

The Impact of the Implementation of Value Added Tax on Economic Growth and the Budget Deficit

¹Haji Aman Nazarnejad and ²Esfandiar Doshmanziari

¹Department of Financial Management, Islamic Azad University, Electronics Branch, Tehran, Iran

²Department of Educational Administration, Islamic Azad University,
Tehran West Branch, Tehran, Iran

Abstract: The main purpose of this study is to determine the impact of the implementation of Value Added Tax (VAT) on economic growth and budget deficit. The present study is an applied, field and descriptive-analytical research in terms of purpose, data collection method and analysis, respectively. The statistical population in this study includes all experts and managers related to tax in different districts of Tehran and the taxpayers subject to the first phase of VAT and managers and experts of tax departments of Tehran province. Total 150 samples have been collected by the available sampling method. The reliability of the researcher-made questionnaire was 0.807. Inferential statistics (including Pearson's test and Friedman ranking test) and SPSS Software were used to answer questions and hypotheses and all the research hypotheses were confirmed. According to Pearson test, we can conclude that there is a significant positive relationship between all aspects of the budget deficit and economic growth, including GNP, GDP, administrative budget deficit, budget deficits caused by the economic circumstances and value added tax. So, there is a statistical significant difference between the effect of VAT on economic growth and the country's budget deficit with an average level and it is 1.791 higher than the average level. In other words, the attitudes of individuals about the impact is at significant level moreover, according to Friedman ranking test, there is a significant difference between the parameters of economic growth and the budget deficit.

Key words: Value Added Tax (VAT), budget deficit, economic growth, GDP, administrative

INTRODUCTION

As a source of income for governments taxation enjoys a special and worthwhile place in all countries of the world so that each country is trying to receive tax as desirable as possible to make a better life for its own citizens. All the world's economists believe that tax revenues are the one of the most reliable incomes for the government but the economic structure of our country is not based on tax revenues because so far oil revenues have determined the fate of the country's economy. Taxation becomes the actual and reliable income for the government when we reach the ideal position in taxation culture and have a strong support and economic structure.

VAT is a type of multi-stage tax paid for goods and services. It means receiving tax for value added of manufactured goods or services offered in various stages of production and distribution in other words, it is a tax received during the process, from the factory to the place of product sale to the customer, step by step and is

calculated as a figure separated from the price of product and services and is obtained from the consumer or buyer. So, it can be considered as a tax that the buyer pays directly (Kamaloddin, 1989). The tax is more important than other types of taxes due to economic self-control and neutrality and above all, due to the expansion of the tax base and earning. Countries that have not followed this tax system or those that implement the system with delay have had a concern of the rising prices after the implementation of the VAT system (Keen and Lockwood, 2010).

Despite the success of the VAT as a proper substitute for a variety of sales taxes, there are concerns about the potential impact of its implementation on the price level. These concerns usually arise from the view that VAT typically has a broader tax base than other taxes and many goods and services that are not taxable, are taxed in the VAT system. Thus, this issue is the primary consideration of countries that are considering accepting this kind of tax. The experience of countries implementing the tax, have made this concern unjustified. When VAT or

any other indirect taxes are implemented in a country, the analysis of the position and effect of taxes on circular economic activities will be different (Aizenman and Jinjark, 2008). Therefore, this study will address this issue and will respond to the question that “What is the effect of the implementation of VAT on economic growth and the budget deficit?” In fact, the main purpose of this study is to determine the impact of the implementation of Value Added Tax (VAT) on economic growth and budget deficit.

Research hypotheses

Main hypothesis: Implementation of VAT has an impact on the budget deficit and economic growth.

Secondary hypothesis:

- Implementation of VAT has an impact on GNP
- Implementation of VAT has an impact on GDP
- Implementation of VAT has an impact on the administrative budget deficit
- Implementation of VAT has an impact on the budget deficit caused by the economic circumstances

Defining variables

Value Added Tax (VAT): Value Added Tax is in fact a multi-stage tax received at different stages of the production chain based on a percentage of the value added of goods produced or services provided.

Economic growth: In a clear and simple definition, it is the steady increase in real per capita production of a country that can better meet consumer's needs and improve living standards.

Budget deficit: The ratio of increased costs to the predicted incomes during financial compiled program.

Administrative budget deficits: Due to incomplete organization and therefore lack of coordination in the work, administrative budgets are often squandered and government employee's work efficiency is extremely reduced.

Budget deficits caused by the economic circumstances: The kind of budget deficit is caused by the change in economic circumstances from one stage to another and finally, lack of coordination and symmetry between public revenues and public expenditures appear in the budget.

Research background: In his dissertation entitled “The Effects of Value Added Tax on Income Distribution (in

selected countries)” Mozhgan (2010) examined the effect of VAT on income distribution in 80 countries and provided the results using OLS estimation panel data. Therefore, the results show that in low-income countries, increasing the share of VAT results in increased Gini coefficient and therefore, more income inequality. But in high-income countries, the share of VAT results in decreased Gini coefficient and therefore, less income inequality.

In a study entitled “The effect of value added tax on the net exports and its comparison with corporate tax in Iran and other Asian countries” Tayebi and Karami (2010) examined the impact of VAT on net exports in Iran and other Asian countries during the period of 1985-2008. The results show that VAT has a significant negative effect on net exports in the short term and it is neutral in the long term. Unlike the VAT, corporate tax has had a significant positive effect on net exports in the short term. In a study, using SVAR approach, Niki Oskoei studied the role of tax in the budget deficit fluctuations. The results of this study show that shocks resulting from production and tax policies have the largest share in explaining the tax revenues fluctuations in the short term. Government expenditure shock explains a tiny percentage of tax revenues fluctuations especially in the short term which shows a low direction of causality from budget deficits and government expenditures towards the tax revenues.

In an study entitled “The economic impact of the VAT on the Iranian economy” Pajuyan states that the impact of the VAT depends on its design, especially in replacement for other taxes and is not predictable in advance. In other words, the effects of the implementation of this kind of tax depend on the relevant tax law setting and the positive effects of this tax will not be formed spontaneously and the opposite and destructive results may emerge due to inefficiency in regulating the law and mismanagement.

Yoon (2012) examined adverse effects of the budget deficit on the economy of America in his article. He showed that usually in the absence of the government attention, the budget deficit will grow over time and gradually, its explosive effects will be applied to the economy of the country. Therefore, the governments set the most important objective of their policy to deal with budget deficits through increasing tax revenue and reducing unnecessary costs.

In a study on Pakistan, using the sealed data from 1995-2011 and an error correction model, Subhani and Osman (2011) concluded that increasing the tax rate is not a viable option for dealing with the budget deficit in Pakistan.

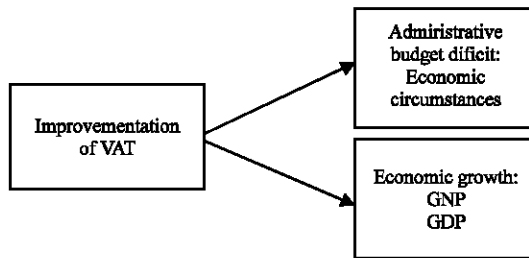


Fig. 1: The conceptual model

Conceptual model: Figure 1 shows the conceptual model.

MATERIALS AND METHODS

This is a descriptive and applied study in terms of purpose and it is a survey based on method. The statistical population in this study includes all experts and managers related to tax in different districts of Tehran and the taxpayers subject to the first phase of VAT and managers and experts of tax departments of Tehran province. Total 150 experts and managers related to tax issues have been selected through Krejcie and Morgan table by the available sampling method. In the first phase where data collection was done in library method and enjoying new information tools and resources and in the second phase which was conducted in a field method, methods and tools for data collection were researcher-made questionnaires with 16 multiple-choice questions on a Likert format to review the operational reflection of document of fundamental transformation of education in the secondary school curriculum and the questionnaires were completed by tax experts and managers. The face validity of this study is determined and approved with regard to the view of professors and advisors. Cronbach's alpha method was used to evaluate the reliability which was obtained 0.80. Given that the reliability was >0.7 , the reliability of the questionnaire was accepted. Descriptive in dices of mean, standard deviation and variation range were used for data analysis and Kolmogorov-Smirnov test was used to examine the normality of data distribution. One-sample t-test and variance analysis test were used to analyze the survey questions and prioritize the elements, respectively. Research hypotheses were tested at 0.05 levels.

RESULTS AND DISCUSSION

Descriptive findings: Of the 150 respondents, 44 were women and 106 were men. 22 respondents were between 25 and 35, 32 between 36 and 46, 47 between 47 and 57 and 49 respondents were 58 and older.

Table 1: Kolmogorov-Smirnov test table for examine the normality of data

Variables	Kolmogorov Smimov statistic	Significant level
Economic growth and budget deficit	0.590	0.878
Gross national product	0.619	0.838
Gross domestic product	0.729	0.662
Administrative budget deficit	0.687	0.733
Budget deficit caused by the economic circumstances	0.690	0.741

Analytical findings

Testing normality of variables:

In statistics, parametric and non-parametric tests are used when data distribution is normal and is not normal, respectively. So, first the normality of data distribution must be examined using Kolmogorov-Smirnov test.

- H_0 : Data distribution is normal, Sig. ≥ 0.05
- H_1 : Data distribution is not normal, Sig. < 0.05

Due to the significance level which is greater than 0.05 for all nine variables, the assumption of normal distribution of the given societies is not rejected at 95% confidence level. So, parametric tests can be used to test the variables (Table 1).

Testing hypotheses

Main hypothesis: According to the results presented in Table 2, we see that the significance level is smaller than 0.05 and the t-test statistic is greater than 1.96. So, statistically, the mean difference of VAT effect on economic growth and the budget deficit of the country is significant with an average level and it is 1.791 greater than the average level in other words, the people's view on this impact is at high level. Given that the significant number is < 0.05 , the null hypothesis was rejected.

Secondary hypothesis 1: According to the results presented in Table 3, we see that the significance level is < 0.05 and the t-test statistic is > 1.96 . So, statistically the mean difference of VAT effect on GNP is significant with an average level and it is 1.843 greater than the average level in other words, the people's view on this impact is at high level. Given that the significant number is < 0.05 , H_0 is rejected and H_1 is approved.

Secondary hypothesis 2: According to the results presented in Table 4, we see that the significance level is < 0.05 and the t-test statistic is > 1.96 . So, statistically, the mean difference of VAT effect on GDP is significant with an average level and it is 0.823 greater than the average level in other words, the people's view on this impact is at high level.

Table 2: The t-test results for the main hypothesis

One-sample t-test	df	Average	SD	t-statistic	Significant level	Confidence interval of 0.95
						Lower limit
VAT effect on economic growth and budget deficit	149	4.791	0.72985	6.52	0.020	1.280

Table 3: The t-test results for the secondary hypothesis 1

One-sample t-test	df	Average	SD	t-statistic	Significant level	Confidence interval of 0.95
						Lower limit
VAT effect on GNP	149	4.843	0.853	4.96	0.018	3.056

Table 4: The t-test results for the secondary hypothesis 2

One-sample t-test	df	Average	SD	t-statistic	Significant level	Confidence interval of 0.95
						Lower limit
VAT effect on GDP	149	3.823	0.30577	4.192	0.011	0.260

Table 5: The t-test results for the secondary hypothesis 3

One-sample t-test	df	Average	SD	t-statistic	Significant level	Confidence interval of 0.95
						Lower limit
VAT effect on administrative budget deficit	149	1.059	0.80599	7.445	0.009	1.284

Table 6: The t-test results for the secondary hypothesis 4

One-sample t-test	df	Average	SD	t-statistic	Significant level	Confidence interval of 0.95
						Lower limit
VAT effect on budget deficits caused by the economic circumstances	149	1.023	0.86855	4.881	0.023	1.781

Secondary hypothesis 3: According to the results presented in Table 5, we see that the significance level is <0.05 and the t-test statistic is >1.96 . So, statistically, the mean difference of VAT effect on administrative budget deficit is significant with an average level and it is 1.059 greater than the average level in other words, the people's view on this impact is at high level. Given that the significant number is <0.05 , H_0 is rejected and H_1 is approved.

Secondary hypothesis 4: According to the results presented in Table 6, we see that the significance level is smaller than 0.05 and the absolute value of t-test statistic is >1.96 . So, statistically, the mean difference of VAT effect on budget deficits caused by the economic circumstances is significant with an average level and the average of effect levels is 1.023 greater than the average level in other words, this impact is at high level. Given that the significant number is <0.05 , H_0 is rejected and H_1 is approved.

Prioritizing the VAT impact on economic growth and the budget deficit using Friedman test: We use Friedman test to test the significance of the discrepancy between the observed frequencies of VAT on economic growth and budget deficit of the country in fact, we test whether the ratings are so distinctive that their chance of being is not probable (Table 7 and 8).

Table 7: Friedman test results

Variables	Ratings average
No. of samples	150
Chi-squared test statistic	137.092
Degrees of freedom	3
Significant amount	0.000

Table 8: The mean scores of indices

Variables	Ratings average
Gross national product	2.90
Gross domestic product	1.27
Administrative budget deficit	1.86
Budget deficit caused by the economic circumstances	2.77

CONCLUSION

The impact of VAT on the trade balance depends on several factors including the presence or absence of tax exemptions, tax rate level and the current level of the trade balance. Since the VAT could cover a part of the economic activities which is hardly possible by sales taxes, it has a broad tax base and provides the possibility of attaining a large part of the country's tax potentials. Its broad tax base justifies low tax rates which is one of the prominent features of this taxation method to encourage economic activity. The important issue in the field of tax base is the VAT. Although, this is a broad tax base and since its implementation is based on statistics and production stepwise and broad information and bookkeeping system is a necessity in the whole sale as well as retail, starting with a limited basis and gradually and then expanding it in accordance with the experiences of other countries will be successful.

Main hypothesis: According to the results, the significance level is <0.05 and the t-test statistic is >1.96 . So, statistically, the mean difference of VAT effect on economic growth and budget deficit is significant with an average level and it is 1.791 greater than the average level in other words, this impact is at high level.

Secondary hypothesis 1: According to the results, the significance level is <0.05 and the t-test statistic is >1.96 . So, statistically, the mean difference of VAT effect on GNP is significant with an average level and it is 1.843 greater than the average level in other words, this impact is at high level.

Secondary hypothesis 2: According to the results, the significance level is <0.05 and the t-test statistic is >1.96 . So, statistically, the mean difference of VAT effect on GDP is significant with an average level and it is 0.823 greater than average level in other words, this impact is at high level.

Secondary hypothesis 3: According to the results, the significance level is <0.05 and the t-test statistic is >1.96 . So, statistically, the mean difference of VAT effect on administrative budget deficit is significant with an average level and it is 1.059 greater than average level in other words, this impact is at high level.

Secondary hypothesis 4: According to the results, the significance level is <0.05 and the t-test statistic is >1.96 . So, statistically, the mean difference of VAT effect on budget deficits caused by the economic circumstances is significant with an average level and it is 1.023 greater than average level in other words, this impact is at high level.

The results of the present study are consistent with the results of the following studies: In line with the results of this study Niki Oskoe showed that the shocks resulting from production and tax policies have the largest share in explaining the tax revenues fluctuations in the short term. Government expenditure shock explains a tiny percentage of tax revenues fluctuations especially in the short term which shows low direction of causality from budget deficits and government expenditures towards the tax revenues.

In line with the results of this study, Yoon (2012) showed that usually in the absence of the government attention, the budget deficit will grow over time and gradually, its explosive effects will be applied to the economy of the country. Therefore, the governments set

the most important objective of their policy to deal with budget deficits through increasing tax revenue and reducing unnecessary costs.

In line with the results of this study, Sameti showed that VAT has a significant negative effect on net exports in the short term and it is neutral in the long term in Asian countries. Unlike the VAT, corporate tax has had a significant positive effect on net exports in the short term.

RECOMMENDATIONS

- It is recommended to plan the main hypothesis by VAT to promote economic growth and budget deficit
- In relation to the secondary hypothesis 1, it is considered that VAT could persuade and encourage tax payers to pay taxes as security for their investment
- In relation to the secondary hypothesis 2, it is considered that VAT as a financial support could supply tax collection automated software systems
- In relation to the secondary hypothesis 3, it is considered that VAT could motivate Iranian producers abroad to invest inside the country
- In relation to the secondary hypothesis 4, it is recommended to use VAT for the budget deficit caused by economic circumstances

REFERENCES

- Aizenman, J. and Y. Jinjark, 2008. The collection efficiency of the value added tax: Theory and international evidence. *J. Int. Trade Econ. Dev.*, 17: 391-410.
- Kamaloddin, S., 1989. VAT system. MS Thesis, University of Tehran, Tehran, Iran.
- Keen, M. and B. Lockwood, 2010. The value added tax: Its causes and consequences. *J. Dev. Econ.*, 92: 138-151.
- Mozhgan, R.M., 2010. The effect of VAT on the distribution of income in selected countries. Master Thesis, Islamic Azad University, Tehran, Iran.
- Subhani, M.I. and M. Osman, 2011. Monetary shocks or real shocks which matters the most for share prices. *Inf. Manage. Bus. Rev.*, 2: 246-251.
- Tayebi, S.M. and S.K.H. Karami, 2010. Investigates the effect of net exports of value added tax on the effect of the tax on companies in Iran and other Asian countries. *Quant. Econ.*, 7: 135-157.
- Yoon, G., 2012. Explosive US budget deficit. *Econ. Modell.*, 29: 1076-1080.