

Estimation of Transaction Costs during Tax Collection Process

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Abstract

For the past few years tax administration reforms are among top priorities of the Government of Armenia. One of key areas of tax administration relates to the issues of tax compliance which reflects all aspects of the relationship between taxpayers and the state. This paper basically focuses on the methodology of estimating tax compliance costs and provides a number of empirical findings obtained from a survey conducted among 306 Yerevan-based business enterprises. The paper provides also an analysis of administrative costs of tax collection, as well as international comparisons in this regard. It has been prepared based on the relevant report elaborated by the Armenian European Policy and Legal Advice Centre (AEPLAC).

Introduction

Fiscal policy directly affects the use of aggregate resources in the economy and the level of aggregate demand. Together with the monetary policy, it also has an impact on the balance of payment, public debt levels as well as the rates of inflation and economic growth. In general, the fiscal policy influences the behaviour of producers and consumers, as well as the distribution of income and economic welfare. Substantial macroeconomic imbalances - both internal and external – may often be explained also by fiscal imbalance.

Tax systems are considered efficient when they provide revenue targets with minimum negative effect on economic efficiency of operators in the market.¹ The efficiency of tax system depends not only on a clearly defined and prudent tax policy, but also on the efficiency of tax administration itself, which plays a key role in the efficient implementation of this policy and achievement of its objectives. Despite widely accepted principles of tax administration², there are several factors (such as economic structure, level of institutional development of a particular country, national mentality, etc.) which should also be taken into consideration.

Tax administration implies two directions i.e. tax collection process by the state and tax compliance by taxpayers. The problems of tax compliance are always in acute interest among economists since they imply different types of taxpayers' behaviour stipulated by economic, sociological and psychological motivations, on one hand, and inseparably connected with interactions between the state and taxpayers, on the other hand, which entails vulnerable, sometimes hidden aspects of state-taxpayers relations. In economic literature the problem of tax compliance is discussed in different ways. The most common approach considers the tax compliance in the context of "tax gap", which represents the difference between actual revenue collected and the amount to be collected in case of 100% compliance. Brown and Mazur (2003) state that tax compliance consists of three separate components: payment compliance, filing compliance and reporting compliance, which in their turn are "three mutually exclusive and exhaustive measures". In this context, another issue to be considered is whether compliance implies voluntary or compulsory behaviour, i.e. which one might be considered as full compliance. Tax compliance can also be treated in the light of tax avoidance and tax evasion, which are conceptually distinguished activities in terms of legality, i.e. considering avoidance as a legal measure to reduce tax liability and evasion as illegal measure (Allingham and Sandmo 1972). Reviewing an economic literature and approaches of different authors, it becomes obvious that the phenomenon of tax compliance will never find its absolute "solution", nevertheless economic researches will help to find the "best" options for the solution of the problem. One of the mentioned options is the notion of costs arising during tax compliance, which is a key aspect of this paper.

Generally, the "state-taxpayers" interrelation logically bears costs which can be separated into administrative and compliance costs. Administrative costs are the costs to the government derived during tax collection process, while compliance costs are overall resources spent by taxpayers in meeting their tax obligations. These two types of costs, as a whole, are considered as operation costs of a tax system, which is identical to the notion of transaction costs of market activities

¹ This problem is very actual because in many cases the distribution of income in the economy from economic entities to the state has a negative effect mainly due to ineffective tax administration.

² Henri Lorie "Priorities for Further Fiscal Reforms in the Commonwealth of Independent States" IMF WP/03/209

(Binh Tran-Nam *et al* 2000). According to Evans and Walpole (1997), overall costs of a tax system include “welfare costs, opportunity costs, social costs and so on”. Another opinion states that in order to estimate total impact of taxes on the society “the total sacrifice imposed upon the populace-total collection costs, administrative and compliance costs, should be looked into” (Mikesell 1986). Tax compliance costs along with administrative costs, deadweight efficiency loss from taxation, the excess burden of tax evasion and avoidance costs is being considered as one of the five component costs of taxation (Slemrod and Yitzhaki, 1996). These statements clearly prove the importance of compliance costs for effective functioning of the entire tax system.

In regard to the definition of tax compliance costs, it should be mentioned that with reference to authoritative sources we can conclude that tax compliance costs can be defined as “costs incurred by taxpayers, or third parties such as businesses, in meeting the requirements laid upon them in complying with a given structure and level of tax” (Sandford *et al* 1989.) or “all costs due to the tax system borne by taxpayers and third parties other than cost arising from economic distortions and equity violations” (Saumen Chattopadhyay and Arindam Da-Gupta, 2002). Summarizing, it can be concluded that compliance costs are the overall costs to be carried by taxpayers as a result of “state-taxpayer” interrelation.

Despite the fact that modern principles of tax simplicity have been initially discussed by Adam Smith³, the first attempt to estimate tax compliance costs took place 70 years ago (Haig 1935). This was basically stipulated by several reasons: a) tax compliance costs have been thought to be insignificant; b) there was no neat and formal model of compliance costs minimization; c) tax compliance cost estimates typically require painstaking research involving collection of large amounts of data not available from published sources (Binh Tran-Nam *et al*. 2000). However, the situation has been changed, and since 1960s around 50 studies of compliance costs of companies in around 20 different countries have been conducted.⁴ Sandford (1995) explains the growing interest toward estimation of tax compliance costs through the following: a) changes in technology (facilitating large-scale computer-driven surveys), b) introduction of value added tax (VAT) regimes in a number of countries (with high and visible compliance costs), c) growth of enterprise cultures involving the small business sector (where compliance costs are particularly onerous), d) increasing complexity of tax systems. The main findings of conducted researches proved that: compliance costs are quite significant and have highly regressive nature with great variation among different types of taxes. Recent developments in worldwide tax policy reforms show that there is a trend in tax compliance policies, with initiatives by a number of tax authorities, to move towards a more taxpayer oriented approach (S. James *et al*. 2003). This statement inevitably leads to the idea that the researches on estimation of compliance costs have a great importance since they provide a key instrument for elaboration and further improvement of tax administration policy.

Regarding Armenia, it should be mentioned that tax administration reforms serve as a key indicator of successful implementation of country-wide reforms. Many international organizations (IMF, WB, and USAID) have focused their activities to providing technical assistance to the State Tax Service. For that purpose, several reports and working papers have been prepared and submitted to the Government of Armenia. However no researches on estimation of tax compliance costs have been conducted yet and this research is the first attempt to provide quantitative measurement of tax compliance costs in Armenia along with the assessment of

³ “...as the certainty, convenience and economy canons of good tax policy...” (1776; Book five, Chapter II)

⁴ See Saumen Chattopadhyay and Arindam Da-Gupta “The Income Tax Compliance Cost of Indian Corporations ” Annex 1.1, National Institute of Public Finance and Policy, December 2002.

administrative costs in Armenia.⁵ This will allow finding out how “costly” it is for economic entities to meet their tax obligations since there is a conventional wisdom that “the lower tax compliance costs are, the stronger becomes the incentive of taxpayers to pay taxes”. It will also allow to define all aspects and details (sometimes invisible) of the relations between the tax authority and the economic entities, as well as to reveal the shortcomings of tax administration and to identify the ways to increase the efficiency of tax policy. Finally, we hope that the research will serve as basis for future similar researches aimed at providing new incentives for improvement of tax administration in Armenia.

Methodology for Estimation of Transaction Costs of Tax Collection

Logically, the methodological basis of tax compliance cost’s estimation lies behind the definition of compliance costs itself. By reviewing the proposed methodologies, it becomes apparent that the main difference between these methodologies is the number of tax compliance costs components. This is mainly stipulated by the fact that the structure and operational scheme of the tax systems of different countries are not the same, and the economic realities of different countries not always allow applying all components of the theory. Generally, tax compliance costs for businesses comprise in-house personnel costs, other in-house costs (non-labor costs) and external costs. It is important to put a distinguishing line between gross and net compliance costs, which is stipulated by cash flow benefit and tax deductibility components (Allers 1994). Compliance costs are also treated in the light of computational and tax planning costs (Johnston, 1963). These costs can also be divided into commencement (once-only) and recurrent (regular) costs (Sandford 1989). Some researches consider also psychic costs, including mental stress suffered by the internal staff during tax compliance, as well as mandatory elements, voluntary and quasi-voluntary costs (Saumen Chattopadhyay and Arindam Da-Gupta, 2002). Our methodological approach is unambiguously based on internationally accepted methodologies; however we have decided to propose a slightly different approach. Analyzing the methodologies applied, we have come to a conclusion that tax compliance costs are in strong correlation with the notion of transaction costs, since we believe, that both imply costs of functioning of tax compliance mechanism.⁶ Therefore, the definition of tax compliance costs can be interpreted as “transaction costs derived during tax compliance”. Considering this approach, we have decided to develop our methodology of estimating tax compliance costs on the basis of the conceptual components of the theory of transaction costs.⁷ The theory suggests different types of transaction costs, but they are primarily classified and grouped as: a) costs of obtaining information, b) costs of negotiations, c) costs of measurement, d) costs of protecting property rights, e) costs of opportunistic behaviour. All these components have been “adjusted” to the process of tax compliance and, finally, we have come to the following conclusions.⁸

Costs of obtaining information are indispensable expenses incurred by economic entities related to the acquisition of all documents necessary for submission to the tax authority and for tax

⁵ In this research we have considered only the tax compliance by businesses since the reporting system of tax obligations by persons is not developed yet in Armenia.

⁶ The basic principles of the theory of transaction costs (neo-institutionalism) have been formulated by R. Coase in 1937 (R. Coase “The Nature of Firm”). According to Coase, transaction costs are “the costs of exploitation of the mechanisms of market economy” or “costs that relate to the time, effort and other resources needed to search out, negotiate and consummate an exchange”. Currently, many experts have come to a conclusion that transaction costs in general are “the costs of functioning of an economic system”, which implies any costs derived as a result of interrelation of economic agents regardless where it has occurred.

⁷ Our methodology considers approximately all features of taxation procedure in Armenia and deliberately omits the components of transaction costs, which can not be estimated due to the unavailability of relevant information.

⁸ Mathematical expressions of transaction costs calculation can be found in annex 1.

inspection procedures. These documents include cash operation books, sales books and incoming goods books, as well as other documents required for preparation of financial statements. Among these costs are those related to the purchasing of publications (official or non official) or e-packages on tax legislation (including expenses for updating of these packages) and relevant advisory services as well as personnel training.⁹

Costs of negotiation are financial resources and time needed to establish “good” relations with representatives of the tax authority, including costs connected with business meetings (lunches), etc. Here we can also add the extra salaries paid to an accountant or other employee to establish and maintain “good” relations with the tax authority.

It should be noted that the factor of time plays an important role in the estimation of negotiation costs. The time factor implies the overall duration needed to establish “good” relations with tax officers. This type of costs is considered as bribe costs in compliance costs theory.¹⁰

Costs of measurement include time¹¹ for preparation of a package of documents to be submitted to the tax authority and related expenses such as salary paid to an accountant or other specialist performing these functions, as well as other costs related to the submission of these documents to the tax authority.¹² We can also include here the expenses on purchase of e-packages on accountancy. In some cases the time to be spent on submitting these documents to the tax authorities should also be considered.¹³

Costs of protection of property rights are all those expenses connected with hiring of lawyers, accountants and other professional staff members dealing with protection of property rights of economic entities during lawsuits and tax inspection processes. Here it may be included also the costs related to these procedures. With this respect, we can mention extra salaries paid to a skilled accountant who is aware of the shortcomings of tax legislation and can interpret it in favour of the interests of the economic entity (e.g. reduce taxable profit).¹⁴ An extra salary for accountant refers to avoidable or voluntary compliance costs (tax planning costs). We share the standpoint of the vast majority of researches that there is no strict border-line between avoidable and unavoidable (mandatory) costs and in practice it is very difficult to clearly distinguish them.¹⁵

⁹ Comparing with the theory of compliance costs, the costs of obtaining information will be included in the internal costs component.

¹⁰ The phenomenon of negotiation/bribe costs is typical for developing countries where the institutional system is not that developed and strong. Therefore, it is reasonable to include these costs as a component of transaction costs. The term “bribe” has been willfully excluded from the questionnaire since it has been proved that businesses are reluctant to provide information about it.

¹¹ When calculating the measurement costs, a coefficient of 0.5 was used to estimate the working time spent by relevant specialists. No special inquiry has been made to the economic entities for the calculation of this coefficient (expecting that it would be rather difficult for them to give an answer). Nevertheless, we have used this coefficient based on the experience of Croatia and logical calculations.

¹² Here it is important to consider a possible accounting/taxation overlap. The matter is that there might be cases when businesses consider all costs derived from preparation of accounting reports as compliance costs, or they consider preparation of accounting reports just as a final step of regular accounting procedure.

¹³ Sometimes it takes 2-3 days for chief accountants of companies to submit all necessary documents because of having to stand in tiresome queues.

¹⁴ The salary of accountants and lawyers implies the “composition” of three pillars, each of which represents the merit-based contribution of the specialist. For example, the first pillar is the “good” connections with the tax authority or the court, the second pillar is the implementation of current duties and responsibilities, and the third pillar is the “skills” to protect property rights.

¹⁵ It is obvious, that an accountant may receive an extra salary if the expected benefit from tax planning exceeds the expected costs. However, tax planning has a negative effect on the society, since the benefit from tax planning logically implies reduction in tax revenues.

Costs of opportunistic behaviour¹⁶ These costs are emerged due to asymmetric information (information available to one party and unavailable or partially available to the other one) between the economic entity and the tax authority, meanwhile the entity and the tax authority act “by pursuing their own interests”. This implies that both the economic entity and the tax authority try to gain as much “benefit” as possible (act as a “profit maximising firm”), meaning that the transaction costs for economic entity emerge as a result of opportunistic behaviour of the tax authority. It should be noted that the costs of opportunistic behaviour are one of the key elements of tax administration since they reveal all sensitive and vulnerable aspects of the relations between the tax authority as a authorised state body and the taxpayer as an accountable body (in terms of tax obligations).

Thus, the costs of opportunistic behaviour¹⁷ for economic entities may include various types. The first one is the interest accrued on VAT advance payments to the State Budget (advance payments are subject to further tax clearance) if the economic entity fails to make this advance payment.¹⁸ The second is the accrued interest of VAT on exports subject to a refund from the State Budget if VAT is not reimbursed in a timely and due manner. The third is the sum overpaid by the economic entity to the State Budget, which is imposed during tax inspections under the discretionary power of tax officers. The forth, is the percentage over the sum of positive difference between the prepaid profit tax (which is 1/16 part of the real profit of the last year, to be paid on monthly basis)¹⁹ and real profit tax (based on the profit of current year) which is the subject of reimbursement²⁰ by the state.²¹

Estimation of transaction costs²²

Before analysing the findings of transaction costs estimation, it is interesting to observe the dynamics of average payments of taxes per employee illustrated below:

¹⁶ Issues such as private information, moral hazard and adverse selection, which lead to shortcomings of tax administration, can be caused by opportunistic behaviour. These three problems result in higher transaction costs both for the tax authority and the taxpayers. Hence, the main objective of tax administration is to undertake measures aimed at reducing and, perhaps, eliminating these shortcomings or creating stronger incentives for a “good” behaviour of both parties, which will lead to a decrease in the level of tax evasion and an increase in the level of effectiveness of tax administration. At the same time, tax reforms should minimise the legislation enforcement costs for the tax authority and the costs of voluntary compliance for taxpayers.

¹⁷ To calculate the opportunistic behaviour costs, we have used 11.6% interest rate (the interest rate of treasury bills issued in 2003)

¹⁸ The right to impose advance payments is the result of tax authority’s discretionary power. Nevertheless, if the economic entities are well informed about their rights and undertake the necessary measures to protect their interests, the level of opportunistic behavior of the tax authority would be significantly lower (but it can be assumed that in this case there will be additional transaction costs, and in this case the figure of “net benefit” from this action may be considered as a criterion of effectiveness).

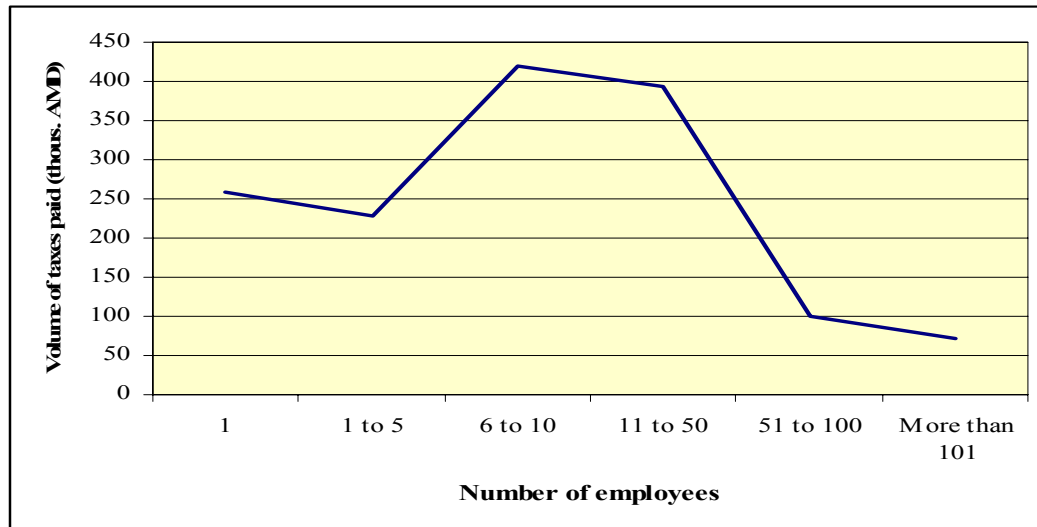
¹⁹ The Law of the Republic of Armenia “On Profit Tax”, Article 47(2)

²⁰ The Law of the Republic of Armenia “On Profit Tax”, Article 47(8)

²¹ This situation is stipulated not by the opportunistic behaviour of the tax authority but rather by the provisions of the relevant law. However, in some cases the mentioned sum has not been reimbursed and has been subjected to further clearance.

²² Detailed explanation of the questionnaire design and sample selection is provided in Annex 2

Chart 1: Average payments of taxes per employee



As it can be seen from this chart, depending on the number of employees the taxes paid per employee significantly differ in companies. For instance, according to this indicator, taxes paid by companies with one employee are nearly 3.5 times more than those paid by companies with more than 101 employees. According to the amount of taxes paid per one employee, the companies with 6-10 and 11-50 employees are distinguished; following which, the amount of taxes paid decreases in parallel with an increase in the number of employees. As the amount of taxes paid is directly correlated with the volume of sales, we can assume that this indicator also reflects, to some extent, the effectiveness of the companies' activities (labour productivity) and the level of tax compliance. However, in our view, it rather indicates another phenomenon: medium business is the target of tax administration and, hence, it finds itself in an unfavourable competitive position compared to the other groups.

Within the scope of this study, it would have been valuable to analyse the tax burden for economic sectors, which is calculated as a ratio of taxes paid by the relevant sectors to the volume of sales. According to estimations, this indicator accounts for 20% in industry, 3.3% in construction, nearly 2% in wholesale and retail trade, and 6.4% in services.²³ It appears that the sector most "suffered" because of the activities of the tax system is industry, while services and retail/wholesale sectors are in a relatively "good" situation. This is quite logical since industry is running mainly under regular tax regime, while commercial and service companies operate under a simplified tax regime. In this regard it is notable that overall transaction costs in industry sectors (annex 5) are high as well, which points out the fact that high tax burden entails high transaction costs.

Analysis of average transaction costs indicates that the information gathering costs and measurement costs account for the highest percentage share of the average transaction costs of companies. There is a threshold after which the average transaction costs in various groups exceed the overall average (primarily in medium-sized enterprises having 11-50 employees and 10.1-50 million AMD turnover and those that pay 500-5,000 thousand AMD in taxes).

Let us now analyse the overall level (gross) of transaction costs. As it can be seen from the data in annex 6, information gathering and measurement costs have the highest percentage share in

²³ This indicator was calculated using the data on the companies that provided answers to both groups of questions (taxes paid and sales volume).

overall amount of transaction costs (as in the case of average transaction costs) accounting for 74.4% and 17.4%, respectively. In hierarchic order they are followed by the opportunistic behaviour costs (3.9%), property rights' protection costs (2.5%) and negotiation costs (1.9%).²⁴ It is logical that the largest share of transaction costs falls to the share of measurement costs since these are incurred "regularly" and their amount directly relates to the level of efficient financial management. The same can be said about the costs of obtaining information, a part of which also incur regularly, while the inclusion of some components depends on the overall level of companies' development and the efficiency of management. The opportunistic behaviour costs rank the third (though these are not that large in terms of their share), which implies that the drawbacks of tax administration are rather "costly" for economic entities. The mentioned percentage share of property rights protection costs definitely prove that the level of institutional development in our business community is still far from being satisfactory (concerning the protection of rights in the courts). As it was said, the negotiation costs could have a higher percentage share in total costs; however, the sources for the emergence of such costs are considered to be among the most sensitive, complex and confidential problems of the business community and, perhaps, this fact affected the "sincerity" of the respondents' answers.

Transaction costs at national level have been calculated using the classical extrapolation method, as a result of which the overall transaction costs of economy accounted to 13,538.4 million AMD or about 0.8% of GDP for 2003.²⁵ As the sector of agriculture is almost tax-exempt, we can deduct the agricultural products from GDP and, by calculating the share of transaction costs in this amount, we will obtain 1.1%. These two figures are not that high, but their numerical expression is rather significant.²⁶

Another integrated indicator which delineates the "impact" of transaction costs to taxpayer's activity is the average level of transaction costs as a share in the total taxes paid, which, according to estimations, comprises 11.5%.²⁷ It can be said that this figure is not quite high as compared with the same indicator in developed countries, which, according to some estimates, is 10-13%.²⁸

As to the average figure for transaction costs per employee, the chart below shows that the larger the company is (the more employees it has), the lower are the transaction costs per employee.²⁹ For instance, in an entity with one employee this indicator is 51 times more than in companies with more than 101 employees.³⁰

²⁴ International experience shows that, in general, measurement costs have the largest share in overall transaction costs.

²⁵ The transaction costs for the whole economy have been estimated in the following way: first, we take taxes collected by STS in 2003 (117,725.6 mln AMD), assuming that these were paid by all economic entities operating in the country, then we calculate 11.5% share of transaction costs in this amount. This brings 13,538.4 mln AMD and accounts for 0.8% of GDP indicator (1,618,577 mln AMD) for 2003. We can use the following alternative model: calculate transaction costs of 41,000 actual taxpayers using a classical extrapolation method (if we have figures for transaction costs of 302 entities, we can easily calculate the amount for the total number of actual taxpayers) and estimate its share in GDP. Note that the amount of overall transaction costs estimated by this method is 16,264.9 mln AMD and differs from the one calculated by the first method only by 16%. This, in its turn, shows that the selected sample is representative. If we take the amount of total tax revenues of 2003 – 212.2 bln AMD, then this indicator will account for 1.5% of GDP.

²⁶ Note that in Croatia this indicator is 1.2%, in Australia - 1.36%.

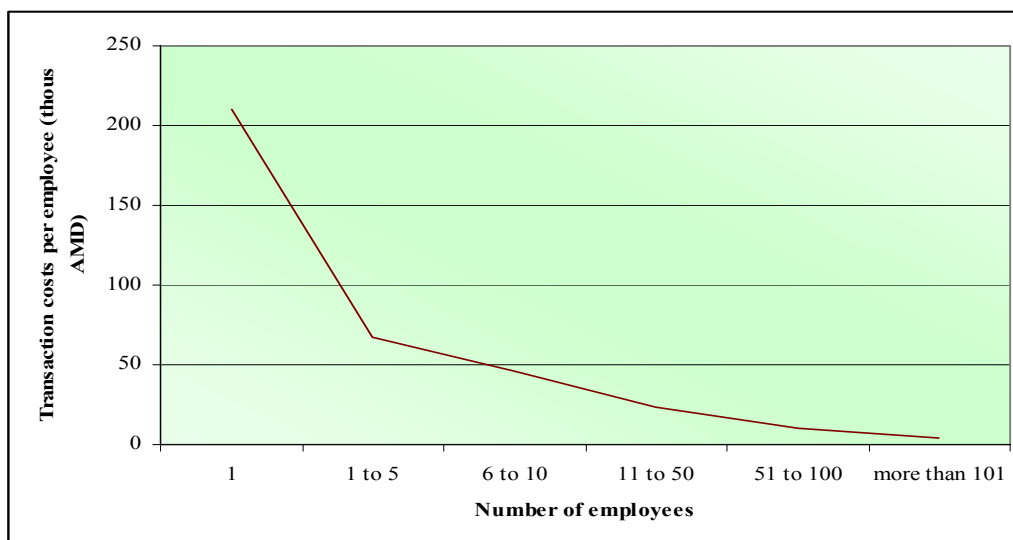
²⁷ In Australia this figure was 7%.

²⁸ See Luigi Alberto Franzoni "Tax Evasion and Tax Compliance"

²⁹ This fact is generally in line with the international experience which shows that transaction costs are of regressive nature.

³⁰ In the survey conducted in Croatia, this difference was 62 times.

Chart 2: Average transaction costs per employee.



When analysing the dynamics of the average share of transaction costs in the taxes paid, in terms of the increase in sales volumes and the number of employees (annex 3), we see that it has a tendency to decline (in companies with less than 1 million AMD turnover this figure exceeds 21 times the figure of the companies with more than 500 million AMD turnover, while in the entities with one employee it exceeds 20 times the same indicator for companies employing more than 101 people).

As a general conclusion, we can say that in terms of the share of transaction costs per employee and the taxes paid, on the whole, these are more “costly” for small and medium enterprises.³¹

Further statements provide the main findings and conclusions emerged during survey process and cross-tab analysis between various sub-groups included in the questionnaire, which will serve as a basis for our recommendations.

It is obvious that the database of the State Tax Service needs to be regularly updated. The current situation does not allow tax authorities to clearly identify taxpayers and as a consequence it creates an additional burden for them which affects the overall cost efficiency of tax administration.

The fact that a large number of companies refused to participate in the survey, as well as the negative “attitude” of the representative of these companies towards the subject of the survey illustrate that tax administration is one of the most painful and sensitive issues for economic entities and “business culture”, which we consider an important precondition for a successful tax administration, and it is still at quite a low level in Armenia’s business reality.

Cross-tab analysis has led to the conclusion that the largest expenditures on information gathering fall to the share of companies running in the industry sector, since empirical analysis evidenced that the industry sector carries the heaviest burden of taxation. It can be assumed that the better the entities are informed about the tax system, the less they are exposed to the opportunistic behaviour of tax authorities as an increase in information gathering costs contributes to a decrease

³¹ This statement is in line with the main findings of researches conducted in other countries and confirms regressive nature of tax compliance costs.

in the “expensiveness” of contacts with tax authorities. This inevitably leads to an idea that businesses should pay more attention and allocate more financial resources for raising awareness on tax legislation and tax system functioning, since the feedback from this will be tangibly more.

Expensiveness” of contacts with tax authorities, drawbacks of tax legislation and the “unfriendly” attitude of tax officers are the main reasons which “force” economic entities to establish “good” relations with tax authorities. This remains as a key problem for Armenian business reality and creates serious obstacles for policy reforms, since, even at the theoretical base, it is very difficult to find effective measures to fight against collusive practices between tax inspectors and businesses.

Opportunistic behaviour of tax authorities as a result of utilization of discretionary power is basically stipulated by imperfect tax legislation and the costs emerged in this regard is considered to be the other vulnerable point of “state-taxpayer” relations. As a countervailing measure, an appeal to the court can be considered.³² However, the survey results show that a judicial procedure is comparatively “costly” (in terms of both money and time) and it is a serious obstacle for the actions of economic entities in the context of protecting their rights. This stipulates that large taxpayers are settling their “problems” with tax authorities in a “roundabout way”. It means that small and medium businesses are in a disadvantaged position. This problem requires a systematic institutional approach at national level in order to be effectively solved. Related to costs of opportunistic behaviour, it is notable that due to the collection of advance payments, the economy has lost about 1 million dollars in investments³³. Additionally, most companies that paid advanced payments have not filed a lawsuit since they have always agreed with the findings of tax inspection, i.e. the opportunistic behavior of tax authorities has, in its turn, provided some “guaranty” for economic entities.

Detailed analysis of survey data shows that dissatisfaction with the tax system depends also on the frequency of inspections. Moreover, empirical analyses speak about the absence of direct correlation between the amounts of collected taxes and the frequency of tax inspections.³⁴ This phenomenon reflects the main findings provided in economic literature, i.e. “at the optimum, effective taxation is regressive and the audit function is non-increasing in reported income” (L. Franzoni 1998). Survey results prove the necessity of additional salary to be paid to skilled accountants, as relations with tax authorities are more costly.

Administrative costs and efficiency of tax administration

According to economic literature, various methods are used for evaluation of the efficiency of tax administration. Based on these methods, the main indicators reflecting the efficiency of tax administration in 2002-2003 in Armenia have been calculated. These figures are given below.³⁵

³² The main reasons for tax-related disputes are as follows: drawbacks of tax legislation, advanced payments levied by tax authorities, the “unfriendly” attitude of tax officers.

³³ This is an approximate figure. First, 0.28% of GPD was calculated, then the result was multiplied by 0.236 coefficient (investments accounted for 23.6% of aggregate demand in 2003) and then the product was multiplied by 1/3 (the average period of advance payment clearance is 80 days, which equals to one-third of working days per year).

³⁴ Tax revenue per employee was taken as a tax revenue indicator.

³⁵ The data have been provided by the State Tax Service under the Government of Armenia.

Table 1: Indicators of tax administration efficiency in Armenia

Indicators	2002	2003	Percentage growth as to the previous year
GDP (mln AMD) ³⁶	1,362,471.7	1,624,642.7	19.2
Number of employees (people)	1,779	1,774	-0.3
Total costs of tax authority (thousand AMD) ³⁷	1 773 835	3,816,636	115.2
of which, the salaries (thousand AMD)	961 905	2,396,090	149.1
Average costs per employee/salary (thousand AMD)	541	1,351	149.8
Overall average costs per employee (thousand AMD)	997	2,151	115,8
Amount of collected taxes (bln AMD)	105,8	117,7	11.2
Administrative costs/ tax revenues (cost of collection ratio, %)	1.7	3.24	93.4
% change in tax revenues/% change in administrative costs	-	0,10	-
Tax buoyancy (% change in tax revenues/% change in GDP)	-	0.58	-
Net tax revenues (thousand AMD)	104,026,166	113,883,364	9.5
Tax revenues per employee (thousand AMD)	59,472	66,347	11.6

As illustrated above, the number of employees of the tax system remained unchanged during the period and the changes in their number were only (-3%). However, the amount of collected taxes increased by 11.2%. Apparently, the productivity of the tax authority increased (taking into account the change in tax revenues and the number of employees).³⁸ It is also indirectly proved by the amount of tax revenues per employee, which has increased by 11.6%. However, we should consider here the costs derived during tax collection, which increased by 115% or 2.15 times. With this respect, we can refer to an estimation method used worldwide – the cost of collection ratio.³⁹ During the period in question this ratio almost doubled and reached 93.4%, which suggests an excessive growth in the expenses incurred by the tax authority over its tax collections.⁴⁰ This pattern is also illustrated by another figure, which indicates the ratio of percentage changes in tax revenues to the percentage changes in expenses incurred by the tax authority and equals to 0.1 (the criterion of efficiency is the ratio above 1). Based on these findings, we can assume that during the concerned period the tax administration was in general inefficient (despite the fact that the overall amount of net tax revenues increased by 9.5%).⁴¹

³⁶ We consider here the value of nominal GDP to ensure the “compatibility” with the amount of tax collections.

³⁷ Expenditures directed to the tax system include both budgetary and off-budget financing.

³⁸ Despite one of the classical ways to estimate the productivity implies the changes in the working time spent.

³⁹ This ratio is also interpreted as a coefficient of unit labour cost.

⁴⁰ In 2002-2003 the salaries of tax officers rose 3.6 times or by 266% at the cost of the State Budget (certainly, to assess the well-being of employees we should consider the dynamics of price changes as well).

⁴¹ Certainly, the increase in salaries should be accompanied with relevant institutional changes, and if we analyse in the future the ratio of expenses made on tax authorities to the amount of taxes collected for 2004-2005, it will be possible to find out whether the sharp increase in the expenses directed to the tax authorities has secured an adequate level of tax collections in 2002-2003.

However, it should be noted that these ratios do not always reflect objectively the real situation.⁴² In this regard it is notable that the efficiency of tax administration implies a certain level of salaries paid to the tax officers, which will raise their material interests and reduce the possibility of illegal use of “discretionary power”.⁴³ The analyses carried out would have been incomplete if we would evaluate the tax administration efficiency apart from the economic growth, i.e. without addressing the “tax buoyancy” (a type of tax elasticity), which indicates the “feedback” of the tax system in regard to the economic growth rate. As we see, during the concerned period this indicator was 0.58 (certainly, if we consider the tax revenues from all sources, this indicator will be slightly higher), which is a low figure suggesting that economic growth does not ensure an appropriate level of growth of tax revenues. Here, of course, we should take into account the preferential sectors in terms of taxation. However, it is obvious that the tax administration improvement policy should be implemented on a continuous basis.

The above mentioned analysis shows that transaction costs of businesses are large relative to tax administration costs (approximately 3.6 times).

Comparative Statistics

It is interesting to analyse the statistical data relating to tax administration in different countries. The analysis of statistics consists of two parts: first, we present the relevant statistical data of CIS countries, and then the data on the mentioned field of OECD countries.

The data describing the tax administration in CIS countries are shown in annex 4.⁴⁴ It should be noted that we calculated the indicators for the overall efficiency of tax administration using the statistical data. The Table illustrates that in 2002-2003 an increase in tax revenues was reported in all CIS countries, particularly in Kazakhstan (36%), Moldova (24.4%) and Russia (21.2%).⁴⁵ As to the level of tax administration costs, they also went up during this period in almost all countries, except Kazakhstan, where these costs decreased by 22.1%, and Georgia, where it accounted for (-7.5%). However, it should be said that no CIS country has reported such a significant level of growth in the expenses of the tax authorities as Armenia.⁴⁶ This also explains the unprecedented increase in the cost of collection ratio in Armenia. Unlike Armenia, three CIS countries - Azerbaijan, Moldova and Ukraine – reported a slight growth in this ratio (0.07% on average). In other countries, the cost of collection ratio, i.e. the unit labour cost, decreased. Generally, the CIS countries may be divided into two groups by the cost of collection ratio: countries, where this ratio is between 0 and 1, and countries where it is above 1, which can be considered as a threshold for estimation of relative efficiency. However, this is certainly a conventional division and does not reflect the real ratio for efficiency of tax administration (because it does not reflect the ratio of tax gap). The analysis of another indicator of tax

⁴² International literature indicates the following factors as possible reasons: changes in tax rates, changes in macroeconomic situation, dramatic increase in tax authorities' expenses (mainly capital), etc. It also points the fact that as this indicator does not estimate the tax potential, it has limited capacity to reflect the efficiency of tax administration (See Tax Administration in OECD Countries: Comparative Information Series 2004).

⁴³ Indeed, in case of absence or inadequate level of punishment measures, this action will not lead to the desired outcome.

⁴⁴ The materials of the CIS Statistics Committee, the World Bank and the International Monetary Fund have been used as sources for information on the tax systems of CIS countries.

⁴⁵ Based on the statistical data about different countries placed on the WB official website and provided in the report on “World Development Indicators 2005”, we come to a conclusion that the amount of tax revenues of Belarus, Georgia and Kazakhstan indicated in Table 40 has not been collected by the tax authorities only.

⁴⁶ In our view, in terms of tax reforms and improvement tax administration efficiency, temporarily, this fact is in “favour” of Armenia.

administration efficiency (ratio of percentage change in tax revenues to percentage change in the costs of tax authorities) shows that the most “efficient” authority in terms of an absolute value is that of Moldova. In all countries, except for Georgia, Russia, Tajikistan and Ukraine, this ratio is above 1, which implies that the percentage change in tax revenues exceeds that in GDP. Comparing all indicators of tax administration efficiency, we can see that among CIS countries, Kazakhstan is in a favourable situation in terms of tax administration efficiency.

In OECD countries the cost of collection ratio tended to increase slightly in 2000-2002⁴⁷, which may imply (other things being equal) that the tax administration in these countries becomes more expensive, which in its turn may be explained by the problems existing in this area.⁴⁸ It is interesting that in all Scandinavian countries this indicator is less than 1%, which is quite logical since the tax burden is rather heavy in these countries. As a rule, the cost of collection ratio of observed countries is within the range of 0-2%. The only country which passes the 2% threshold for this indicator is the Czech Republic.

Conclusions and Recommendations

Summarising the main conclusions drawn from the survey findings, we will try to formulate the following key points:

The shortcomings of tax legislation and tax administration have an adverse effect, first of all, on medium-sized businesses, as small businesses fall out of the focus of “attention” due to their size, while the large ones are generally “inaccessible” for tax authorities. Indeed, medium-sized businesses are the units that carry “on their shoulders” the tax burden of the economy. In these circumstances, large companies obtain competitive advantages and strengthen their market power. This will have an undesirable impact on the efforts aimed at ensuring sustainable economic growth, particularly, by concentrating within certain groups and increasing the degree of inequality. Under these circumstances, an increase in expenditures directed to the tax administration will be inefficient compared to the GDP growth as long as the main target of tax authorities’ efforts is the medium-sized business. Hence, the tax administration needs serious institutional changes; otherwise the macroeconomic achievements of the government shall not bring to sustainable economic growth.

For further implementation of tax administration reforms, we make the following recommendations, which are conceptually based on the principle that the tax system should be a preventive and consulting body rather than a “punishing” one.

1. In order to update the tax database and provide a more accurate information on economic entities, it is suggested to reregister the companies (within a certain period of time, by setting a specific deadline); as a result of which, the database will “get rid” of the companies that have stopped their economic activities. This measure will substantially ease the work of tax authorities by reducing the additional time and resources needed for the identification of economic entities and preventing the non-existent companies from making illegal deals. The reregistered companies will be provided with new TINs (Tax Identification Number) and thus can enter into new transactions with these codes.

⁴⁷ See Tax Administration in OECD Countries: Comparative Information Series (2004)

⁴⁸ The available data from international experience clearly indicates that cost of collecting taxes in general exceeds the revenue of tax authorities about 1% or even more (Sandford, 1995).

Another recommendation is that the tax authorities should regularly monitor the new TINs, i.e. if in a certain period of time (presumably, within three years) no tax reports are submitted under this TIN, it should be cancelled (and publicly announced). To facilitate the process of re-registration of companies, it is suggested to carry it out in three ways: a) by Internet (online regime), b) by mail, and c) by visits.⁴⁹ To ensure the permanent accessibility of companies, they should have mail boxes (or e-mail addresses)⁵⁰ for exchange of information between the tax authority and the company. Meantime the mentioned tools will serve as a general mechanism for information exchange between state and businesses.

2. When submitting the requested information (tax reports, letters, etc.), it is recommended to exclude the possibility of personal contacts between the representatives of economic entities and tax authorities, i.e. the information should be mailed or e-mailed (introducing the principle of “one window” used during the licensing procedure).
3. It is suggested to change the logic of tax inspection i.e. to eliminate implementation of so-called “planned system” of tax collection when regional inspectorates receive defined “plan” of expected tax revenues from their headquarter and organize their activity based on that plan. This will considerably diminish the possibility of opportunistic behaviour of tax authorities and reduce relevant transaction costs of economic entities.⁵¹
4. It is suggested to change significantly the institutional structure of tax control and the relevant processes. In particular, small, medium-sized and large businesses should be clearly identified (the sales volume may be selected as a possible identification criterion). It is also recommended to introduce a system of onsite tax control for large taxpayers, i.e. assign one tax officer (replaced every year by rotation) to each company, and the tax officer shall work at this company as a “tax consultant” and, at the same time, represent the interests of the state (the tax officer assumes personal responsibility for the fulfilment of tax obligations by this particular company). The introduction of this system will make the operations of large businesses utmost transparent in the context of tax compliance and will reduce the costs of opportunistic behaviour both for the state and the economic entities. The tax officer should be informed about each accounting operation of the company.⁵² When imposing taxes on large businesses, especially on business groups, we suggest introducing the idea of “consolidated/combined” taxpayer (mainly for VAT and profit tax), i.e. the affiliated enterprises within a business group prepare on volunteer basis a consolidated balance sheet, calculate the “consolidated tax” and become “consolidated taxpayers” (particularly, during vertical integration). This system should be “beneficial” enough for businesses in order to ensure their volunteer participation, meantime contributing to the identification of business groups existing in the economy and the transparency of their activities. It should be mentioned that it is necessary to create a relevant legislative framework for the regulation of the activities of business groups. As to the medium-sized business, when performing tax control/tax inspections, it is recommended to apply the system of random selection of companies subject to inspection during the particular year. In other words, the companies subject to inspection during the relevant year (based on the institutional capacities of the tax authority to

⁴⁹ The tax authorities should prepare a special form for re-registration (for submitting certain information, which will prove that the given company is running) to be completed by companies (the form may be placed on the STS website). The completed form is submitted to the tax authority and after a certain period of time the entity shall be provided with a new TIN.

⁵⁰ This method of information exchange becomes possible with the adoption of the Law on Electronic Document and Electronic Signature.

⁵¹ However, we understand that tax authorities will be reluctant to accept this proposal due to the fact that the ultimate goal of tax system is to provide appropriate sources for state budget, and, from the point of view of tax authorities, the proposed system may impede the achievement of this goal.

⁵² For instance, all accounting operations should appear on tax officer’s computer and there should not be a possibility of backwards transaction.

- perform tax inspections) are selected randomly (using relevant e-packages and in a transparent manner) from the list of medium-sized businesses at the beginning of the year, and the names of these companies are published in media outlets (at the same time, it is prohibited to perform tax inspections at companies not included in the given list, except when the inspection at this particular company is well-grounded and duly performed). In this case the costs related to an adverse selection will decrease, while the overall tax compliance of the companies will increase. For small businesses, it is necessary to continue the application of an utmost simplified tax regime and, at the same time, monitor it regularly through random sampling (selecting a smaller sample).
5. To undertake necessary measures for further simplification of tax legislation by making the relevant provisions more precise and transparent.
 6. It is recommended to stop the practice of advance tax payment clearance in order to reduce the entities' costs incurred due to advance payments collected on some taxes; all advanced payments should be refunded in monetary terms (within a certain period of time)⁵³.
 7. It is recommended to specify and maximally simplify the hearing procedures for tax-related disputes. In this context, the specialization of judges on tax issues is considered very important. This would increase the entities' incentive to defend their interests in the court and "do not follow the rules of the game" set by tax officers.
 8. It is also recommended to ensure maximum availability of information on tax legislation for economic entities, particularly through guidelines, publications and Internet. In this context, it is recommended to strengthen the factor of information within tax authorities. Particularly, it may be performed by designing a system of criteria for evaluation of the work of relevant specialists, which will not be less important than the other aspects of tax administration. A separate information structure may be established, which will be a body independent from tax authorities in terms of the fulfilment of its obligations.
 9. It is recommended to specify the procedure of providing accounting services by specialized structures, which would contribute to the decrease of the costs of measurement for economic entities.
 10. The changes in the tax control system, particularly the onsite regime for tax control, the application of random selection mechanism for selection of companies to be subjected to inspection, as well as possible changes in the tax information system shall lead to structural reorganization of the tax system itself.⁵⁴
 11. To simplify the VAT calculation and supervision procedures, we recommend issuing special tax forms that are numbered and carbonised, and making them available for sale. Any transaction that results in tax obligations on VAT implies that at least four such forms should be completed and distributed to the parties involved (two copies for each party). Then each party sends one copy of this form to the tax authority. This would enable the tax authority to carry out the so called "mirror screening", i.e. check "face-to-face" the accuracy of the forms filed by both parties.
 12. Finally, it is recommended to regularly conduct similar studies which will allow disclosing current issues related to tax administration and develop appropriate measures for their minimization and further elimination.

⁵³ In this case, it would be more difficult to persuade the entities into paying advance tax payments.

⁵⁴ This issue is also actual within the context of an overall low level of productivity of tax officers' work.

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Annex 1

1. Cost of obtaining information

$$COI = D + P + C + T$$

Where` COI - Costs of obtaining information,

D – expenditure on all necessary documents,

P – expenditure on publications and e-packages on tax legislation,

C – expenditure on consultancy,

T- expenses on personnel training

2. Cost of negotiations

$$NC^S = S^M \times 12$$

Where ` NC^S – negotiation costs on extra salary,

S^M – extra salary in monthly bases,

12 – number of months.

The factor of time which is necessary for establishment of good relations with tax authority can be measured through the formula shown below

$$T = C^t \times n$$

Where` T – overall duration of time,

C^t – duration of time needed for setting up the contact,

N – total number of contacts which is necessary for achieving anticipated positive results.

The calculation of negotiation costs for having good relations with tax authority implies the formula below:

$$NC^R = C^C \times F$$

Where` NC^R – negotiation costs on establishment of good relations,

C^C – “costs” of contact,

F – frequency of contacts per annum.

3. Cost of measurement

$$COM = \sum_{i=1}^n (Ai) \times Tp + S + E$$

Where` COM – costs of measurement

Ai – annual salary of accountants and other professional staff members⁵⁵,

n – number of accountants and other professional staff members,

Tp –ratio of time spent by economic entities

S – expenditures on accounting software

E – other expenditures made by economic entity.

⁵⁵ Calculating the salary of economic entity's staff, it should be considered that the staff is responsible for preparation of documents to be submitted to the Social Insurance Fund, therefore a special coefficient for time proportion should be introduced.

4. Cost of protection of property rights

$$\text{COPPR}^L = ((\sum_{i=1}^n Li) \times T / 365) + E$$

Where` COPPR^L - costs of protection of property rights during lawsuits,
Li – annual salary of lawyers and other professional staff members,
n – number of lawyers and other professional staff members,
T – the length of lawsuits in days,
365 – number of days in year,
E – other expenses.

For estimation of transaction costs during tax inspection process we use the following formula:

$$\text{COPPR}^T = ((\sum_{i=1}^n Ai) \times T / 365) + E$$

Where` COPPR^T - costs of protection of property rights during tax inspection,
Ai – annual salary of accountants and other professional staff members,
n – number of accountants and other professional staff members,
T – the length of tax inspection in days,
365 – number of days per year.
E – other expenses.

Regarding to estimation of an extra salary paid to a skilled accountant, it can be measured by the formula below:

$$\text{COPPR}^A = S^M \times 12$$

Where` COPPR^A – costs of protection of property rights on extra salary
S^M – extra salary in monthly base,
12 – number of months.

5. Cost of opportunistic behavior

$$\text{OPC}^A = A \times (P \times T / 365)$$

Where` OPC^A – costs of opportunistic behavior connected with advance payment to state budget,
A – amount of advance payment,
P – annual interest rate (%) of state treasury bills or bank deposits,
T – duration of time in days (duration of time until tax clearing is fulfilled), the interest rate is applied,
365 – number of days per year.

$$\text{OPC}^V = V \times (P \times T / 365)$$

Where` OPC^V – costs of opportunistic behavior connected with VAT reimbursement by tax authority,
V – amount of VAT which is subject to reimbursement,
P – annual interest rate (%) of state treasury bills or bank deposits,
T – duration of time in days (total period of reimbursement) the rate is applied,

365 – number of days per year.

$$OPC^P = P \times (R \times T / 365)$$

Where` OPC^V – costs of opportunistic behavior connected with profit tax reimbursement by tax authority,

V– amount of profit tax which is subject to reimbursement,

R– annual interest rate (%) of state treasury bills or bank deposits,

T – duration of time in days (total period of reimbursement) the rate is applied,

365 – number of days per year.

Total transaction costs can be calculated through the formula.

$$TC^T = \sum_{j=1}^m TC^E$$

Where` TC^T – total transaction costs,

TC^E – transaction costs for economic entities,

j – types of transaction costs for economic entity,

m – number of types of transaction costs for economic entity.

Annex 2

Sample selection and questionnaire design

To apply in practice the aforementioned methodology, i.e. to provide a quantitative estimation of transaction costs, a survey has been conducted among relevant enterprises.⁵⁶ It was decided to conduct “face-to-face” interviews with business representatives.⁵⁷ The database of the State Tax Service of Armenia has been used as a source for relevant data, and the sample for the survey has been designed based on the mentioned database. AEPLAC has officially requested the mentioned body to provide the relevant data. In the first stage, the State Tax Service provided contact data on 500 Yerevan-based companies (excluded individual entrepreneurs).⁵⁸ The criterion for random selection of these 500 enterprises was the fact that these companies had, at least once, paid taxes or filed a tax report. During the first screening of the data, it appeared that nearly 90% of enterprises included in the sample could not be surveyed.⁵⁹ As the number of selected entities was only 54 (11%) and it was unreasonable to carry out the survey due to a small sample, it was decided to request new data from the State Tax Service. This time the criterion for enterprise selection was specified more precisely and the sample was selected from the enterprises that submitted tax reports in the third quarter of 2004. The preliminary analysis of 794 enterprises selected by this criterion detected 515 running enterprises (65.3% of sample)⁶⁰, only 306 of which (38.7%) were willing to participate in survey. This means that of nearly 1300 enterprises only 328 (25.2%)⁶¹ were available for survey. This indicator itself accounts for about 0.8% of total population (this is believed to be an adequate figure for such surveys).⁶²

The questionnaire has been designed so as to cover approximately all necessary questions for estimation of transactions costs. The enterprises were classified according to field of activity, turnover volume, number of employees and volume of paid taxes. Other questions describing the overall attitude of enterprises towards tax authorities, tax legislation and etc. were also included in the questionnaire. Further analysis evidenced that these supplementary questions were indispensable for cross-tab analysis and helped to reveal useful conclusions.

With respect to the survey process itself, it should be mentioned that it was a rather difficult task and the interviewers faced serious constraints. The reports prepared by the interviewers clearly show that the main problem was to persuade the representatives of companies to cooperate, since

⁵⁶ For that purposes AEPLAC has announced official tender to select a specialized company.

⁵⁷ Even though for these kind of purposes it is widely accepted to conduct mail surveys, nevertheless the latter would be less effective in Armenia, considering the overall business culture and, especially, the attitude of businesses towards tax administration issues.

⁵⁸ Taking into consideration budgetary constrains, as well as the fact that the vast majority of businesses are located (or at least have official representatives) in Yerevan, it was decided to conduct the survey only in Yerevan.

⁵⁹ The reasons are as follows: a number of companies had stopped operating or were liquidated, the contact data on other companies appeared to be wrong, and etc.

⁶⁰ 35% of companies included in the sample (or 279 companies) were either liquidated long ago, closed and not operating, or provided wrong contact data (the telephone number was wrong or did not exist, or the telephone was out of order; there was not such company at the indicated address).

⁶¹ It needs to be clarified that only 22 out of 54 entities identified during the first stage agreed to participate in survey. However, in order to ensure the homogeneity of the sample, the data on these companies have not been included in the analyses of survey findings and only the data on 306 companies have been taken into account.

⁶² According to the available data, the number of enterprises actually paying taxes in Armenia reached to approximately 41,000 in 2003-2004.

International experience shows that this proportion is within a representative range. For instance, only 339 entities out of 1,200 have been surveyed during the similar study conducted in Croatia. The surveyed entities accounted for 0.48% of the total (70,179 companies) and it was considered to be a representative sample (see Helena Blazic “Tax Compliance Costs of Companies in Croatia”).

some of them did not believe in the anonymity of the survey or considered the requested data to be commercial secrets.⁶³ In some cases the interviewers had to visit a particular company several times because the managers or chief accountants did not have “enough” time to answer the questions of the questionnaire. In many cases the interviewers failed to “get hold of” the chief accountants because they were working at several places. There were companies that refused to answer any question when informed about the survey purpose, and in some cases the interviewers were addressed in an impolite manner. Indeed, there were companies that were glad to cooperate within the scope of the survey since they thought this project could really be important for promoting reforms in tax administration.

⁶³ This was an actual issue for the survey conducted in Croatia (see footnote 36) as well.

Annex 3

Transaction costs as a % share of taxes paid

Number of employees	Average amount of taxes paid	Average transaction costs	Transaction costs as % share of taxes paid
1	258,564	209,738	81
1-5	750,852	197,013	26
6-10	3,504,061	360,571	10
11-50	6,973,927	450,788	6
51-100	7,147,719	717,867	10
more than 101	31,762,083	1,394,313	4
Not answered	6,354,367	298,660	5
Total	4,845,175	396,706	8

Transaction costs as a % share of taxes paid

Sales volume	Average amount of paid taxes	Average transaction costs	Transaction costs as a % share of taxes paid
up to 1mln	137,455	84,559	62
1.1-5mln	490,490	237,849	48
5.1-10mln	815,252	240,268	29
10.1-50mln	2,508,045	416,134	17
50.1-500mln	14,320,524	1,027,492	7
more than 500 mln	75,958,333	1,638,756	2
Not answered	1,032,193	274,939	27
Total	4,845,175	396,706	8

Annex 4

Indicators of tax administration efficiency in CIS countries

Indicators	GDP for 2003 (thousand USD)	GDP for 2002 (thousand USD)	GDP % change*	Tax collections for 2003 (thousand USD)	Tax collections for 2002 (thousand USD)	% change in tax revenues for 2002-2003	Tax administr. costs for 2003 (thousand USD)	Tax administr. costs for 2002 (thousand USD)	% change in tax administr. costs in 2002-2003
Armenia	2,795,470	2,319,629	20.5	203,326	180,895	12.4	5,665	2,909	94.7
Azerbaijan	7,120,272	6,115,267	16.4	836,260	694,568	20.4	6,943	5,600	23.6
Belarus	17,501,550	14,306,457	22.3	5,929,579	4,600,139	28.9	30,318	23,873	27.1
Georgia	3,964,884	3,404,886	16.4	581,525	521,547	11.5	7,051	7,580	-7,5
Kazakhstan	29,748,601	24,636,465	20.8	7,543,230	5,530,227	36.4	24,419	29,791	-22,1
Kyrgyzstan	1,912,006	1,605,939	19.1	169,678	141,990	19.5	3,956	3,564	11,3
Moldova	1,957,802	1,623,842	20.6	256,261	205,997	24.4	5,363	5,012	6,5
Russia	433,660,365	345,588,517	25.5	87,089,399	74,371,818	17.1	1,120,137	903,336	24,3
Tajikistan	1,560,000	1,211,775	28.7	115,341	95,166	21.2	880	786	12,2
Ukraine	49,534,033	42,397,672	16.8	8,635,661	7,615,222	13.4	217,765	172,830	25,9

* Here the % change in nominal GDP is presented without considering the effect of inflation.

Indicators of tax administration efficiency in CIS countries

Indicators	Net tax revenues for 2003 (thousand USD)	Net tax revenues for 2002 (thousand USD)	% change in net tax revenues in 2002-2003	Tax buoyancy (% change in tax revenues / % change in GDP)	Cost of collection ratio for 2003	Cost of collection ratio for 2002	% change in cost of collection ratio in 2002-2003	% change in tax revenues / % change in administrative costs
Armenia	197,661	177,985	11,1	0,6	2,8	1,6	0,7	0,1
Azerbaijan	829,317	688,969	20,4	1,2	0,8	0,8	0,0	0,9
Belarus	5,899,260	4,576,266	28,9	1,3	0,5	0,5	0,0	1,1
Georgia	574,474	513,968	11,8	0,7	1,2	1,5	-0,2	-1,5
Kazakhstan	7,518,811	5,500,436	36,7	1,8	0,3	0,5	-0,4	-1,6
Kyrgyzstan	165,722	138,426	19,7	1,0	2,3	2,5	-0,1	1,7
Moldova	250,898	200,986	24,8	1,2	2,1	2,4	-0,1	3,8
Russia	85,969,262	73,468,482	17,0	0,7	1,3	1,2	0,1	0,7
Tajikistan	114,461	94,380	21,3	0,7	0,8	0,8	-0,1	1,7
Ukraine	8,417,896	7,442,392	13,1	0,8	2,5	2,3	0,1	0,5

Average TC by the group(AMD)

By number of employees

	Costs of obtaining information				Measurement costs				Negotiation costs			
	Number of respondents	As % in total	Volume	As % in total	Number of respondents	As % in total	Volume	As % in total	Number of respondents	As % in total	Volume	As % in total
1	19 out of 19	100,0	82711	39,4	12 out of 19	63,2	192750	91,9	1 out of 19	5,3	80000	38
1-5	99 out of 103	96,1	26199	13,3	84 out of 103	81,6	198107	100,6	1 out of 103	0,97	240000	122
6-10	47 out of 49	95,9	38904	10,8	45 out of 49	91,8	327806	90,9				0
11-50	74 out of 77	96,1	76019	16,9	70 out of 77	90,9	377484	83,7	3 out of 77	3,9	346667	77
51-100	33 out of 33	100,0	79758	11,1	31 out of 33	93,9	506629	70,6	2 out of 33	6,1	455000	63
101 and more	12 out of 12	100,0	513417	36,8	12 out of 12	100,0	870308	62,4				0
Not answered	11 out of 13	84,6	35364	11,8	6 out of 13	46,2	474167	158,8				0
Total average	295 out of 306	96,4	70512	17,8	260 out of 306	85,0	342782	86,4	7 out of 306	2,3	324286	82

	Costs of protecting property rights				Costs of opportunistic behaviour				Total average			
	Number of respondents	As % in total	Volume	As % in total	Number of respondents	As % in total	Volume	As % in total	Number of respondents	As % in total	Volume	As % in total
2 out of 19	10,5	10037	5	4 out of 19	21,1	113	0,05	19 out of 19	100,0	209738	52,9	
3 out of 103	2,9	80396	41	27 out of 103	26,2	14054	7,13	102 out of 103	99,0	197013	49,7	
4 out of 49	8,2	150493	42	18 out of 49	36,7	6983	1,94	48 out of 49	98,0	360571	90,9	
4 out of 77	5,2	239110	53	21 out of 77	27,3	31668	7,02	77 out of 77	100,0	450788	113,6	
2 out of 33	6,1	538000	75	8 out of 33	24,2	420764	58,61	33 out of 33	100,0	717867	181,0	
1 out of 12	8,3	57205	4	3 out of 12	25,0	23288	1,67	12 out of 12	100,0	1394313	351,5	
1 out of 13	7,7	365	0,12	2 out of 13	15,4	25445	8,52	11 out of 13	84,6	298660	75,3	
17 out 306	5,6	173720	44	83 out of 306	27,1	56114	14,15	302 out of 306	98,7	396706		

By sales volume

	Costs of obtaining information						Measurement costs						Negotiation costs					
	Number of respondents	As % in total	Volume	As % in total	Number of respondents	As % in total	Volume	As % in total	Number of respondents	As % in total	Volume	As % in total	Number of respondents	As % in total	Volume	As % in total		
Up to 1 mln	14 out of 14	100	9500	11	9 out of 14	64	116389	138	2 out of 36									
1,1-5 mln	35 out of 36	97,2222	25606	11	30 out of 36	83	224833	95				6	2 out of 36	190000	80			
5,1-10 mln	22 out of 22	100	23073	10	21 out of 22	95	221619	92										
10,1-50 mln	71 out of 72	98,6111	61177	15	68 out of 72	94	346478	83	2 out of 72			3	2 out of 72	450000	108			
50,1-500 mln	27 out of 29	93,1034	162278	16	29 out of 29	100	787103	77						310000	30			
500,1 and more	7 out of 7	100	754571	46	6 out of 7	86	980417	60							0			
Not answered	119 out of 126	94,4444	44178	16	97 out of 126	77	251627	92	2 out of 126			2	2 out of 126	340000	124			
Total average	295 out of 306	96,4052	70512	18	260 out of 306	85,0	342782	86	7 out of 306	342782	85,0	86	7 out of 306	324286	82			

	Costs of protecting property rights						Costs of opportunistic behaviour						Total average					
	Number of respondents	As % in total	Volume	As % in total	Number of respondents	As % in total	Volume	As % in total	Number of respondents	As % in total	Volume	As % in total	Number of respondents	As % in total	Volume	As % in total		
2 out of 14	14	447	0,5	4 out of 14	28,6	608	0,7	14 out of 14	100,0	84559	21,3							
3 out of 36	8	180122	75,7	6 out of 36	16,7	167	0,1	36 out of 36	100,0	237849	60,0							
1 out of 22	5	120000	49,9	6 out of 22	27,3	716	0,3	22 out of 22	100,0	240268	60,6							
5 out of 72	7	165125	39,7	28 out of 72	38,9	11854	2,8	72 out of 72	100,0	416134	104,9							
3 out of 29	10	418667	40,7	17 out of 29	58,6	60222	5,9	29 out of 29	100,0	1027492	259,0							
2 out of 7	29	95178	5,8	3 out of 7	42,9	38813	2,4	7 out of 7	100,0	1638756	413,1							
1 out of 126	1	20000	7,3	19 out of 126	15,1	167243	60,8	122 out of 126	100,0	274939	69,3							
17 out 306	6	173720	43,8	83 out of 306	27	56114	14,1	302 out of 306	98,69	396706								

By the volume of taxes paid

	Costs of obtaining information				Measurement costs				Negotiation costs			
	Number of respondents	As % in total	Volume	As % in total	Number of respondents	As % in total	Volume	As % in total	Number of respondents	As % in total	Volume	As % in total
Up to 100 thous	13 out of 14	92,8571	52462	33	9 out of 14	64	174778	109				
100-500 thous.	60 out of 60	100	49000	21	51 out of 60	85	205680	88				
500 - 5mln	75 out of 79	94,9367	49596	12	75 out of 79	95	363487	89	2 out of 79	3	220000	54
5 mln - 20 mln	18 out of 18	100	155778	22	18 out of 18	100	459861	65				
20 mln and more	9 out of 9	100	647000	29	9 out of 9	100	1515528	68	1 out of 9	11	310000	14
Not answered	120 out of 126	95,2381	40270	13	98 out of 126	78	284509	90	4 out of 126	3	380000	121
Total average	295 out of 306	96,4052	70512	18	260 out of 306	85,0	342782	86	7 out of 306	2,3	324286	82

	Costs of protecting property rights				Costs of opportunistic behaviour				Total average			
	Number of respondents	As % in total	Volume	As % in total	Number of respondents	As % in total	Volume	As % in total	Number of respondents	As % in total	Volume	As % in total
4 out of 60	7		130205	55,75	4 out of 14		31	0,02	14 out of 14	100,00	161080	40,6
3 out of 79	4		1875	0,46	13 out of 60		4805	2,06	60 out of 60	100,00	233550	58,9
3 out of 18	17		418667	58,91	27 out of 79		20508	5,00	78 out of 79	98,73	410007	103,4
1 out of 9	11		57205	2,57	9 out of 18		50641	7,13	18 out of 18	100,00	710737	179,2
6 out of 126	5		185598	58,89	4 out of 9		42466	1,91	9 out of 9	100,00	2222202	560,2
17 out 306	6		173720	43,79	83 out of 306		56114	41,68	302 out of 306	97,62	315149	79,4

By the field of activity

	Costs of obtaining information				Measurement costs				Negotiation costs			
	Number of respondents	As % in total	Volume	As % in total	Number of respondents	As % in total	Volume	As % in total	Number of respondents	As % in total	Volume	As % in total
Industry	33 out of 34	97,0588	232545	36	32 out of 34	94	353922	56	2 out of 34	6	450000	71
Agriculture	1 out of 1	100	1500	1	1 out of 1	100	108000	99				0
Trade	79 out of 81	97,5309	29451	11	64 out of 81	79	281539	106	1 out of 81	1	140000	53
Services	155 out of 161	96,2733	60348	15	137 out of 161	85	343564	88	3 out of 161	2	306667	79
Construction	15 out of 16	93,75	54267	12	16 out of 16	100	366250	82				0
Other	8 out of 8	100	71375	8	6 out of 8	75	1001667	115	1 out of 8	13	310000	35
Not answered	4 out of 5	80	15000	7,6	4 out of 4	100,0	183250	92,4			0	0
Total average	295 out of 306	96,4052	70512	18	260 out of 306	85,0	342782	86	7 out of 306	2,3	324286	82

	Costs of protecting property rights				Costs of opportunistic behaviour				Total average			
	Number of respondents	As % in total	Volume	As % in total	Number of respondents	As % in total	Volume	As % in total	Number of respondents	As % in total	Volume	As % in total
5 out of 34	15	251036	39	15 out of 34	44	34530	5	34 out of 34	100	637430	160,7	
2 out of 81	2	66986	25	29 out of 81	36	18401	7	80 out of 81	99	264409	66,7	
7 out of 161	4	197205	51	27 out of 161	17	119932	31	159 out of 161	99	389691	98,2	
3 out of 161	2	61218	14	6 out of 161	4	45405	10	16 out of 161	10	445630	112,3	
			0	5 out of 8	63	19027	2	8 out of 8	100	873267	220,1	
		0	0	1 out of 4	25,0	137	0,07	4 out of 4	100,00	198284	50,0	
17 out 306	6	173720	44	83 out of 306	27	56114	14	302 out of 306	98,69	396706		

Transaction costs by the group (AMD)

Annex 6

By number of employees

	Costs of obtaining information	As % in total	Measurement costs	As % in total	Negotiation costs	As % in total	Costs of protecting property rights	As % in total	Costs of opportunistic behaviour	As % in total	Total transaction costs	As % in total
1	1571500	39,4	2313000	58,0	80000	2,0	20073	0,5	452	0,01	3985025	3,3
1-5	2593700	12,9	16641000	82,8	240000	1,2	241187	1,2	379445	1,9	20095332	16,8
6-10	1828500	10,6	14751250	85,2		0,0	601973	3,5	125692	0,7	17307414	14,4
11-50	5625400	16,2	26423850	76,1	1040000	3,0	956438	2,8	665021	1,9	34710710	29,0
51-100	2632000	11,1	15705487	66,3	910000	3,8	1076000	4,5	3366109	14,2	23689596	19,8
101 and more	6161000	36,8	10443690	62,4		0,0	57205	0,3	69863	0,4	16731758	14,0
Not answered	389000	11,8	2845000	86,6		0,0	365	0,01	50890	1,5	3285256	2,7
Total	20801100	17,4	89123277	74,4	2270000	1,9	2953242	2,5	4657473	3,9	119805092	

By sales volume

	Costs of obtaining information	As % in total	Measurement costs	As % in total	Negotiation costs	As % in total	Costs of protecting property rights	As % in total	Costs of opportunistic behaviour	As % in total	Total transaction costs	As % in total
Up to 1 mln	133000	11,2	1047500	88,5		0,0	895	0,1	2433	0,2	1183828	1,0
1,1-5 mln	896200	10,5	6745000	78,8	380000	4,4	540365	6,3	1000	0,01	8562565	7,1
5,1-10 mln	507600	9,6	4654000	88,0		0,0	120000	2,3	4295	0,1	5285895	4,4
10,1-50 mln	4343600	14,5	23560500	78,6	900000	3,0	825626	2,8	331914	1,1	29961640	25,0
50,1-500 mln	4381500	14,7	22826000	76,6	310000	1,0	1256000	4,2	1023781	3,4	29797281	24,9
500,1 and more	5282000	46,0	5882500	51,3		0,0	190356	1,7	116438	1,0	11471295	9,6
Not answered	5257200	15,7	24407777	72,8	680000	2,0	20000	0,1	3177612	9,5	33542589	28,0
Total	20801100	17,4	89123277	74,4	2270000	1,9	2953242	2,5	4657473	3,9	119805092	

By the volume of taxes paid

	Costs of obtaining information	As % in total	Measurement costs	As % in total	Negotiation costs	As % in total	Costs of protecting property rights	As % in total	Costs of opportunistic behaviour	As % in total	Total transaction costs	As % in total
Up to 100 thous	682000	30,2	1573000	69,8		0,0		0,0	123	0,0	2255123	1,9
100-500 thous.	2940000	21,0	10489687	74,9		0,0	520822	3,7	62462	0,4	14012971	11,7
500 -5mln	3719700	11,6	27261500	85,2	440000	1,4	5626	0,0	553709	1,7	31980534	26,7
5 mln -20 mln	2804000	21,9	8277500	64,7		0,0	1256000	9,8	455767	3,6	12793267	10,7
20 mln and more	5823000	29,1	13639750	68,2	310000	1,6	57205	0,3	169863	0,8	19999818	16,7
Not answered	4832400	12,5	27881840	71,9	1520000	3,9	1113589	2,9	3415549	8,8	38763378	32,4
Total	20801100	17,4	89123277	74,4	2270000	1,9	2953242	2,5	4657473	3,9	119805092	

By the field of activity

	Costs of obtaining information	As % in total	Measurement costs	As % in total	Negotiation costs	As % in total	Costs of protecting property rights	As % in total	Costs of opportunistic behaviour	As % in total	Total transaction costs	As % in total
Industry	7674000	35,4	11325500	52,3	900000	4,2	1255178	5,8	517952	2,4	21672630	18,1
Agriculture	1500	1,4	108000	98,6		0,0		0,0		0,0	109500	0,1
Trade	2326600	11,0	18018500	85,2	140000	0,7	133973	0,6	533640	2,5	21152712	17,7
Services	9354000	15,1	47068277	76,0	920000	1,5	1380438	2,2	3238176	5,2	61960891	51,7
Construction	814000	11,4	5860000	82,2		0,0	183653	2,6	272432	3,8	7130084	6,0
Other	571000	8,2	6010000	86,0	310000	4,4		0,0	95137	1,4	6986137	5,8
Not answered	60000	7,6	733000	92,4		0,0		0,0	137	0,0	793137	0,7
Total	20801100	17,4	89123277	74,4	2270000	1,9	2953242	2,5	4657473	3,9	119805092	