THE EFFECTS OF VALUE ADDED TAX ON THE TURKISH ECONOMY

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Summary: Value Added Tax (VAT) has been introduced as a general consumption tax to replace different consumption taxes in many countries. The Turkish VAT was introduced to replace (mainly) production tax on 1st January 1985. It is a tax imposed on the value added to a product at each stage of the production and distribution process. Value added is never taxed twice under VAT and thus cascading (tax on tax) effect does not occur. VAT is a comprehensive tax which covers almost all goods and services, including imported goods and services, except for those which are specifically exempt. Like any other consumption tax, VAT has some effects on prices, resource allocations, income distribution, international trade and investment. This article attempts to analyse the effects of VAT on the Turkish economy.

I. Introduction

Taxes are levied by the governments not only to meet their spending requirements, but also for achieving income and/or wealth distribution objectives and resource allocation. Particularly, indirect taxes have significant effects on the resource allocations and income distribution because they may lead some commodities to become more expensive relative to others and to reduce some individual's disposable incomes. Thus, they may distort economic choice of both consumers and producers in the economy.

The objective of this paper is to analyse the effects of VAT on the Turkish economy in detail; the effects of VAT on prices, resource allocation, income distribution, investment and international trade. Final section presents summary and concluding remarks.

II. The Effects of VAT on the Turkish Economy

A. The Effect of VAT on Prices

The effect of VAT on prices is different depending upon the taxes which the VAT replaces or supplements. If VAT is introduced as a substitute for another general consumption tax (i.e. cascade turnover tax) and to provide equal yield, it cannot create a continuing increase in the general price level; however, it may cause changes in relative prices.

If VAT is designed to increase revenue, it may have an anti-inflationary effect because of reducing consumption and total demand for goods and services. In addition, increased revenue can be used by the government to

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finance a budget deficit so that the government does not need to borrow and/or print money. In fact, the real reason for inflation is not that the government collects taxes, but that the government makes expenditures. If the government increases total expenditure, other things being equal, the aggregate demand will increase more than the aggregate supply in the economy. Eventually, this causes inflation. Despite this general economic principle, it can be argued whether VAT is partially responsible for the inflation or not. However, it is really difficult to determine how much of the change in inflation rate is attributable to the introduction of VAT or the changes in the tax rates.

Tait (1988, 1990, 1991) collected empirical evidence about the effect of VAT on consumer price index (CPI) in several countries before and after the introduction of VAT. He tested four hypotheses: (1) little or no price effect; (2) shift in the CPI trend line (a one time price effect); (3) acceleration; and (4) shift plus acceleration. He examined the movements in consumer price indices, credit and wages to show the price effects of VAT: the effect on prices of the introduction of VAT for thirty five countries, and the price effects of the changes in VAT rates for six countries (Tait, 1988). His results for thirty five countries in relation to the introduction of VAT showed the following:

(1) There was little effect of the introduction of VAT on the CPI in twenty two countries;

(2) The VAT caused a shift in the trend of CPI (a one time price effect) in seven countries;

(3) The VAT contributed to an acceleration in the rate of inflation in five countries; however this was associated in each case with expansionary wage and credit polices;

(4) The VAT created a shift and an acceleration in only one country.

Furthermore, examination of changes in VAT rates for six countries does not suggest any automatic connection between VAT rates and the rates of CPI: There is only one country associated with an acceleration of inflation and one country with a shift in the CPI and another four countries with little or no effect on prices (Tait, 1988; 1991). Tait (1991) concluded that there seems to be no precise relationship between the introduction of VAT and inflation since there was a shift and little or no effect of VAT in thirty three out of forty one cases (over 80 percent).

If the wages or salaries are increased in co-ordination with the prices and if the prices continue to increase following the upgrading of the wages, there will be a price-wage spiral. Tait (1991: 9) suggested that "price controls can be used effectively to dampen the potential price-wage acceleration of inflation after the introduction of VAT as the examples of Austria, France, Korea, the Netherlands and Norway show". Tait's examination of the result for Turkey about the introduction of VAT effects on prices is that the VAT created a shift (10 percent and only one time price effect) in the trend of CPI although there was excessive credit creation (Tait, 1988; 1990).

The regression analysis is done to test the relationship between inflation rate (CPI) and the introduction of VAT and the changes in the tax rates in Turkey. The analysis has been based on monthly data, starting from January 1982 to December 1995. The results show that no statistically significant relationship can be detected between inflation rate and introduction of VAT or the changes in the tax rates. (For details of the analysis see Appendix). Although there is a slight relationship between inflation rate and time, however, it is not clear how much of that increase in that period was due to VAT.

VAT has replaced mainly the production tax in Turkey. Before the introduction of VAT, the production tax was applied at 20 percent on some commodities, such as ceramics and glass. The VAT rate was initially at 10 percent on all goods and services in 1985. It caused changes in relative prices; however, it cannot be stated that the introduction of VAT contributed to the continuing inflation since other causes have more effects on the inflation in Turkey. These are:

(1) Large budget deficits and excessive money supply;

(2) Continuous and parallel price increases by the firms in oligopolistic markets;

(3) Inflationary expectation further provoking consumption;

(4) Imported inputs continuing to be more expensive because of the frequent devaluation of the Turkish lira.

If these four variables were included in our analysis we would get much better results.

B. The Effect of VAT on Resource Allocation

Before the introduction of VAT, most services and agricultural products were not covered within the scope of the Turkish indirect tax system and indirect taxes were also mainly centred around preliminary materials, intermediary goods and processed goods of the industrial sector. As can be seen table 1, while the share of agriculture in the Turkish Gross Domestic Product (GDP) was approximately 20 percent, that of industry was about 23 percent in 1984. After the introduction of VAT, all sectors in the economy were included within the scope of the VAT system. As a result of this process, the share of industry in GDP increased to about 27 percent in 1993 whereas that of agriculture reduced to about 15 percent. This suggests that resources have moved from agriculture to the industry sector during that period. However, the use of multiple rates with a large number of exemptions in the Turkish VAT system distorts resource allocation since multiple rates and exemptions lead some commodities to become more expensive relative to others. In the long run, this may distort resource allocation because the production resources can move to the production of the goods exempted from the tax or taxed at lower rates. To

minimise distortion effects on the resource allocation, single rate with limited exemptions can be used.

Table 1. *The Shares of Sectors in the Turkish GDP between 1984 and 1993*

Years	Agriculture	Industry	Services
1984	20.3	23.2	56.5
1985	19.4	23.7	56.9
1986	18.8	25.1	56.1
1987	17.2	25.0	57.8
1988	18.2	25.0	56.8
1989	16.8	26.2	57.0
1990	16.4	26.2	57.4
1991	16.2	26.7	57.1
1992	15.9	26.8	57.3
1993	14.6	26.9	58.5

Source: State Institute of Statistics, 1994: Table 6.2.

C. The Effect of VAT on Income Distribution

VAT can be used as an effective instrument of fiscal policy to achieve more equitable income distribution between individuals. Multiple rates and exemptions can be used in the VAT system to redistribute income between individuals by taxing luxury goods more heavily and by exempting or taxing necessities at a lower rate. Most countries, having VAT, apply more than one positive rate and exemptions for some goods and services to achieve more equitable income distribution. However, it is difficult to say that all luxury goods are purchased by the rich and all necessities are purchased by the poor. The rich can purchase some necessities and the poor can purchase some luxuries. Furthermore, to achieve more equitable income distribution with the tax system is likely to conflict with other objectives such as economic efficiency. The use of multiple rates with exemptions in the VAT system contributes to a fairer income distribution but this distorts resource allocation in the economy. Also, differentiated rates with exemptions may increase administrative and compliance costs of the tax because of the need for special records for the purchases and sales of differentially taxed products.

Table 2. *The Income Distribution in Turkey*

Years	Lowest 20%	Second Quintile	Third Quintile	Forth Quintile	Highest 20%	Ratio of Highest/Lowest Quintile
1983	3,50	8.00	12,50	19,50	56,50	16,14
1986	3,90	8,40	12,60	19,20	55,90	14,33
1987	5,24	9,61	14,06	21,15	49,94	9,53
1994	4,86	8,63	12,61	19,03	54,88	12,29

Sources: Kuyucuklu, 1993: Tables 27, 28; State Institute of Statistics, 1998: Table 416.

Table 2 presents the income distribution in Turkey for four different years. Before the introduction of VAT (in 1983), the poorest 20 percent of the population shared 3.5 percent of total income whereas the richest 20 percent shared 56.5 percent of total income. After the introduction of VAT, income distribution is slightly more equal (in 1986) than before the introduction of VAT (in 1983) because the ratio of highest / lowest quintile decreased from 16 percent to 14 percent. After employing multiple rates in the Turkish VAT system on December 1986, the poorest of the population shared more than 5 percent while the richest of population shared less than half of total income in 1987. Moreover, the income distribution is more equal when employing a single rate of VAT since the ratio of highest / lowest quintile decreased from 14 to 9.5 percent in 1987 and 12 percent in 1994. However, it is difficult to determine the actual effect of VAT on income distribution because income distribution is also affected more by some other variables such as the transfer expenditures by the government and the use of a progressive rate schedule and tax allowances in the income tax system.

D. The Effect of VAT on Investment and International Trade

The consumption type VAT was adopted on 1st January 1999 in Turkey because this type of VAT is more favourable to encourage investment than the income type VAT. The credit method of VAT encourages investment and thus contributes to economic development. Additionally, VAT reduces consumption whereas it increases savings. Increased savings lead the interest rate to reduce and thus this encourages investment. If such savings can be used in investment, economic development can be improved. Table 1 shows that after the introduction of VAT, the share of industry in GDP increased from 23 percent in 1984 to about 27 percent in 1993. However, it is not clear exactly how much of the increase in the share of industry is due to the use of the tax credit in the VAT system.

Moreover, the development in industry contributed to exports. Table 3 shows the shares of main sectors in total exports. It can be seen from the table that while the share of agriculture in total exports reduced from 24.5 percent in

1984 to 15 percent in 1992, that of industry increased from 72 to about 83 percent in the same years.

Table 3. *The Shares of Main Sectors in the Total Exports in Turkey between 1984 and 1992*

Years	Agriculture	Mining	Industry
1984	24.5	3.4	72.1
1985	21.6	3.1	75.3
1986	25.3	3.3	71.4
1987	18.2	2.7	79.1
1988	20.1	3.2	76.7
1989	18.2	3.6	78.2
1990	18.4	2.6	79.0
1991	20.1	2.1	77.8
1992	15.3	1.8	82.9

Source: State Institute of Statistics, 1993: Table 15.3.

In Turkey, the use of a fully rebated tax system on exports encourages exporters to export more, thereby improving the balance of payments on current account. On the other hand, imports are subject to VAT just as domestically produced goods therefore neutrality between domestic and imported goods is achieved. As can be seen in table 4, the ratio of exports to imports increased from 66 percent in 1984 to 81 percent in 1988. However, this ratio reduced to about 64 percent in 1992. While the percentage of imports in GDP reduced from 19 percent in 1984 to 16 percent in

Table 4. *Development of Imports and Exports in Turkey between 1984 and 1992*

Years	Percentage change in Imports	Percentage change in Exports	Ratio of export to Imports	Share of Imports in GDP	Shares of Exports in GDP
1984	16.5	24.5	66.3	19.2	12.4
1985	5.5	11.6	70.2	18.1	12.5
1986	-2.1	-6.3	67.1	15.9	10.5
1987	27.5	36.7	72.0	18.0	12.9
1988	1.3	14.4	81.4	17.2	14.1
1989	10.2	-0.3	73.6	16.1	11.8
1990	41.2	11.5	58.1	16.4	9.5
1991	-5.6	4.9	64.6	15.5	10.0
1992	8.7	8.2	63.8	16.0	10.2

Sources: Derived from State Institute of Statistics, 1994: Table 5.2; State Institute of Statistics, 1996: Table 335

1992, that of exports in GDP increased from 12 percent in 1984 to 14 percent in 1988, however, this proportion reduced to 10 percent in 1992. It can be seen from the table that the percentage of imports in GDP reduced during the period whereas that of exports increased until 1988 but thereafter reduced. The use of the fully rebated tax system contributed balance of payments on current accounts until 1988. However, it is difficult to estimate the share of VAT rebates on the development of the balance of payments on current account because the application of other economic policies (i.e. devaluation) has had a bigger effect.

III. Summary and Concluding Remarks

Like any other consumption tax, VAT has some effects on prices, income distribution, resource allocations, investment and international trade. It is difficult to attribute the change in prices to VAT since prices are affected more by many other variables (i.e. large budget deficit, excessive money supply) than VAT. Turkey has always had a budget deficit and excessive money supply problems. These economic problems are more effective on prices than VAT in Turkey. VAT has encouraged investment in Turkey because capital goods were previously subject to the production tax. An increase in investment has contributed to increase not only the share of industry in GDP but also to economic development. Turkey adopted the consumption type VAT on 1st January 1999 because this type of VAT is more favourable to encourage investment than the income type VAT. Additionally, the use of a fully rebated tax system on exports has encouraged exporters to export more, thereby improving the balance of payments on current account.

If a single rate without any exemptions is applied on all goods and services, VAT tends to be regressive, because it takes a relatively higher proportion of poor people's incomes than that of rich people's incomes. Multiple rates with exemptions can be used to minimise regressivity by taxing luxuries more heavily and by exempting or taxing necessities at a lower rate. However, they not only distort resource allocations but also increase administrative and compliance costs because of the need of separate records for the sales of differentially taxed products. In Turkey, multiple rates with a large number of exemptions tend to positively influence income distribution but they distort resource allocations and increase administrative and compliance costs. There should be as few rates as possible so that distortion effects of the tax and administrative and compliance costs can be minimised.

Özet: Katma Değer Vergisi (KDV), bir çok ülkede uygulanan çeşitli tüketim vergileri yerine genel bir tüketim vergisi olarak uygulamaya konmuştur. Türk KDV'si (başlıca) İstihsal Vergisi yerine 1 Ocak 1985 tarihinde uygulanmaya başlamıştır. KDV, bir malın üretilmesi ve dağıtılmasının her aşamasında yaratılan katma değer üzerinden alınan bir vergidir. KDV'de, katma değer asla iki kez vergilendirilmez dolayısıyla şelale (vergi üzerine vergi) etkisi de olmaz. KDV kapsamlı bir vergi olarak tüm mal ve hizmetleri (ithal edilenler dahil) vergilendirirken özellikle istisna tutulan mal ve hizmetleri vergilendirmez. Diğer tüketim vergileri gibi, KDV'nin de fiyatlar, gelir

dağılımı, kaynak ayırımı, yatırım ve uluslararası ticaret üzerinde bazı etkileri vardır. Bu makale, KDV'nin Türk ekonomisi üzerindeki etkilerini analiz etmeye çalışacaktır.

References

Gujarati, D. (1992), **Essentials of Econometrics**, McGraw-Hill, Singapore

Holcombe, R. G. and Mills, J. A., (1994), "Is Revenue - Neutral Tax Reform Revenue Neutral?", *Public Finance Quarterly*, Vol. 22, No. 1, January 1994, pp. 65-85

Kolcak, M. (1994), **The Turkish Tax System**, Ataturk University Press, Erzurum

Kuyucuklu, N. (1993), **Turkey's Economy**, Filiz Press, Istanbul

Sandford, C. T., Godwin, M. R., Hardwick, P. J. W., Butterworth, M. I. (1981), **Costs and Benefits of VAT**, Heinemann Educational Books Limited., London

State Institute of Statistics, Prime Ministry, The Republic of Turkey (1993), **Statistical Indicators (1923-1992)**, State Institute of Statistics, Printing Division, Ankara

State Institute of Statistics, Prime Ministry, The Republic of Turkey (1994), **Gross National Product: Concepts, Methods and Sources**, State Institute of Statistics, Printing Division, Ankara

State Institute of Statistics, Prime Ministry, The Republic of Turkey (1996), **Statistical Yearbook 1995**, State Institute of Statistics, Printing Division, Ankara

State Institute of Statistics, Prime Ministry, The Republic of Turkey (1998), **Statistical Yearbook 1997**, State Institute of Statistics, Printing Division, Ankara

Tait, A. A. (1988), **Value Added Tax: International Practice and Problems**, International Monetary Fund, Washington, D.C.

Tait, A. A. (1990), "VAT Revenue, Inflation and The Foreign Trade Balance" in M. Gilliss, C. S. Shoup, and G. P. Sicat (eds.), **Value Added Taxation in Developing Countries**, Chapter 2, The World Bank, Washington, D.C.

Tait, A. A. (1991), **Value Added Tax: Administrative and Policy Issues**, International Monetary Fund, Washington, D.C.

Tatlidil, R. (1992), **The Possible Effects of the European Community's VAT's on the Turkish VAT System and Economy**, Unal Offset Press Limited, Ankara

Appendix

Regression Analysis Results:

MTB > regress 'infl' on 2 pred 'time"dummy1';
SUBC> dw.

The regression equation is
infl = 2.22 + 0.0248 time - 0.395 dummy1

Predictor	Coef	Stdev	t-ratio	p
Constant	2.2156	0.4286	5.17	0.000
time	0.024835	0.005641	4.40	0.000
dummy1	0.3952	0.6667	-0.59	0.554

s = 2.495 R-sq = 16.4% R-sq(adj) = 15.4%

Analysis of Variance

SOURCE	DF	SS	MS	F	p
Regression	2	201.48	100.74	16.19	0.000
Error	165	1026.72	6.22		
Total	167	1228.20			

SOURCE	DF	SEQ SS
time	1	199.29
dummy1	1	2.19

Unusual Observations

Obs.	time	infl	Fit	Stdev.Fit	Residual	St.Resid
72	72	11.200	3.608	0.277	7.592	3.06R
148	148	26.100	5.496	0.336	20.604	8.34R

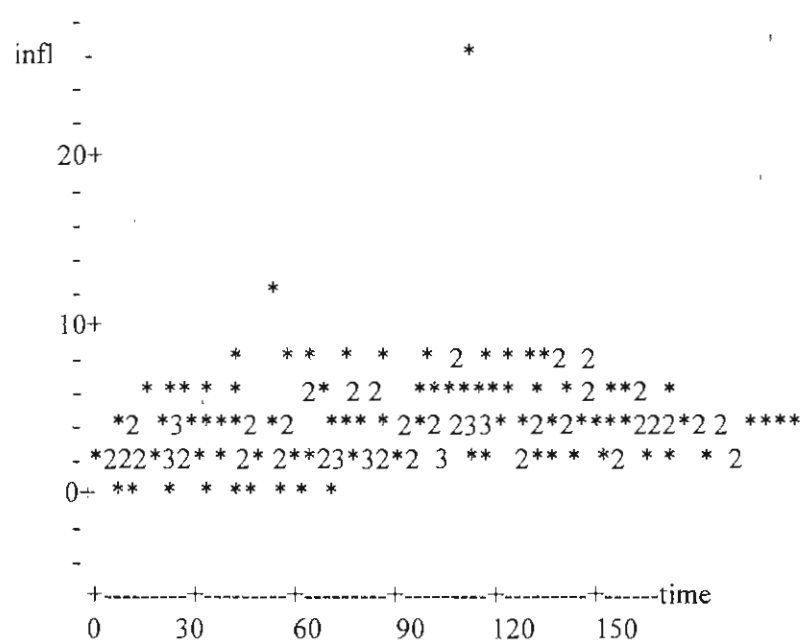
R denotes an obs. with a large st. resid.

Durbin-Watson statistic = 1.43

Discussion: The t-ratio of the dummy variable (dummy1) for the introduction of VAT is -0.59, which is low and implies that the coefficient is not statistically significant from zero. Therefore, it is not possible to detect any relationship between inflation rate and the introduction of VAT. R^2 is, 16.4%, which is very low. This means 83.6% can be explained by several other variables. Indeed, according to economic theory, Inflation is a function of several variables which mainly depend on the structure of the economy. However, there is a significant relationship between inflation rate and time, because the t-ratio for time is 4.40.

In addition, the plot of the inflation rate against time suggests that there is some increase in inflation rate with respect to time (see graph above).

MTB > plot 'infl"time'



Graph: The Relationship Between Time and Inflation Rate

MTB > regress 'infl' on 3 pred 'time"dummy1"dummy2';
SUBC> dw.

The regression equation is
infl = 2.32 + 0.0193 time - 0.613 dummy1 + 0.832 dummy2

Predictor	Coef	Stdev	t-ratio	p
Constant	2.3176	0.4381	5.29	0.000
time	0.019318	0.007516	2.57	0.011
dummy1	-0.6129	0.6945	-0.88	0.379
dummy2	0.8324	0.7500	1.11	0.269

s = 2.493 R-sq = 17.0% R-sq(adj) = 15.5%

Analysis of Variance

SOURCE	DF	SS	MS	F	p
Regression	3	209.133	69.711	11.22	0.000
Error	164	1019.065	6.214		
Total	167	1228.198			

SOURCE	DF	SEQ SS
time	1	199.291
dummy1	1	2.187
dummy2	1	7.655

Unusual Observations

Obs.	time	infl	Fit	Stdev.Fit	Residual	St.Resid
72	72	11.200	3.928	0.399	7.272	2.96R
148	148	26.100	5.396	0.348	20.704	8.39R

R denotes an obs. with a large st. resid.

Durbin-Watson statistic = 1.44

Discussion: The t-ratio for dummy3 represents an increase in VAT rates which is low and implies that the coefficient (-0.64) is not statistically significant from zero. Therefore, it is not possible to detect any relationship between inflation rate and increase in VAT rates. In addition, the t-ratio for dummy4 represents second increase in VAT rates (1.02) and again the coefficient is not statistically significant. This means that the changes in the rates of the VAT in Turkey have had no effect on the level of inflation.

Variables:

inf represents monthly changes in consumer price

dummy1 represents the introduction of VAT in Turkey

dummy2 represents the introduction of multiple rates in the VAT system

dummy3 represents the increase in all tax rates (lower, standard and higher)

dummy4 represents the second increase in all tax rates.