall incidence of SST in Turkey is 16.13 percent and it is monotonically progressive across income deciles. In fact, SST is the most effective tool in the Turkish fiscal system in terms of reducing both income inequality and relative and absolute poverty rates. On the other hand, in Mexico the incidence of SST in the overall is only 6.13 percent and it is distributed regressively. Despite its regressivity, SST in Mexico reduces income inequality and all poverty rates, but to a lesser extent. Accordingly, in Mexico SST is less effective than other transfers and income tax in terms of reducing inequality and poverty.

In Mexico, the ratio of SST to SSC is equal to 1 in the overall, while in Turkey it is 0.75. While this ratio is u-shaped in Mexico as one moves from lower income to higher income deciles, it decreases monotonically in Turkey. The ratios for the first and the last deciles are 8.15 and 0.36 in Turkey, while the respective ratios are 5.82 and 1.22 in Mexico. In Turkey, first five deciles get more than they pay, while the remaining five higher income deciles receive less than they pay. In Mexico, the first three and the last income deciles receive more than they pay, while the reverse is true for the other deciles.

In the overall the social security systems are progressive in both countries, and they reduce both income inequality and poverty rates. Turkish social security system is arguably more effective than that of Mexico in all aspects due to its more progressive design as well as its total size, which is much larger than the one in Mexico.

6.1.3 Other transfers

Other transfers distribute progressively in both countries. In Mexico, the incidence of other transfers is 2.58 percent in the overall, and its impact in terms of incidence in the overall is the second lowest after MIA. On the other hand, it is the most effective tool to redistribute to the lowest income decile as its incidence there is higher than incidences of other fiscal tools. In Turkey, the overall incidence of other transfers is only 1.60 percent, which is the lowest incidence across the different fiscal tools. The incidence of other transfers for the first decile is 9.18 percent, which is not moderate and not very pronounced compared to that of the other fiscal tools.

Other transfers reduce income inequality and all poverty rates in both countries. Their impact is only moderate in the case of Turkey, while in Mexico it is the most effective tool in reducing poverty rates and the second most effective tool after income tax in terms of reducing inequality. This seems to be due to the poorly designed Mexican social security system and its small size compared to the Turkish system.

6.2 Comments and policy recommendations

This thesis aimed at revealing how taxes and transfers affect poverty and income inequality in in Mexico and Turkey. The fiscal systems in both countries seems to reduce both relative and absolute poverty as well as income inequality. However, as noted before, the income tax incidences calculated for both countries are "hypothetical", in the sense that they are based on statutory income tax obligations and ignores tax evasion. Whether the tax systems in Turkey and Mexico are in the overall progressive or regressive depends on how much of the statutory income tax obligations are evaded. That in turn will determine the actual progressivity of the

fiscal system in the overall. In other words, the extent the results of this thesis reflects the real case depends on the relative impact of the limitations arising from the assumptions made.

First, it is assumed that an individual is employed in the formal sector if the data show that he or she registered to any public social security institution. Along with the data on social security registration, Mexican HBS presents a variable that indicates where this registration originates from while there is no such variable in the Turkish HBS. Thus, in the Turkish case, people actually working in the informal sector but insured due to their dependents (for instance, their father/mother or wife/husband) are assumed as workers in the formal sector and paying their income taxes and social security contributions. We know that in 2014 the number of people employed in informal sector was about 9.5 millions (Turkish Statistical Institute [TURKSTAT], n.d.), while number of dependents are about 34 millions (Social Security Institution, [SSI], n.d.]. However, unfortunately, there is no macro level data on how many and which of those dependents are working in informal sector. Hence, it is not possible to calculate the size of such over-estimation in both Turkish and Mexican cases. Nevertheless, it can be speculated that the basic incentive for a dependent person to work in informal sector is to contribute to the household budget. That is to say that, dependents working in informal sectors are mostly from low or middle income groups so that income tax and SSC for these groups are overestimated in this thesis.

Second, if an individual earns less than the minimum wage income, he or she is assumed as working in the informal sector. However, this assumption ignores the income taxes and SSC paid by individuals who are formally employed but earning less than minimum income because they are part-time workers, which means an

underestimation. In Turkey, the share of part-time workers in total formal employment is about 1.5 percent (SSI, n.d.). In Mexico, there is no macro level data in terms of the share of part-time workers in formal employment, while it is known that the share of part-time workers in total employment (total of formal and informal employment) is 6.4 percent. However in both countries, we do not know the number or share of people that are working part-time in the formal sector and earn less than minimum income. Accordingly, as in the case of previous assumption, it is not possible to estimate the size of this underestimation in both Turkish and Mexican cases. On the other hand, it can be clearly said that part-time workers earning below the minimum wage are mostly in lower income groups. Hence, income tax and SSC for are underestimated for lower income deciles.

Third, income tax and SSC paid by public employees are calculated as in the case of private employees. Nevertheless, depending of their position and seniority, public employees do not pay income tax and SSC over some part of their income. It is known that the share of public employees over total employment is 12.86 percent and 11.78 percent in Turkey and Mexico, respectively, but there is no detailed data that shows or allows for estimating what proportion of their income are not subject to income tax and SSC. Despite the insufficiency of data, we can speculate that the incidence of income tax and SSC are overestimated in this thesis for middle income groups to which the state employees mostly belong to.

Fourth, it is assumed that the income declared by an individual is his or her official income, while in the real case the actual income might be more than the official income declared. Schneider and Buehn (2012) calculates the size of total tax evasion as a percentage of GDP for 2010 as 2.5 percent and 3.4 percent for Turkey and Mexico, respectively (Schneider & Buehn, 2012). However, this is not enough to

understand how much personal income tax is evaded by whom. As speculation, it can be suggested that in the real case richer people have more power to evade taxes.

Lastly, since there is no data on how the agriculture tax is paid, all agriculture incomes are assumed to be taxed based on an actual basis. This most likely leads to overestimation of income taxes and SSC paid by people earning agricultural income. However, this is expected to have a limited effect as the share of agriculture in GDP is 6.7 percent and 3.9 percent in Turkey and Mexico, respectively [Central Intelligence Agency [CIA] Factbook, n.d.).

Granting the limitations of the assumptions made above, estimations carried out here show that the social security system is more effective in Turkey than the tax system. In particular, social security transfers are the most effective tool for reducing both relative and absolute poverty and income inequality. On the contrary, in Mexico the tax system is more effective than the social security system, and the income tax has been the most effective means of reducing income inequality. On the other hand, other transfers are the most effective means of reducing poverty in Mexico. Comparing the effectiveness of the two countries' tax systems and social security systems, Turkey's performance is comparatively better in both in the overall, while other transfers stands out as the only tool that is more effective in Mexico than in Turkey.

The results provided here have implications for various issues debated in the global welfare state literature. As mentioned in the case selection chapter, Mexico and Turkey, together with several other countries, are included in the same cluster of countries that are called "informal security regimes" in terms of type of welfare state. It is true that both countries have high informality, but the results of this thesis reveal that these two countries are not very similar in terms of the design of part of their

fiscal systems related to welfare policies. As indicated above, Turkey has a better designed and much more effective social security system, and it is the most effective fiscal tool in terms of reducing inequality and poverty. Since social security payments are progressive and lead to significant improvements in the distribution of income, they are more likely to be social transfers in Turkish case. In addition, despite the large size of the informal sector, 83.7 percent of the society benefit from being secured by one of the social security institutions (SSI, n.d.). On the other hand, other transfers including conditional cash transfers are less effective. However, in Mexico other transfers including conditional cash transfers are much more effective than social security system. In fact, social security payments, which exhibit a regressive pattern, are more like returns to previous private capital savings rather than social transfers that have significant redistributive impacts. Moreover, only about 50 percent of Mexican citizens are insured by one of the social security institutions (Instituto Nacional de Estadística y Geografía [INEGI], n.d).

Despite the fact its tax system is not as well designed as that of Mexico, the fact that the Turkish tax system comes out as working more effectively in the calculations of this study allows the following two comments on the existing literature about developing countries. First, labelling Turkey as a social assistance country would be misleading, albeit not so for Mexico. In fact, even though its social security and tax systems are less developed than most of the OECD countries, Turkey is not a social assistance but a social security country. Second, even though they share common political, sociological and economic characteristics, Turkey and Mexico have different welfare state structures in terms of their design, size and effectiveness. Hence, the clustering of these two countries in the same category by the welfare state literature is misleading and should be reevaluated.

Based on the findings reported in the thesis and the observations made above the following comments are in order. The most imortant problem in Turkey's fiscal system is the very high share of consumption taxes that are very regressive. The large size of the informal economy and lack of effective tax auditing and collection leads to evasion of income taxes. Also, the VAT and SCT rates are not well designed. Although there are discounted rates for certain categories of goods, the vast majority of the basic consumption goods are subject to the basic VAT rate of 18 percent. In addition, although there are some exceptions, the SCT rates in general very high. For example, SCT for automobiles with the lowest engine volume in 2014 was 45 percent and together with the VAT the total taxes paid exceeded 70 percent of the total purchase price. Mexico does not have such an excise tax is not applied for vehicles up to a certain sale price, while the VAT paid is only at 16%. Such examples show the negative impact of consumption taxes particularly on middle-income groups in Turkey. The tax system in Turkey is in need of extensive structural reforms, and a one-dimensional solution will not be enough.

First of all, measures should be taken in order to reduce informality in employment, which is mostly seen in lower income groups. Even the minimum wage income falls in second tax bracket by the end of the year and certain portion of it gets taxed at 20 percent (the lowest rate is 15 percent). In other words, the distribution of tax brackets does not favor low and middle income groups. Besides, all wage earners pay 15 percent of their gross wage as SSC. As a result, a minimum wage income earner pays about 20% of his or her wage as income tax and SSC, even after the MIA is paid back. Since the gross wage paid by an employer for a minimum wage income employee is 1.5 times that of employee's net wage, there is a sizeable disincentive for both the employee and the employer to enter a formal contract. To avoid such

case, tax rates and SSC should be rearranged in favor of low income groups. More tax brackets at lower rates for lower income groups stand out as a possible solution to increase the progressivity of income taxes and counteract the regressivity of consumption taxes. Such a realignment will necessarily involve rearranging the income tax brackets that affect middle and high income groups.

Another reform should be carried out in the consumption tax system. VAT rates on all basic consumer goods can be zeroed as in the case of Mexico. Besides, special consumption tax rates must be lowered or eliminated in certain products, especially to protect middle-income groups. As a consequent of these reforms, regressiveness of consumption tax would be less and more equitable income distribution will be achieved through taxes.

In Mexico, main problems of the fiscal system are the poor design of the social security system and the low collection rate for personal income taxes. The social security system has a very low volume both in terms of its revenues (i.e. SSC) and outlays (i.e. SST). Revenues are low due to the low SSC rates paid for the retirement and the lack of collection of SSC due to high informality. On the other hand, since the pension system is designed as mandatory private pension, the collected premiums are accumulated in personal accounts and are evaluated in private funds. Thus, the repayment to those who pay more is relatively higher, and the system does not work equitably. Consequently, Mexico's social security system has a very limited impact on both poverty and income inequality. Serious structural reforms are needed to increase the long-term benefits of the system and reduce the poverty and inequality by increasing the income of the elderly.

Towards that aim, both employee and employer rates of SSC paid for pension should be increased. However, such reform might create more incentives for

informal employment. An employers' proportion of compulsory social security and housing allowances for employing workers who work for up to three times of the minimum wage exceeds 36 percent. Contributions paid for health are also high at 20.4 percent up to three times of the minimum wage (falling down to 1.1 percent afterwards) From this point of view, increasing pension premiums will further increase the cost for employers' of low-income workers and is likely to create a further disincentive for formal employment. In order to avoid this, the premium rates paid for health should also be reformed. The high rate paid up to three times of the minimum wages must be reduced, while a more reasonable is introduced to be paid on an equal basis for all incomes, or one that involves less premium paid for low income workers. This would create the right incentives for formal employment registration of low income groups. On the other hand, the defined contribution pension system, which links the individual benefits received to individual contributions made, should be transformed to a defined benefit system, that will decouple benefits and contributions in a way that will better alleviate poverty and inequality of income, especially for the pensioners. The cost of such a transformation will need to be compensated by increasing the premium rates.

As for the income tax system in Mexico, the income tax brackets and corresponding tax rates seem to have been designed much better compared to those of Turkey. There are only four tax brackets in Turkey, while there are 10 tax brackets in Mexico. Besides, the tax rates in Mexico starts at the low level 1.92 percent, while in Turkey the lowest tax rate is 15 percent. In Turkey a minimum wage earner pays his or her income tax at 15 percent, while in Mexico the tax rate for the minimum wage income is 6.4%. Despite all these facts, the informality in Mexico is as high as in Turkey (Medina and Schneider, 2018). Accordingly, it can be argued that the high

informality rate basically arises from high cost of insuring a low-income worker for employer rather than high rates of income tax. The social insurance system also creates a similar disincentive for the workers, who receives only a fractional benefit from the social security system. Hence, both the employee and the employer have a similar interest in trying to avoid formal employment, so the social security system will need to be reformed concomitantly along the lines mentioned above. Consequently, with increasing formal employment more income tax will be collected, while the insurance system will be strengthened by increasing the amount of SSC collected. The higher volume of both tax revenues and SSC collected will better allow the working of the current well-designed income tax system and the reformed social security system towards reducing poverty and income inequality.

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