

Evaluation of Value Added Tax (VAT) and Tax Evasion

B. Fathi and M. Esmaeilian

Department of Economic, Aliguodarz Branch, Islamic Azad University, Aliguodarz, Iran

Abstract: The aim of this study is to explain the Value Added Tax and Tax Evasion by Experience Countries. During recent year's world's countries have welcomed using of VAT because of its efficiency at increasing government's income. On this basis, this article will be investigated in two parts. First, investigating features and VAT analysis second, considering relation between VAT and tax evasion by using of several countries experiences. The result's of this study shows that VAT execution don't affect inflation rate and VAT deduction effects on trade deficit depends on change at relative prices of exportable and importable goods. Finally, the results show that there is no positive and significant relationship between VAT rate and the amount of tax evasion.

Key words: Balance of payments, inflation rate, tax evasion, tax base, Value Added Tax (VAT)

INTRODUCTION

The term "Value Added" simply means contribution made by a firm at each stage of production without intermediate inputs. This gives rise to Value Added Tax. Value Added Tax, usually abbreviated as VAT, was first adopted in France in 1954; this tax is a generalized tax on the gross income of a business less purchases from firms world-wide. It is levied at every stage in the production and distribution chain in more than 66 countries. There are many reasons for introducing VAT and these vary from country to country. However, the following three advantages support the idea why Iran adopted this tax. These are:

Revenue potential: VAT has an extremely broad base yielding substantial revenue for the government at low rates

Administrative efficiency: VAT is a self-policing tax in that it minimizes tax evasion.

Neutrality: From economic point of view:

- VAT is levied at a single rate and registration threshold without affecting consumers' choice among goods
- Taxpayers' savings and consumption decisions are not affected by VAT
- Exports are encouraged through zero-rating
- There is no distortion of domestic production and distribution
- Its mode should also be noted

There are disadvantages too. Like other indirect taxes, VAT is regressive, inflationary and there is a difficulty of record - keeping by small businesses. Costs of its collection are also too high. One of the important components of tax reforms initiated since liberalization is the introduction of Value Added Tax (VAT).

VAT is a multi-point destination based system of taxation, with tax being levied on value addition at each stage of Transaction in the production/ distribution chain. The term 'value addition' implies the increase in value of goods and services at each stage of production or transfer of goods and services. VAT is a tax on the final consumption of goods or services and is ultimately borne by the consumer. It is a multi-stage tax with the provision to allow 'Input Tax Credit (ITC)' on tax at an earlier stage, which can be appropriated against the VAT liability on subsequent sale. This input tax credit in relation to any period means setting off the amount of input tax by a registered dealer against the amount of his output tax. It is given for all manufacturers and traders for purchase of inputs/supplies meant for sale, irrespective of when these will be utilized/ sold. The VAT liability of the dealer/ manufacturer is calculated by deducting input tax credit from tax collected on sales during the payment period (say, a month). If the tax credit exceeds the tax payable on sales in a month, the excess credit will be carried over to the end of next financial year. If there is any excess unadjusted input tax credit at the end of second year, then the same will be eligible for refund. The main motive of VAT has been the rationalization of overall tax burden and reduction in general price level. Thus, it seeks to help

common people, traders, industrialists as well as the Government. It is indeed a move towards more efficiency, equal competition and fairness in the taxation system. The objective of this study is to explain the Value Added Tax and Method of calculating Tax Evasion by Experience Countries.

LITERATURE REVIEW

Numerous studies have looked in depth at the VAT and Tax Evasion. Agha and Haughton (1996) provide an early cross-country empirical analysis of the long-term determinants of VAT efficiency. Using 1987 data from 17 OECD countries, they find that VAT efficiency improves with a lower standard rate, fewer non-zero rates, longer VAT implementation periods, and higher spending on tax revenue administration. In a more recent cross-section study, De Mello (2009) uses 2003 data from 42 countries, including mainly OECD and a few non-OECD countries. His results confirm that VAT efficiency increases with a lower standard rate, and suggest that VAT efficiency rises when the share of administrative costs in tax revenue is lower; indicating a more effective tax administration, and when a country has better regulatory quality, rule of law, and government effectiveness. A panel data analysis on the determinants of VAT efficiency, using data from 44 countries over 1970-1999, is found in Aizenman and Jinjark (2008). Their results highlight the influence of political factors (such as the durability of the political regime and ease and fluidity of political participation) over VAT efficiency. In addition, urbanization, trade openness, and the share of agriculture in the economy are also found to be important explanatory factors. A few studies have explored the relationship between tax compliance and the business cycle. Plumley (1996) finds that income tax compliance is negatively linked to the unemployment rate, and Cai and Liu (2009) show that Corporate Income Tax (CIT) compliance is linked to firms' credit constraints. Building on these efforts, our study attempts to address the issue of tax revenue efficiency changes during the business cycle more explicitly, drawing on uniquely detailed databases covering more recent years. These databases allow us to explore the annual and quarterly behavior of tax collections, particularly VAT collections, for a large group of advanced and developing economies. Our study is thus an attempt to enhance the understanding of tax revenue efficiency and its short-term determinants.

VAT characteristics:

Self-controlling: Self-controlling can be considered as the most important characteristic of this system. In other words, payers of each level of successive way of VAT are claimants of paying other levels of tax. Such a property happens when tax rate, in total way of VAT, at least in

each independent input Part, be identical and also the chain's ring be completed and be settled on the VAT to the extent of detail (Pazhoyan, 2001).

Neutrality of VAT: Neutral tax is a tax that has an identical effect on all economical sections and as a result, it doesn't cause change in direction of expenditures, in consumption, in interchange or other variables. It only causes the total deduction in the amount of money at the private section (James, 2005). Neutrality of each policy means that it doesn't affect on resources displacement, because it doesn't cause any change at relative prices. Such a property about VAT occurred very hardly in reality, because it needs establishment of a fix tax rate not only in each section, but on all sections in economic (Pazhoyan, 2001).

Increase at economic growth: Generally, in a simple macroeconomics model, the effect of tax on economic growth which is negative can be observed. As a result property of VAT in direction of creating economic growth cannot be absolute, but it's relative. In other words, on the basis of this claim, collecting taxation via VAT against other types of taxes has a positive effect on economic growth. Since in most developed countries VAT has replaced consumption tax and other taxes especially corporations tax, there is the expectation of the positive effects of this replacement on production and economic growth (Richard and Milka, 1992).

VAT'S effect on inflation: One of the most important properties of VAT is its non-creation inflation and sometimes it's anti-inflation. It's obvious that if VAT is executed without deduction effect on other tax rates, it will have inflation effects. So this tax won't create inflation and even it will probably decrease the inflation rate when it is reconsidered after establishment at the direction of deducting other taxes rate (Parthasarath, 1995). Of course, executing VAT will have some secondary influences on price level. Since the prices of some production inputs and especially work force depend on price level, it may increase the price of some goods. Of course, if central bank doesn't attend the effect of this increase at secondary prices at calculations regarding to monetary policy, may be this increase in secondary prices will be compensated by the price deduction in other economic sections. In short, it can be said that establishment of VAT system, probably will increase the prices once. But it doesn't affect on inflation rate (Richard and Milka, 1992).

Administrative expenses of taking VAT: Executing VAT system needs development of tax offices organizations. However, taxation increases resulting from executing VAT system may be to the extent that also

covers the collection and recovery expenses. Administrative expenses of VAT recovery depend on various factors such as: execution steps, the extent of VAT system's complication, the amount of small firms and tax allowance. So that according one forecasting, execution the whole steps of VAT in America needs 20694 new employees in 1991 and the expense of these new employees salaries was about one billion dollars, however total operational expenses of tax offices at the same year (without collection expenses of VAT) was about 6.1 billion dollars (James, 2003).

VAT'S effect on current balance: Another indirect effect of VAT is its positive effect on balance of payments of the enforcer country of this tax. It's obvious that, this conclusion will be correct when VAT, cause change at relative prices of importable goods to exportable goods. It means that if after introduction this tax the price of exportable goods become cheap and versus the price of importable goods become expensive and/or at least remain without change, we expect that the balance of payments improve (Parthasaraihi, 1995).

VAT'S effect on social justice: VAT has some effects on social justice. In principle, taxes which are exempted for the poor and mainly are taken of the wealthy can be considered coordinate with social justice (Pazhoyan, 2001).

MATERIALS AND METHODS

VAT and tax evasion calculation: VAT in recent years has been one of the most important income sources of governments. However, during these years the amount of evasion and fraud in VAT payments has been increased. Already different experimental methods have been used for the measurement of the amount of tax evasion. These methods are classified in three groups:

- Micro-methods which are pointed on the basis of direct consideration among tax payers and tax auditors. (Isachsen *et al.*, 1982; Mogensen *et al.*, 1995)
- Macro-methods which in many cases act by calculation contradictions and differences of produced data from two different sources. In this relation we can point to difference between income and expense statistics. (MacAfee, 1980; Del Boca, 1981; Lacko, 1998)
- Methods based on dynamic econometrics models which consider several factors such as enormous determinant factors of tax evasion. The amount of evasion and fraud at VAT payments can be

determined by calculating the difference between assumed income taken VAT and the real income of taking it (Aigner *et al.*, 1988; Frey and Weck-Hannemann, 1984).

Statistics regarding government's real income of taking VAT can simply be extracted of formal statistics. Whereas assumed income taken from VAT must be obtained of national accounts statistics, input-output table, public corporation reports and soon especially the statistics and data about private section consumption, intermediate consumptions and governments investment, play a clear role at estimating assumed income resulting from taking VAT. On other words, for obtaining tax evasion ratio at VAT payment, two following equations must

Be used:

- Tax collection performance ratio = Collected VAT Revenues/Collected hypothetical VTA revenues

Hence,

- Ratio of VAT evasion = 1-Tax collection Performance ratio

There are different components in calculation of assumed income resulting from taking VAT. Then tax is exerted about each items of private section consumption by using of national laws of VAT, usual rates or/and by tax allowance and its possible to calculate the assumed income resulting from VAT by expanding this method about all their components and sections. As a result it's better to use gross rates of VAT instead of using net rates of it. Gross rate of VAT is defined as follow:

$$\text{Gross VAT rate} = \text{Net VAT rate}/1+\text{Net VAT rate}$$

European Union countries have calculated the rate at VAT payment by using of the above method during (1994-96). Among these countries Italia, Spain, Greece have the highest amount of tax evasion by more than 20 percent and Netherlands, Denmark and Britain have the lowest amount of tax evasion by about 5 percent. Other results of this study shows that, it's not possible to present a positive and definite relation between the amount of tax evasion and VAT rate (Barbara and Rudiger, 2001).

RESULTS AND DISCUSSION

Comparison VAT'S rates in European union member countries: In this section for more clarification we will mention some studies about net VAT'S rates, operation ratio and VAT evasion in some member countries of European Union. The results of the study of (Barbara and

Table 1: Net rate of VAT, operation ratio and VAT evasion in member countries of European Union (1996), (item in terms of percent)

Countries	VAT'S rate	Operation ratio of taking VAT	Evasion of VAT
Belgium	21.0	79.9	20.1
Denmark	25.0	96.2	8.3
France	20.6	90.2	9.8
Germany	15.0	92.5	7.5
Greece	18.0	79.7	20.3
Italia	20.0	65.1	34.9
Netherlands	17.5	98.4	1.6
Portugal	17.0	84.4	15.6
Spain	16.0	76.0	24.0
Britain	17.5	93.5	6.5

Barbara and Rudiger (2001) Name, "Measurement of Value Added Tax Evasion in selected Countries on the Basis of National Accounts Data", CEF info Working Paper No. 431. March 2001

Table 2: VAT rate and the amount of evasion and operation of taking it in Germany (1997-2001) (Percent)

	1997	1998	1999	2000	2001
VAT'S rate	16	16	16	16	16
Evasion ratio of VAT	9.5	7.4	5.9	7	7
Operation ratio of taking VAT	90.5	92.6	94.1	93	93

Andrea and Rudiger (2003), Evasion of Value-Added Tax in Europe, CESIFO DICE Report 2003

Table 3: VAT'S rate and the amount of its gap (tax evasion and fraud) in Britain (2001-2005) (Percent)

	2001	2002	2003	2004	2005
VAT'S rate	17.5	17.5	17.5	17.5	17.5
Tax gap (evasion and fraud at VAT)	14.6	15.7	16.8	13.5	13.5

Michael and Stephen (2007), VAT Fraud and Evasion: What Do We Know and What can be Done?, IMF Working Paper, February 2007

Rudiger, 2001) are mentioned in Table 1. According this table Denmark and Belgium have the highest amount of VAT'S rate among member countries of European Union whereas Germany and Spain have the lowest VAT'S rate. According to the same table, tax evasion ratio at VAT payment is high in economics as Greece and Italia, whereas tax evasion ratio at VAT payment is low in countries like Denmark and Netherlands.

Some recent studies, also investigated the topic of VAT and tax evasion. For example according to (Andrea and Rudiger, 2003) tax evasion estimation in Germany on 1997 to 2001 is shown as follow:

The assumption of a generally increasing rate of VAT evasion in the single market Andrea and Rudiger (2003) is also supported by new results from Germany. They show an increase of the evasion rate from 7 percent to 9.5 percent in the period from 1997 to 2001 (Table 2), although it should be noted that there is only a limited degree of direct comparability with earlier results due to the change in the macroeconomic accounting system which had taken place in the intervening period. A closer look at the year-by-year development of the German tax-

evasion rate reveals a certain slowdown in the increase in VAT evasion in the period from 1997 to 2000, or at least no further sign of the significant rise observed for the earlier period. A temporary significant decline of this rate can even be seen in 1999. However, it must be noted that this result was affected by changes in taxation law relating to the tax-assessment basis which yielded additional revenues (cf. Tax Relief Law 1999/2000/2002). As the estimate of the hypothetical revenues included the assumed additional VAT revenues produced by the changes in this law, the decline in evasion rate may be due to a certain underestimation of these revenues. Since the year 2000, however, a significant rise again occurred, and the evasion rate even reached a record level of 9.5 percent in the year 2001.

The last study about this case has been done by (Michael and Stephen, 2007) and in it the amount of fraud and tax evasion at VAT payment (VAT gap) in Britain has been estimated for 2001 to 2005. Although in this study evasion and fraud numbers has not been separated from each other, but because of its new topic and limitations of the studies in this ground it seems interesting. Table 3 shows the results of this study (Michael and Stephen, 2007).

The result of this study shows that there is no decisive and definite relation between the amount of tax evasion and VAT'S rate. For example in countries such as Belgium and Italia both VAT'S rate and the amount of evasion in payment are high, whereas in some other countries like Denmark in spite of the very high VAT rate, tax evasion is low.

CONCLUSION

This study has demonstrated how VAT as a modern type of indirect tax is superior to sales taxing terms of revenue yield and administrative efficiency. VAT will continue to be a challenge, therefore, to all accountants and auditors and other tax administrators, first as taxpayers themselves and secondly, as tax consultants of the business community. In recent years VAT has remained as one of the major revenue sources in the Countries. This study introduces a method of measuring the tax evasion and fraud in the specific area of VAT. Its extent is basically determined by the comparison of the size of calculated hypothetical revenues to that of the collected cash revenues in a fiscal year.

REFERENCES

- Agha, A. and J. Haughton, 1996. Designing VAT systems: some efficiency considerations. *Rev. econ. Stat.*, 78(3): 303-308.

- Aigner, D., F. Schneider and D. Gosh, 1988. Me and My Shadow: Estimating the Size of the US Hidden Economy from Time Series Data, in: Barnett, E., R. Berndt and H. White (Eds.), *Dynamic Econometric Modelling*, Cambridge University Press, Cambridge (Mass.), pp: 224-243.
- Aizenman, J. and Y. Jinjark, 2008. The collection efficiency of the value added tax: Theory and international evidence. *J. Inter. Trade Econ. Dev.*, 17(3): 391-410.
- Andrea, G. and P. Rudiger, 2003. Evasion of Value-Added Tax in Europe. CESIFO DICE Report.
- Barbara, S. and P. Rudiger, 2001. Measurement of Value Added Tax Evasion in selected Countries on the Basis of National Accounts Data. CEF info Working Paper No. 431.
- Cai, H. and Q. Liu, 2009. Competition and corporate tax avoidance: Evidence from chinese industrial firms. *Econ. J.*, 119(537): 764-795.
- Del Boca, D., 1981. Parallel economy and allocation of time, micros. *Quar. J. Microecon.* 4(2): 27-57.
- De Mello, L., 2009. Avoiding the value-added tax: Theory and cross-country evidence. *Public Finance Rev.*, 37(1): 27-46.
- Frey, B.S. and H. Weck-Hannemann, 1984. The hidden economy as an "unobserved" variable. *Eur. Econ. Rev.*, 26(1): 33-53.
- Isachsen, A.J., J. Klovland and S. Strom, 1982. The Hidden Economy in Norway. In: Tanzi, V. (Ed.), *The Underground Economy in the United States and Abroad*, Heath Lexington, 209-231.
- James, M.B., 2003, 2005. Value-Added Tax as a New Revenue Congressional Research Services, The Library of Congress.
- Mogensen, G., H.K. Kvist, E. Körmendi and S. Pedersen, 1995. The Shadow Economy in Denmark 1994. Measurement and Results, the Rockwool Foundation Research Unit Study, No. 3, Copenhagen.
- MacAfee, K., 1980. A glimpse of hidden economy in the national accounts. *Econ. Trends*. 136: 81-87.
- Lacko, M., 1998. The Hidden Economies of Visegrad Countries in International Comparison: A Household Electricity Approach. In: Halpern, L. and C.H. Wyplosz, (Eds.), *Hungary: Towards a Market Economy*, Cambridge University Press, Cambridge (Mass.), pp: 128-152.
- Michael, K. and S. Stephen, 2007. VAT Fraud and Evasion: What Do We Know and What Can be Done? IMF Working Paper, February.
- Parthasaraihi, S., 1995. Taxation in Latin America: Structural Trends and Impact of Administration. IMF, Working Paper.
- Plumley, A.H., 1996. The Determinants of Individual Income Tax Compliance: Estimating the Impacts of Tax Policy, Enforcement and IRS Responsiveness. Department of the Treasury, Internal Revenue Service, Publication 1916 (Rev., 11-96).
- Parthasarath, S., 1995. Tax Policy Hand Book. IMF, pp: 90-91.
- Pazhoyan, J., 2001. Investigating economical effects of VAT at Iran's economy. *Ordibehesht* 17, Tehran. *Econ. Res.*, 1(1): 25-34.
- Richard, M.B. and C. Milka, 1992. Improving Tax Administration in Developing Countries, IMF.