

# The Effect of Value-added Tax Reform on the Entity Income and Expense Report

G.Chuluuntsetseg<sup>1</sup>, Ch.Davaasuren<sup>2</sup> T.Bolor-Erdene<sup>3</sup>

## Abstract

Value-Added Tax (VAT) is a type of tax that is of great value to the budget of Mongolia. In this study we aim to see whether VAT reforms can contribute to reducing the hidden economy, based on income and expense report of companies. As a result of estimating the fixed effect model using the difference-in-difference method, on the tax statement of 178 companies in 2015-2018 operating in Sukhbaatar district, the sales revenue of small businesses increased by an average of 102,833.9 thousand togrogs, which resulted in a reduction in the hidden economy. In addition, the sales of small enterprises with VAT payers increased by 135 million MNT in average, while sales revenue of small businesses, not the VAT payers, was lowered due to the citizens prefer to serve VAT payer companies to participate in the lottery.

Key words: VAT reform, hidden economy, reporting, difference-in-differences

## Introduction

Tax is a payment for the benefit of social wealth and obligation for all society, with its help regulating the economy, redistributing revenues and providing equality. (Altanzaya, 2016).

In countries with over-dependence on natural resources and weak economic growth, tax revenue can be taxed by the state budget through tax policy, improving the structure of the economy, supporting other sectors, increasing investment and creating jobs through the improvement of taxation and the enforcement of tax laws.

For this reason, the Parliament of Mongolia and the Government of Mongolia have adopted a revised version of the current VAT value (VAT) law on promoting economic growth with tax policy, ensuring a fair and equitable tax regime, and international standards date of January 9, 2016 (General Department of Taxation - GIA, 2015).

The VAT law aimed at exposing the hidden and hidden income through the introduction of registration systems and consumer systems into the VAT base constituting 17-31 percent of the state budget's tax revenue is 17 to 31 percent.

It is necessary to recognize the hidden economy. There are few econometric approaches to government policy impacts in our country, and our research has the advantage of being the first work on this subject.

This article consists of four parts: the first part is the research review, the second is the data, the third is the survey methodology, the fourth is the evaluation, and finally the findings and conclusions.

## Research review

There are many research works related to the VAT that constitute 17 to 31 percent of Mongolia's tax revenues. They have studied a number of aspects of VAT reporting, reducing the burden, improving the baseline, coverage and monitoring. For example, Gantulga et al. (2010) see that VAT is a reduction in the hidden economy by eliminating corporate entities or entities (ACBs) from preparing one or more accurate financial statements, as a reliable source for collecting tax-free tax information, etc. He emphasized that this was a related tax and that there was a need to improve VAT as a proper structure, organization and proper system that would be in the interest of all entities involved in tax relations. To this end, methods such as raising the VAT threshold, allowing citizens to get a refund of the VAT paid for goods purchased once a year, and applying a reduced tax rate on some consumer goods and services to reduce the tax burden on the poorest part are needed.

Darisuren (2013) explored the possibility of raising the VAT threshold by random sampling of 200 taxpayers, and raising the threshold by collecting and analyzing information by the questionnaire method reduced the number of VAT payers and the VAT income, but the corporate income tax (CIT) - has a positive effect on revenue.

Puntsag (2014) analyzed data from taxpayer's registration, refunds, and accounting reports, and selected ways to address the problematic problems. The data collection was collected by observers and interviews by 100 active accountants from active organizations. There is a tendency to keep the registration of fraudulent VAT records and keep records for non-legal purposes. The current situation of the VAT implementation complies with the taxpayer registration thresholds, but does not require registration, fraudulent, and problem-solving issues, as well as issues that need to be addressed in detail.

Sukhee (2014) states that the enforcement of the VAT Law has caused a great deal of conflict between the taxpayer and the tax authorities, and that this situation is likely to continue. The violation has led to the fact that most taxpayers, especially small taxpayers and citizens, did not have a proper understanding of the VAT, some of the current provisions of the law were inadequate, and the rioters used the law to violate thousands of taxpayers. the Minister of Justice and the Supreme People's Court of Appeals, and their personal proposals to change the provisions of the law and the provisions of the law.

Undarmaa (2016) Recognizing that the VAT registration report is causing conflicts between taxpayers and tax authorities and determines that entities are unable to record tax laws and standards in the matter, the IAS 12 "Income Tax" and have the potential to be regulated according to.

Unumunkh (2017) graphically illustrates the current VAT trend in Mongolia and uses dashboards based on corporate data to analyze the possibilities and ways to improve controls with the use of information technology systems in force with the adoption of a new law. The collected statistics show that Mongolia's VAT has been found to be a relatively effective tax compared to the tax levy and levy, and that the VAT reward system is important to other taxes. In the future, the tax duty of the consumption tax will continue to grow in the future of the tax system in the future, and it is necessary to study it carefully and to develop it without changing its core structure and propose further refinement of the current VAT system through the dashboard.

Enkhsuren et al. (2017) intends to determine whether government can solve the VAT invasion, hide income and tax evasion through the end user using the electronic payment system system and improve tax education for citizens and procure documents for goods and services e - apparing that the typing lever on the paper is increasing VAT revenue. On the basis of this conclusion, the withdrawal of the lottery for the VAT payers has been refined, raising the return of 20 percent and promoting the final productions of small and medium-sized producers for export products.

Khishigbayar et al (2017) Although VAT revenues have been raised by the adoption of the revised VAT law, the tax revenue has been increasing significantly, but there is a lack of electronic payment receipts for consumers in some markets, markets and shops. disregarding the principles and negatively affecting the implementation of the law and providing discounting to companies for equipment and software, stabilizing tax training hood education proposes to enter into a required general education courses and universities.

### **Numeric Facts**

According to official sources, the revised tax law is characterized by the introduction of a new electronic registration system, e-barimt, which provides a legal environment for a business-friendly and equitable competition environment by reducing income disputes, reducing tax evasion and escaping disputes, and also incorporating VAT into that system. By providing incentives to registered citizens once a year, citizens will be able to request large numbers of e-mails from purchases of services from large and small-sized enterprises, and has been identified

as useful for controlling taxpayers' participation in the law, improving taxpayer registration and control systems, and exposing the hidden economy. The share of the state budget revenue is shown in Table 1.

The law enforcement entrepreneur enters 38,825 taxpayers and legal entities using standardized registration machines and sends information to the settlement registration system, while the VAT increases the threshold for registration, but the sales revenue amount is 2,708 taxpayers registered as a new VAT GIA).

As VAT tax regime improved and the number of registered business entities increased, VAT revenue amounted to 553.2 billion MNT in domestic goods during the previous year, which has increased by 70 billion MNT compared to the 2015 performance. Also, in 2016, a taxpayer granted a 3.6 billion tugrug lottery bonus (GIA) through 19 draws by registering as a consumer in the electronic payment document system.

Table 1. VAT tax revenue, share in state budget, in million MNT

Year	Total revenue and grants	Tax revenue	VAT tax	Percentage of VAT tax revenue	VAT share in total revenue
2006	1,360,410	1,128,141	241,283	21.39%	17.74%
2007	1,880,489	1,502,310	265,051	17.64%	14.09%
2008	2,170,370	1,890,897	368,049	19.46%	16.96%
2009	1,993,996	1,620,550	325,956	20.11%	16.35%
2010	3,122,464	2,688,236	579,120	21.54%	18.55%
2011	4,482,026	3,668,308	1,114,383	30.38%	24.86%
2012	4,981,777	4,203,321	1,296,451	30.84%	26.02%
2013	5,986,925	5,072,793	1,435,092	28.29%	23.97%
2014	6,316,523	5,157,025	1,371,725	26.60%	21.72%
2015	5,983,398	5,118,979	1,049,589	20.50%	17.54%
2016	5,835,044	4,950,950	1,140,721	23.04%	19.55%
2017	7,922,489	6,302,610	1,619,224	25.69%	20.44%

Source: [www.1212.mn](http://www.1212.mn)

Looking at the above statistics, VAT revenues have increased in the previous year, but it is wrong to explain this increase only with tax reforms. There are a number of reasons for the increase in VAT revenue, and when it is statistically significant to assess the effects of tax reforms, it is assumed that tax policies are in effect. Therefore, we tried to determine whether the tax policy had the effect of using the method described below.

### Research methodology and quantitative data

We have selected a random sample of 178 enterprises active in Sukhbaatar district, Ulaanbaatar, and their income and expenditure indicators for the 2015-2018 tax returns for 2010-2018 (GDP deflator, CPI refractive deflation). The design of the fixed effect model has been selected for the assessment and the design of the design can be determined as follows.

$$Dep_{it} = \beta_0 + \beta_x X_{it} + \beta_{sml} SML_{it} + \beta_{law} LAW_{it} + \beta_{DLD} SML_{it} * LAW_{it} + \partial_I + E_{it}$$

I - business entities; t - time; Deputies - depending on variables (sales revenue, sales costs, etc.);  $\beta$  - regression parameters; X - independent variables (economic growth rate, manufacturing sector); SML - dummy variable for malfunctioning small business; LAW - Dummy variable indicating the year of the new VAT law; - The nature of the business entity; E - Regression Random Error.

We selected variables based on the tax law reforms to determine the effect of sales revenues, sales costs, sales-management costs, and reporting on income tax expense. In other words, if the new law is implemented, it will determine whether it has been reported differently than previously reported. In addition, the sales growth of enterprises is dependent on economic

growth, so the growth rate of the economy is chosen as an independent variable. In addition, sector variables were used to estimate disparities in the sector. The definitions of regression variables are shown in Table 2.

Table 2. The definition of variables

Variables	Explanation	Source
Sales	Sales revenue, MNT thousand At the price of 2010	Consolidation of the “Corporate Income Tax Report” (Form TT-02), submitted to the tax department of Sukhbaatar district
Salecost	Sales cost, thousands MNT. At the price of 2010	
Admcost	Cost of marketing and administration, MNT thousand. At the price of 2010	
Dumvat	The dummy variable to represent the VAT payer is VAT payer 1, otherwise 0	
gdp_growth	Economic growth as a percentage	World Bank database
Small	Small enterprise is a dummy variable that expresses small enterprise is 1 or 0 value	Small business with less than 250 million MNT sales revenue
Dumlaw	Dummy variable indicating the year of VAT is 2016-2018 if 1 or 0 value	
DID	The effects of the new VAT law were created by dummies small and dumlaw Variables multiplication	

It is also presented in Table 3 and Table 4, taking into account the statistical variables and the correlation matrix used in the study.

Table 3. Variables statistics

Variables	Observations	Average	Standard deviation	Min	Max
Sales	712	5646.202	10494.9	0	147059.4
Salecost	712	3042.088	6988.94	0	104449.3
Admcost	712	806.974	1261.19	0	14498.26
Dumvat	712	1	0	0	1
gdp_growth	712	3.949684	2.294143	1.168393	6.948839
Small	712	.994382	.0747949	0	1
Dumlaw	712	.75	.4333171	0	1
DID	712	.7457865	.4357243	0	1

Table 4. Correlation coefficient

	Sales	Salecost	Admcost	gdp_growth	Small	Dumlaw	DID
Sales	1						
Salecost	0.9806	1					
Admcost	0.2438	0.1029	1				
gdp_growth	0.1852	0.1683	0.1094	1			
Small	-0.5207	-0.5639	0.0428	-0.0000	1		
Dumlaw	0.1095	0.1095	0.0470	0.3954	0.0000	1	
DID	0.0283	0.0106	0.0520	0.3910	0.1287	0.9889	1

The previous model is assessed using Difference-in-differences (DID) and this method is one of the statistical-econometric methods of estimating policy effectiveness and is considered the most appropriate way of estimating the impact of the new law on the VAT.

There are three basic requirements to use the DID method:

1. Two main groups, namely the target group and the control group, are both distinguishable: The target group selected small businesses and small groups selected by the control group. The main target groups of the revised law are small entities whose income is uncertain, and their income is disclosed by citizen control<sup>4</sup>. Nonetheless, small enterprises considered that their revenues were relatively low and that they were relatively transparent and that they chose the control group.  
We tested that the average sales revenue before and after the revised tax law of non-small enterprises by T-Test, it shows  $t = 1.65$ ,  $p\text{-value} = 0.106$  and the statistical conclusion is there is no difference between the two revenues and the average revenue before and after. It creates the conviction that our chosen group can become a control group.
2. Must be the data before and after the implementation of the policy: The data used in the survey of before period of revised VAT law /years of 2015/, and the after period /2016-2018/.
3. There is no similar policy in parallel with the policy to calculate its effectiveness: In addition to the revised VAT law in 2016, there has been no change in the type of taxation policy towards the entity. The survey finds that these three requirements are met.

### The results of the survey

The model was evaluated using STATA software with three different coverage ranges for VAT purposes: all entities, VAT payer entities and non-taxpayers.

For statistical F and Housman tests (1) - (4) equations are statistically significant, but for DID variables, 1 percent for sales revenue and regression cost regression. In other words, the cost of sales-management and income taxes has not been affected by the law reform. For instance, when the economy grows by one percent, sales income increases by 746.74 thousand MNT on average. But the average sales income of entities increased by 102,833.9 thousand togrogs after VAT law revision.

The main variable of this study is DID, and its value is 108,931.2 thousand tugriks and statistically significant is the increase in the sales revenue of small enterprises selected as our target.

Table 5. VAT For the paying entities

Variables	Sales (1)	Sales cost (2)	Admcost (3)
Gdp_growth	746.74	451.55	58.18
Dumlaw	102833.9	72971.29	-6.99
DID	-102061.4	-72558.75	19.87
Idle member	1687.3	643.45	563.64
F statistic	89.51	95.10	6.32
Prob.F	0.000	0.000	0.003
Number of observation	712	712	712
Number of companies	178	178	178
R <sup>2</sup>	0.335	0.349	0.0345

This means that the hidden income before the legal reforms has been disclosed by citizens to require their e-documents and the installation of e-documents system. While the average sales revenue for all firms decreased, the sales volume of small firms increased at a slight pace, suggesting that they were able to reveal a certain amount of hidden economy and meet their goals. Sales costs are the same as sales revenue.

The sales revenue of total entities increased by MNT 102,833.9 thousand since the beginning of the law.

In view of the overall picture of the assessment, the revenue of non-taxpayers' organizations decreased due to the fact that citizens became more accessible to organizations providing e-documents and, in turn, reporting on revenues from VAT payers.

Other indicators show that administrative expenses and income taxes have increased. The income tax increases when the sales revenue decreases and management costs increase, which means that the sales cost has fallen over sales revenue. This is a small business entity, not a VAT payer, buys and sells its products and services at a cheaper cost and reduces inefficient costs; or costs and expenses that can be reported in the cost of sales, are reported to sales-management costs.

### **Conclusion**

This survey based on the 178 companies of Sukhbaatar district of Ulaanbaatar city on 2015-2018 years tax revenues and expenditure indicators has been used to curb the impact of tax reforms in the tax system in Mongolia. The VAT tax reforms and the fact that this law has achieved its purpose in influencing non-paid enterprises, and in particular the hidden income of small enterprises. However, our study does not cover all entities in our country and therefore avoids hurting the impact that Mongolia has on the whole. Thus, it is possible to determine the extent to which the data is available for taxpayers, for example, when the tax departments collect data on aggregate companies at the national level and broaden their scope and make such an analysis more realistic.

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