Economics Bulletin

Volume 30, Issue 4

An evaluation of indirect taxes in Turkey

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Abstract

The share of indirect taxes in tax revenues, specifically consumption taxes, is quite high in Turkey when compared to other OECD economies. This emphasis on indirect taxes in Turkey, as well as other developing economies, is argued to emerge from the inability of the government to collect direct taxes because of the existence of a large informal sector that is not easily taxable. It has been suggested that the recent increase in the indirect taxes puts the burden on mostly the poor, raising concerns of inequality. This paper evaluates the efficiency of the current indirect taxes in Turkey by taking into account distributional concerns. Using data from the 2003 Household Budget Survey, we estimate elasticities of different consumption goods and services using AIDS method. We then perform a marginal tax reform analysis to assess the efficiency of indirect taxes. Our findings indicate that there is room for improvement and the current tax rates are not optimal.

We gratefully acknowledge financial support from Bogazici University Research Fund 08HC102.
Citation: Oya Pinar Ardic and Burcay Erus and Gurcan Soydan, (2010) "An evaluation of indirect taxes in Turkey", *Economics Bulletin*, Vol. 30 no.4 pp. 2787-2801.
Submitted: Jan 06 2010. **Published:** October 27, 2010.

1. Introduction

Indirect taxes in Turkey constitute a large proportion of total tax revenues: their share in tax revenues has steadily increased since the 1980s, and by 2008 has become 65%. At the same time, tax revenues as a share of GDP have increased from around 10% to around 20%. Figure 1 below depicts the evolution of the shares of direct and indirect taxes in total tax revenues.[1]

A casual look at the data suggests that indirect taxes, and specifically taxes on consumption goods and services, are extensive and come in a variety. Although in terms of VAT, Turkey is not much different from the OECD average (15.8% vs. 16.6% of total taxes, respectively) because of the extent of the other two types of taxes on consumption of specific goods, namely special consumption tax and special communication tax, consumption taxes constitute a significant share in tax revenues. Special consumption tax in Turkey was around 24% of tax revenues in 2006, while this share was around 11% on average for the OECD countries at the same time period.

This emphasis on indirect taxes in Turkey, and more specifically on taxes on consumption, can be argued to originate due to the inability of the government to collect direct taxes. An important characteristic of developing economies is the existence of a large informal sector that is not easily taxable. The size of the informal sector makes taxation difficult and costly, and especially so for direct taxes. Since administrative costs of tax collection in indirect taxes are lower than those in direct taxes, developing economies rely mostly on indirect taxes. It should also be noted that VAT reforms since 1970s (and in 1985 in Turkey) and various incentive mechanisms towards consumers to collect receipts for their purchases rendered indirect tax collection more efficient leading to increasing use of them in revenue generation by governments.

For example, Zenginobuz *et al.* (2006) report that in the aftermath of the 2001 crisis, the Turkish government, in pursuing fiscal tightening, relied increasingly on taxes on consumption to raise revenues. Furthermore, their findings indicate that the burden of these taxes have mostly been on the poor. For some consumption goods the taxes were so high that evasion became an attractive option but not at the same scale as evasion in income taxes.[2] In evaluating the results from this study together with the data presented above, an interesting and important question arises: how efficient is the current indirect tax system in Turkey and how does the marginal efficiency of taxes change with equity concerns? Hence, the purpose of this paper is to evaluate the marginal efficiency of indirect taxes in Turkey by taking into account distributional concerns. The obvious and most important outcome of indirect taxes

[1] See Bulutoglu and Thirsk (1997) for a detailed historical account of the Turkish tax system and tax reforms.

[2] According to a Turkish daily newspaper, in 2004 Ministry of Finance found tax evasion rates of 33% and 16% for income taxes and VAT respectively. (Radikal, May 2, 2006. http://www.radikal.com.tr/haber.php?haberno=186080)

is their effect on relative prices. As changes in relative prices have implications for the economy as a whole in terms of demand, production, tax revenues, and income distribution, ensuring the efficiency of the indirect tax system is crucial. The issue is of further importance once one considers ongoing efforts for a major structural reform in Turkish taxation system (see Ter-Minassian (2009), prepared for a seminar on tax reform by Ministry of Finance, for a discussion of challenges in tax reform for Turkey).

There is a vast empirical literature on the efficiency of indirect taxes.[3] For example, Nichele and Robin (1995) assess the consequences of two reforms in the French indirect tax system, namely VAT harmonization and carbon tax. Madden (1995) finds that there has been room for reform in the indirect tax system in Ireland in the 1980s. Liberati (2001) studies the distributional effects of changes in indirect taxes in Italy, and finds that a simple two-rate VAT structure is welfare-improving and revenue neutral. Kaplanoglou and Newbery (2003) assess the indirect tax system in Greece and conclude that a simpler tax structure is more equitable and more efficient. Munoz and Cho (2003) analyze the effects of introducing VAT in Ethiopia and compare it to the incidence of the earlier sales tax in effect. Kaplanoglou and Newbery (2008) analyze distributional impact of indirect taxation and three alternatives to the current system using data from Greece.

There are three major indirect tax types in Turkey: taxes on consumption goods and services, taxes on foreign trade and stamp tax. Among the three, taxes on consumption goods and services constitute about 66% of revenues from indirect taxes, i.e. 42% of total tax revenues as of 2008.[4] As the majority of tax revenues come from consumption taxes, they merit special attention. As mentioned above, consumption taxes are composed of value added tax (VAT), special consumption tax, and special communication tax. An 18% VAT is levied on all transactions involving consumption of goods and services, although reduced rates of 1% and 8% apply on certain items such as basic food, newspapers, etc. VAT has been in effect since 1985. Special consumption tax is levied on cigarettes, gas, energy, alcohol, cell phone services and luxury goods at various rates. In addition, the communication sector, i.e. cable radio and television, cell phone services and telecommunication, is subject to a special communication tax levied after the 1999 earthquake to cope with the large budget deficits of the time, which is still in effect. As of 2008, revenues from VAT, special consumption tax, and special communication tax amount to around 25%, 34%, and

[3]Ramsey (1927), Diamond and Mirrlees (1961) and Atkinson and Stiglitz (1971) are classical theoretical works in this area. Ray (1997) provides a review of both theoretical and empirical work until mid 1990s. There is a continuing stream of theoretical studies as exemplified by Kaplow (2006) and Belan *et al.* (2008).

[4]For further details on tax data, see the web site of the Revenue Administration: www.gib.gov.tr, and Revenue Administration's Activity Report for 2008 on the same web site.

4% of revenues from indirect taxes, respectively.[5]

The analysis of this paper follows a series of studies started by the seminal work of Ahmad and Stern (1991). Following Kaplanoglou and Newbery (2003), the paper estimates the marginal social cost of taxation for twelve groups of commodities. Using an iso-elastic social welfare function and addressing distributional concerns, we report results for various degrees of inequality aversion. Data from Household Budget Survey (HBS) of 2003 by TurkStat is utilized to estimate a demand system that eventually allows the computation of elasticities.[6] Using the same data set adjustments reflecting equity concerns are made and discussed. The results indicate that there is room for improvement in terms of efficiency of the indirect tax system in Turkey.

The rest of this paper is organized as follows. The next section discusses the methodology used in marginal tax reform analysis. Section 3 summarizes the current Turkish tax data and the data used in estimations. The fourth section describes the findings. A discussion of results and conclusion follows in section 5.

2. Methodology

In this section, we describe briefly the methodology we employ in tax reform analysis. In this setup, the government, or the fiscal authority, maximizes social welfare subject to the revenue constraint by addressing distributional concerns to find optimal tax rates on each commodity group. For further details, see Kaplanoglou and Newbery (2003).

Consider a model with $h = 1, ..., H$ households and $k = 1, ..., K$ goods. Let $\mathbf{p}$ be the vector of producer prices and $\mathbf{q}$ be the vector of consumer prices such that $\mathbf{q} = \mathbf{p} + \mathbf{t}$ where $\mathbf{t}$ is the vector of indirect taxes. Suppose further that $v^h(y^h + g, \mathbf{q})$ is the welfare of household h, where y^h is net income and g denotes transfers. $\mathbf{x}^h$ denotes the vector of demands by household h and $\mathbf{X}$, which is simply the sum of $\mathbf{x}^h$ over all h, is the aggregate demand vector. Finally, let $V \equiv W(v^1, v^2, ..., v^H)$ be a social welfare function.

The question, then, is as follows: What is the value of $\mathbf{t}$ that maximizes social welfare subject to a given level of tax revenues to be raised? Mathematically, this implies:

$$\max_{\mathbf{t}} \quad W(v^1, v^2, ..., v^H) \quad \text{subject to} \quad R(\mathbf{t}) = \mathbf{t}'\mathbf{X} \geq \bar{R} \tag{1}$$

[5]Note that although VAT is levied on almost all transactions and at a relatively high rate for almost all goods and services, it only constitutes 25% of indirect tax revenues while special consumption tax, which is levied only on luxury goods adds up to 34% of revenues from indirect taxes. However, note also that food has a very large budget share and a low VAT rate. This might, therefore, offer some explanation to revenues from VAT having a relatively low share in indirect tax revenues.

[6]The 2003 HBS is the first TurkStat had conducted since 1994. Although survey data from 2004, 2005 and 2006 were also available at the time of writing, neither is as detailed as 2003. See section 3 and footnote 10 for further details.

where $\bar{R}$ denotes required revenues.

Assuming producer prices do not change when taxes change, it is possible to derive the marginal social productivity of taxing good j. Since $\partial R/\partial t_j$ denotes the extra revenues generated by taxing good j by one more unit (of currency), and $-\partial W/\partial t_j$ denotes the loss in social welfare due to a one unit increase in taxes on good j, it is possible to define the *marginal social productivity* of tax j as

$$\theta_j \equiv -\frac{\partial R/\partial t_j}{\partial W/\partial t_j} \tag{2}$$

That is, θ_j shows the trade-off between benefits and costs of taxing good j. After some algebraic manipulation, it is possible to write (2) as

$$\theta_j = \frac{1}{d_j}\left[1 + \tau_j \varepsilon_{jj} + \sum_{k \neq j} \tau_k \frac{\omega_k \varepsilon_{kj}}{\omega_j}\right] \tag{3}$$

where

$$d_j \equiv \frac{\sum_h \beta^h x_j^h}{X_j} \tag{4}$$

ω_j is the budget share of good j and β^h is the social marginal utility of income–and transfers–to household h.[7] In this regard, it is possible to interpret d_j as the degree of concentration of the consumption of good j on those with high values of β^h, i.e. the poor.

Hence, the marginal social productivity of tax j depends inversely on d_j, and positively on own-price and cross-price elasticities. It is possible to interpret $1/d_j$ as the tax appeal of good j. For example, if the absolute value of own-price elasticity is high for good j, the distortionary cost of tax is higher. But distributional concerns in the form of a high d_j in this case offsets this distortionary effect.

At this point, we assume an iso-elastic social welfare as introduced by Atkinson (1973):

$$W = \begin{cases} \frac{1}{1-\gamma}\sum_{h=1}^{H} \pi^h (v^h)^{1-\gamma} & ,\gamma \neq 1, \gamma > 0 \\ \sum_{h=1}^{H} \ln v^h & ,\gamma = 1 \end{cases} \tag{5}$$

where π^h is the share of group h in the population, and γ is the coefficient of inequality

[7] β^h is calculated as $\beta^h = \frac{\partial W}{\partial v^h}\alpha^h$, where $\alpha^h = \frac{\partial v^h}{\partial (y^h + g)}$ is the private marginal utility of income to household h so that $\partial W/\partial t_j = -\sum_h \beta^h x_j^h$.

aversion. With this specification,

$$-\frac{\partial W}{\partial t_j} = \sum_{h=1}^{H} \pi^h (v^h)^{-\gamma} \alpha^h x_j^h$$

and

$$\beta^h = \pi^h (v^h)^{-\gamma} \alpha^h$$

where we approximate β^h by $(c^h)^{-\gamma}$. Thus, a higher γ implies a higher concern of inequality by the government, and $\gamma = 0$ indicates no inequality aversion. [8].

Using household level data and AIDS estimation methodology of Deaton and Muellbauer (1980), it is possible to estimate own-price and cross-price elasticities of commodity groups.[9] Then, under various degrees of inequality aversion, i.e. for various values of γ, it is possible to calculate θ_j, $j = 1, ..., K$. It will then be possible to rank these commodity groups from the least taxable to the most taxable: the lower the value of θ_j is, the lower the tax productivity of good j will be. Hence, tax tare on good j should be lower.

3. Data

For the analysis we use the set of elasticity estimates calculated using the Almost Ideal Demand System (AIDS) methodology of Deaton and Muellbauer (1980).[10] Estimation is based on the data from Household Budget Survey 2003 (HBS 2003) conducted by the Turkish Statistical Institute (TurkStat).[11] The HBS 2003 is a survey

[8]It is also possible to use indirect utility calculations from AIDS estimation. Most empirical studies do use $(c^h)^{-\gamma}$ and for the sake of comparability with those studies we prefer to use the calculations where beta is approximated by $(c^h)^{-\gamma}$

[9]Note that one may need to modify the AIDS method proposed by Deaton and Muellbauer slightly when using data from a household budget survey. Consider the following situation where household i does not consume good j at the time of data collection. This may not be because household i does not prefer to consume good j, but simply because household i does not need to consume good j at the time of data collection. This is a typical example of a censored regression and requires a two-stage estimation. To correct for potential biases that may arise as a result, we use the two-stage estimation method proposed by Shonkwiler and Yen (1999). For space considerations, further details are not included here. See Ardic *et al.* (2010) for the details on estimation methodology.

[10]Regression R^2 values range from 10.24 to 46.6. Estimated coefficients are usually significant and control variables are of the expected sign. Several control variables to account for socio-economic characteristics of the households are added to both the first and the second stage estimations. For example, household size, age and education level of household head, and seasonal, urban and regional differences are controlled for as well as some variables relevant for specific commodity groups, such as private car ownership dummy for demand for transportation services. See Ardic *et al.* (2010) for further details.

[11]While more recent surveys (2004, 2005, and 2006) are also available, the one in 2003 is based on

of a representative random sample of all private households in Turkey. From January 2003 to December 2003, a total of 25,920 households were surveyed (1512 households from urban and 648 households from rural areas per month). Excluding those who quit, the survey results in a total sample of 25,764 households.

The survey data report monthly expenditures of households. Household expenditures on goods and services are coded under 198 categories and then these expenditures are aggregated under 12 major commodity groups based on COICOP (Classification of Individual Consumption by Purpose) system. The analysis uses variation in prices across NUTS2 level regions as well as months of the year to estimate elasticities.[12] Table 1 presents these commodity groups along with own price and income elasticities, indirect tax rates, and the budget shares calculated from HBS 2003.[13] The figures are as expected. Food, clothing, health are among the categories with low elasticity. Transportation has one of the lowest elasticities, possibly reflecting the fact that the elasticity estimates are obtained from data covering one year only. Recreation and culture has the highest elasticity along with furnishing and house maintenance which covers big ticket items. Alcoholic beverages and tobacco is highly inelastic, possibly due to prevalence of tobacco addiction.

The other important component of the marginal tax reform analysis is the weighted average indirect tax rates pertaining to the 12 commodity aggregates. Value-Added-Tax, Special Consumption Tax, Special Communication Tax and Gambling Tax are the indirect taxes on commodities that are taken into account when calculating the tax rates from the relevant resolutions of the Council of Ministers and codes. They are weighted according to the budget shares of these classifications within their group in the Household Budget Survey. The average tax rates for the commodity groups, thus found, are also given in Table 1. Alcohol and tobacco, transportation, and communication are very heavily taxed in Turkey. Food, health, and education are the least taxed categories.[14]

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a much larger sample (about three times larger than the surveys in the following years). Moreover, later surveys do not disclose the month in which a household is surveyed, information necessary to measure variation in prices. TurkStat does not publicly disclose the data on region and month. However, we are able to obtain the information on region and month of the year that an observation belongs to from HBS 2003 by matching the inflation adjustment factor (the factor to inflate the income) in the data with regional monthly inflation figures from TurkStat (CPI index for urban and rural general price levels). In the later years this was not possible because inflation levels are relatively low and does not allow us to differentiate across different months and regions of the year.

[12]NUTS (Nomenclature of Statistical Territorial Units) is a territorial classification system of data collection developed by Eurostat in the beginning of the 1970s in order to achieve coherence and uniformity in regional data collection throughout the European Union. This is a hierarchical system with three levels. Turkish Statistics Institute (Turkstat) conducts household surveys based on sampling by NUTS2 classification. There are 26 NUTS2 regions in Turkey, while the total number of provinces is 81. See footnote 5 on identification of household location and month of the survey.

[13]See Ardic *et al.* (2010) for all elasticities and standard errors obtained using bootstrap.

[14]In Turkey health care and education are publicly provided free of charge. In 2003 private

4. Results

Table 2 below summarizes the results of the marginal tax reform analysis based on the elasticity estimates in Table 1 and Ardic *et al.* (2010).[15] The analysis is performed for different levels of inequality aversion. Specifically, the values of the parameter γ used are 0, 2, and 5. For each inequality aversion level, we present the distributional characteristic of each category, d, and the marginal social productivity of tax, θ. The goods and services are ranked from the least taxable to the most in each γ category.

The differences in tax appeal indicates that there is room for improvement in tax rates. For $\gamma = 0$, meaning no concern for equity (and same distributional coefficient for all categories), we find the most likely candidates for higher taxation to be housing, alcoholic beverage and tobacco, and recreational activities. Hotel and restaurant expenditures, food, and furnishing follow these categories. Healthcare, clothing, and others categories are those that are the least desirable for taxation.[16] Transportation, communication, and education follow these. The difference in the cost of taxation is rather small. Our results are similar to Madden (1995) and Kaplanoglou and Newbery (2003) who find small differences across goods and services in terms of cost of taxation. Goods that are candidates for higher taxes differ significantly from the results for Greece (Kaplanoglou and Newbery, 2003) where tobacco and recreation turn out to be the least desirable for a marginal tax increase. On the other hand our results are in line with Irish case (Madden, 1995). As noted many times in the earlier literature, the results should be considered with caution considering theoretical issues in elasticity estimation and optimal tax calculations.

Given the results with no inequality concern, we can now focus on the impact of the distributional concerns on rankings. Table 2 also displays the results for $\gamma = 2$ and $\gamma = 5$. As may be expected, food, housing, and alcohol and tobacco categories, which

expenditures were about 2% and 28% of total expenditures in education and in health respectively. Health expenditures consisted, mostly, of payments to private providers and informal payments to public providers. Public and private sector were rather segregated markets in 2003, latter appealing to wealthier households and resulting in an elasticity figure close to zero since health is a necessity. Private provision of education was rather limited in 2003. Expenditures on education generally include bulky items at school start, such as stationary, books, school uniform and others, which are done out of household budget. Hence are elasticity estimate for education relates to these goods.

[15] The entire set of estimated elasticities–own price, cross price and income–are tabulated in Table 3 along with standard errors.

[16] θ for health category is negative. This implies decrease in tax revenues with further tax on health. Madden (1995) report such finding for tobacco under some demand specifications with Irish data and interprets it as a commodity specific Laffer effect. In our case this results from large values for cross-price elasticities. Health has a negative cross-price elasticity with transportation, which is heavily taxed, and positive cross-price elasticity with food, which is taxed at lower rates. Large share of public providers and informal payments in health may have resulted in those figures. Hence the results regarding healthcare should be taken cautiously.

constitute necessities, become less desirable to be taxed.[17] In line with our results, health and food are among the least taxed items currently (at about 8%). Alcohol and tobacco, on the other hand are heavily taxed. It is clear from our results that these taxes constitute a big burden for lower income households. It should also be noted, however, that our results do not take into consideration health hazards related to tobacco consumption, neither negative externalities on non-smokers. In the housing and utilities category, taxes are rather large, about 19%. Housing and especially utilities could constitute an area where a reduction in taxes may be considered for equity purposes.

On the other hand furnishing, transportation, and education are now ranked higher with greater equity consideration. It should be noted that education is provided for free to a large part of population in Turkey and private schools and other educational activities are mostly used by wealthier households. Hence, an increase in taxation is not of a big concern for poor households. However, private schools are argued to take some of the burden from government and allow it to provide more resources to the rest of population. Whether this justifies a rather low tax rate of 8% is left for further studies. In transportation the tax rates are already high at about 40% level and in furnishing tax rates are higher than many other categories.

For other categories we do not observe much of a change in the rankings. Recreation and culture is still among the leading candidates for taxing and health ranks the last for taxation.

5. Conclusion

This paper aims to evaluate the indirect taxes in effect in Turkey using data from the 2003 Household Budget Survey. After estimating elasticities for twelve commodity groups using AIDS methodology of Deaton and Muellbauer (1980), we follow Kaplanoglou and Newbery (2003) to conduct a marginal tax reform analysis. When there is no concern for inequality, we find the most likely candidates for higher taxation to be housing, alcoholic beverage and tobacco, and recreational activities while healthcare and clothing are those that are the least desirable for taxation. Once inequality aversion is inserted, food, housing, and alcohol and tobacco categories, which constitute necessities, become less desirable to be taxed while recreation, education and furnishings are the categories for which higher taxes are called.

At this point, we would like to note that our analysis is subject to usual caveats of indirect tax reform studies. We assume competitive markets and disregard tax evasion, an important characteristic of developing countries. Furthermore, the analysis considers indirect taxes in isolation. It is clear that the system as a whole should be investigated for a thorough investigation of the efficiency of taxes, including direct

[17] Alcohol and tobacco category is heavily dominated by tobacco which is very widely used in Turkey especially in lower income brackets.

taxes and institutional conditions. We would like to note, however, that it is still beneficial to evaluate the indirect taxes since they are easier to change and are in fact often subject to change in Turkey.

An even more important caveat is the tax evasion which is prevalent in Turkey. The analysis implicitly assumes away tax evasion. If it took place differentially across the goods, marginal optimality would be miscalculated since official tax rates that are used in the analysis would differ from the actual rates. Furthermore, if tax evasion does also differ across households with different income levels, distributional concerns may not be properly reflected in the results. Unfortunately data is lacking on tax evasion and we leave analysis of tax evasion and efficiency of indirect taxes for further studies.

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Figures

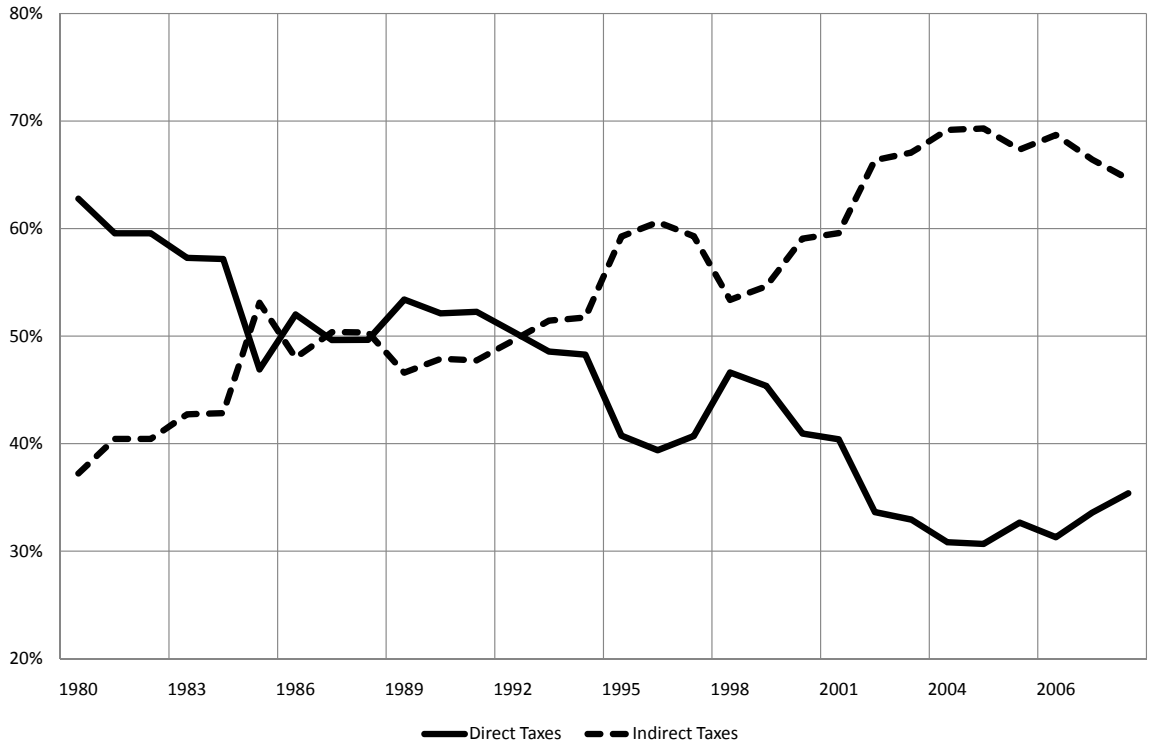

Figure 1: Share of Direct Taxes and Indirect Taxes in Tax Revenues: 1923 - 2009
Source: Revenue Administration (www.gib.gov.tr)

Tables

Aggregate Commodity Groups	Aggregate Budget Shares	Average Indirect Tax Rates	Own Price Elasticities	Expenditure Elasticities
Food and Non-Alcoholic Beverages	28.50%	8.50%	-0.57	0.75
Alcoholic Beverages and Tobacco	4.30%	83.70%	-0.11	0.69
Clothing and Footwear	6.30%	15.40%	-0.13	1.2
Housing, Water, Gas, Electricity & Other Fuels	27.90%	19.00%	-0.74	0.86
Furnishing, House Maintenance & Equipment	5.80%	19.30%	-1.65	1.84
Health	2.10%	8.30%	-0.05	1.73
Transportation	9.50%	41.70%	-0.06	1.45
Communication	4.30%	39.40%	-1.06	0.92
Recreation and Culture	2.00%	16.50%	-2.05	1.14
Education	1.80%	8.00%	-0.68	0.9
Hotels, Cafes, Restaurants	4.00%	18.00%	-0.87	0.66
Other Goods and Services	3.50%	20.80%	-0.46	1.41

Table 1: Elasticities, average budget shares and average indirect taxes

$\gamma = 0$			$\gamma = 2$			$\gamma = 5$		
Categories	d	θ	Categories	d	θ	Categories	d	θ
Health	1	-0.11	Health	0.32	-0.33	Health	0.02	-4.94
Other	1	0.36	Other	0.31	1.17	Housing	0.14	6.21
Clothing	1	0.51	Food & Beverages	0.69	1.26	Food & Beverages	0.08	10.74
Transportation	1	0.62	Clothing	0.35	1.45	Other	0.03	12.11
Communication	1	0.67	Communication	0.40	1.67	Hotels, Restaurants	0.05	16.28
Education	1	0.71	Alcohol & Tobacco	0.61	1.67	Alcohol & Tobacco	0.04	23.00
Furnishing	1	0.78	Housing	0.48	1.86	Communication	0.02	29.11
Food & beverages	1	0.86	Hotels, Restaurants	0.36	2.39	Clothing	0.02	32.24
Hotels, restaurants	1	0.87	Transportation	0.26	2.43	Transportation	0.01	63.24
Housing	1	0.89	Furnishing	0.30	2.60	Furnishing	0.01	73.53
Alcohol & Tobacco	1	1.02	Recreation & Culture	0.22	4.95	Recreation & Culture	0.01	135.71
Recreation & Culture	1	1.09	Education	0.14	5.23	Education	0.00	1253.20

Table 2: Distributional characteristics, d, and marginal revenue cost, θ

	Food	Alcoholic Beverages	Clothing	Housing	Furniture	Health	Transport	Communication	Recreation	Education	Hotel	Other	Income Elasticity
Food	-0.57***	-0.18***	0.10	-0.23*	-0.11	0.53***	0.42***	-0.05	-0.23***	-0.23***	-0.21***	0.02	0.75***
	(0.12)	(0.06)	(0.06)	(0.12)	(0.11)	(0.08)	(0.10)	(0.06)	(0.06)	(0.05)	(0.07)	(0.05)	(0.01)
Alcoholic	-0.75***	-0.11	-0.72***	1.26***	-0.44	0.14	-0.07	0.46**	0.06	-0.39**	-0.10	-0.17	0.69***
Beverages	(0.25)	(0.20)	(0.19)	(0.32)	(0.33)	(0.23)	(0.33)	(0.20)	(0.24)	(0.16)	(0.23)	(0.22)	(0.04)
Clothing	0.24	-0.61***	-0.13	-0.67***	0.27	-0.24	0.29	-0.21	-0.29**	0.15	-0.27*	0.29**	1.20***
	(0.21)	(0.16)	(0.20)	(0.24)	(0.22)	(0.17)	(0.22)	(0.13)	(0.13)	(0.12)	(0.16)	(0.12)	(0.03)
Housing	-0.26**	0.33***	-0.20***	-0.74***	0.04	-0.35***	-0.30**	-0.13	0.08	0.27***	0.40***	0.10*	0.86***
	(0.12)	(0.08)	(0.08)	(0.20)	(0.18)	(0.10)	(0.13)	(0.10)	(0.10)	(0.06)	(0.09)	(0.06)	(0.01)
Furniture	-0.61	-0.55	0.34	0.09	-1.65	-0.87*	-0.31	1.06*	0.90*	0.08	0.10	-0.18	1.84***
	(0.46)	(0.36)	(0.30)	(0.75)	(1.27)	(0.46)	(0.62)	(0.59)	(0.48)	(0.25)	(0.42)	(0.47)	(0.04)
Health	2.93***	0.17	-0.41	-1.95***	-1.07*	-0.05	-1.60***	0.27	0.90***	-1.45***	0.39	0.70**	1.73***
	(0.48)	(0.33)	(0.30)	(0.58)	(0.60)	(0.54)	(0.52)	(0.37)	(0.34)	(0.32)	(0.32)	(0.34)	(0.08)
Transport	0.88***	-0.09	0.18	-0.75**	-0.18	-0.70***	-0.06	-0.41**	-0.16	0.18	-0.07	-0.34*	1.45***
	(0.24)	(0.19)	(0.16)	(0.30)	(0.33)	(0.21)	(0.36)	(0.20)	(0.22)	(0.14)	(0.19)	(0.18)	(0.02)
Communication	-0.35	0.61**	-0.33	-0.71	1.38*	0.28	-0.86*	-1.06	0.47	-0.38**	0.07	-0.09	0.92***
	(0.32)	(0.28)	(0.22)	(0.53)	(0.73)	(0.35)	(0.46)	(0.67)	(0.38)	(0.18)	(0.33)	(0.37)	(0.02)
Recreation	-1.82***	0.09	-0.68**	0.57	1.69**	1.27***	-0.40	0.68	-2.05***	0.17	-0.36	-0.21	1.14***
	(0.50)	(0.48)	(0.32)	(0.75)	(0.84)	(0.47)	(0.75)	(0.55)	(0.62)	(0.34)	(0.47)	(0.45)	(0.06)
Education	-0.38***	-0.17**	0.09	0.43***	0.05	-0.42***	0.16	-0.11**	0.04	-0.68***	0.03	0.00	0.90***
	(0.09)	(0.07)	(0.06)	(0.09)	(0.10)	(0.10)	(0.10)	(0.06)	(0.07)	(0.08)	(0.07)	(0.07)	(0.05)
Hotel	-1.01***	-0.13	-0.36	1.79***	0.18	0.35	-0.04	0.07	-0.20	0.08	-0.87**	-0.70***	0.66***
	(0.33)	(0.27)	(0.23)	(0.43)	(0.45)	(0.27)	(0.37)	(0.29)	(0.28)	(0.18)	(0.37)	(0.26)	(0.03)
Other	0.05	-0.34	0.65**	0.63	-0.22	0.86**	-0.89*	-0.13	-0.20	-0.04	-1.08***	-0.46	1.41***
	(0.33)	(0.38)	(0.26)	(0.39)	(0.74)	(0.41)	(0.53)	(0.47)	(0.39)	(0.28)	(0.39)	(0.58)	(0.04)

Table 3: Elasticities.