

AMERICAN UNIVERSITY OF ARMENIA

RESEARCH PROJECT

THE INFLUENCE OF TAX POLICY ON THE BUILDING

MATERIALS' PRODUCTIVITY

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ABSTRACT

In recent years Armenia has made significant changes in the way it conducts tax policy. In particular, the building trade has been affected by these changes. This project examines the key issues associated with the recent changes in tax policy and analyzes various indicators of building trade operational framework. It focuses on possible effects of tax influence on building trade in Armenia. There is evidence that the tax policy is applied to small and large businesses differently.

Key words: Tax Policy, Building Trade.

SUMMARY

The evidence suggests that taxation and public spending are not harmful to productivity growth. On the contrary, they are helpful. In the long run, comprehensive tax reform could greatly reduce the harmful side effects caused by the tax system, benefitting taxpayers and encouraging economic growth. Taxes provide the government with revenue, and influence on productive infrastructure maintenance and expansion, however they can also squeeze out productive activity.

This project provides some new empirical perspectives on the relationship between building trade and tax policy. First we represent the situation in building trade with a comprehensive set of stylized facts concerning fluctuations in building trade variables and determinants. Then the tax policy in Armenia and the relationship between tax and productivity is presented. Finally we discuss the influence of tax policy on building trade industry.

The high tax burden couldn't bring to high productivity growth in Armenia. Our government has defined low rates of taxation being sure it will lead to higher productivity growth.

The new tax rates reform has created some incentives for our producers to increase build-materials productivity.

INTRODUCTION

Armenia is abundant with natural stones that are used in capital construction as build-materials. About ten years ago Armenia was the main supplier of natural mineral build-materials (basalt, perlite, granite, pumice-stone, etc.) and the only producer of tufa in former Soviet Union. In our republic there are 43 building stones ores, 18 surface stones ores, 3 marble ores and non-materials. The building trade industry has been one of the most important spheres of economy introduced by many large and average sized companies. Unfortunately, now it has lost its priority, which is explained by a number of factors such as collapse of previous economic relations, tax policy, and low demand in building materials.

The build-materials producing companies can't make much profit nowadays, however it is not only the result of unfavorable taxes. The main reason is the low demand. There are some factors hampering the demand in building materials. In its turn, it is affected by unfavorable living standards in Armenia and large-scale migration. Besides, there is also a problem connected with relatively high production cost. The reason of high production cost is the lack of natural resources, such as fuel, oil, and gas. Finally, Armenia's energy resources are poor. As our studies showed, the tax rates in Armenia, particularly those in build-materials trade, are not unfavorable, they don't prevent our companies from generating significant profits. In case of the availability of large demand, build-materials' productive capacity can afford to triple the production volume.

THE SITUATION IN BUILDING TRADE INDUSTRY.

About ten years ago Armenia was the main supplier of natural mineral build-materials (basalt, perlite, granite, pumice-stone, etc.) and the only producer of tufa in former Soviet Union. Armenia is rich with natural stones that are used in capital construction as build-materials.

In case of the availability of large demand, build-materials' productive capacity can afford to triple the production volume.

One of the problems is connected with the type of property in building material production. Several enterprises are private others still are state. Small, private enterprises are more flexible. They have more developed technology, than huge, state-owned factories. Much more favorable conditions are needed for them to improve production of building materials. [7]

The next important issue is the relationship between the flexibility of financial-budgetary policy and growth of investment. Many potential investors for Armenia think that the lack of reasonable financial policy prevents the process of investment in production. As a perspective branch of AR's economy development, building materials production needs differentiated strategic approaches for investment process.

The situation in building materials production has changed and connected with the drastic decrease of civil construction: the incremental rate of building materials industry has reached to increased 10% which is mainly related to the decreasing level of civil construction. According to the official data [4], the scope of the construction has been equal to 26.8 billion drams by current prices during the first half of 2000. It is

13% less than that of 1999. Obviously, the demand in building materials and construction rate are interrelated. And the state budget opportunities for financing construction, in its turn, is related to the revenues from privatizing. 75 different enterprises with strategical significance are separated by government to privatize including engine-plants, chemical and radio electronics, light industry, energy and building materials industry.

After privatizing of build-materials producing companies which are almost 15% of all most recently privatized companies, foreign investors are engaged in business activities by reorganizing the company, each choice depending on the relevant business plan and taxation policy. In build-materials industry "Artik-tufa" ojsc, "Granite" ejsc. and "Arm-marble granite" company are going to be privatized.

Armenian tax laws form an essential part of investment legislation. Many tax laws incorporating widely recognized concepts of international taxation, in combination with the growing tax treaty network present a good incentive for investment planning. Good examples are using article "**Tax holidays**" for foreign investors.

Armenia has concluded bilateral agreements on the mutual promotion and protection of investments with 16 countries [8]. It has also concluded 10 double-tax treaties and several more await ratifications. Armenia has a network of foreign investment protection and promotion treaties. There are no restrictions on repatriation of profits or income provided taxes paid.

In recent years location theorists have extended the production-location framework to explore the effects of various types of business taxes on the firm's production and location decisions of profit tax as well as VAT [9].

Because the build-materials producing and elaborating factories are located away from each other, transportation costs are high. These costs are not considered when calculating taxable profit. However, it is involved in financial profit calculations. Let's focus on the example of cement industry. Due to decline in demand on amount of slow down of development projects and excessive supply, net prices of cement have been constantly falling [10]. Electricity tariff for cement industry has gone up by 71% during the last three years. Due to taxes on import of paper bags the price of paper bags has registered a rise of 85%. Cumulative effect of above mentioned escalation of cement works out to well over 21,000 drams per tone, which could not be passed to the consumers due to stiff competitions amongst cement manufacturers.

Iranian cement has a lower price than Armenian cement. One of the reasons is low rate of VAT (nil) in Iran. Taxation on cement as 20 % of retail price leading to higher price which is detrimental to the demand of cement for VAT on imported goods and zero rate of VAT for exported goods has put local and Iranian cement producers in relatively equal situation.

It is very important to mention the fact that there is a large segment of shaded economy in building trade, especially in cement industry which prevents levy of the taxes in great extent [11]. The actions of subjects and individuals acting in unofficial economy are out of the tax field. The efficiency of tax system is first explained by the degree of efficiency of the struggle against the unofficial economy focused on the burning-point of economy's essential problems. The struggle against an unofficial economy is the axle, where the gains of state finances, the participants of financial market, particularly, the banks, state social securities system and of course the subjects

driving the economy are intersected. The unofficial economy with its various outcomes is available almost in all countries and is capable to prevent and limit the actions of the country's economic and social policy. The basic attribute of an unofficial economy is the circulation (and its result) formed through financial-and-economic relationships of the subjects, acting outside the tax field.

In recent years there have been numerous calls for radical reform of the tax policy, the majority of which share the objective of shifting away from a base in favor of comprehensive taxation of consumption. The tax treatment of the consumption provided by governments in the form of education, fire protection and a myriad of other services, is central to both the normative design of a tax system and the positive analysis of the effects of the reform.

As one of the most important branches of Armenian Industry, building materials production "feels" every reform or specific change in Taxation policy, which is one of regulators of economy. Because of the crucial situation of AR's State budget the Finance Minister L.Barchudarian, Minister of State Revenues G.Poghosian and Minister of Economy and Trade K.Chshmaritian have announced a resolution about important and necessary activities to "help" the budget as soon as possible. One of the steps is to activate taxation inspection, the activity of tax authorities, auditing and control over all branches and spheres. As many companies do not work because of the increased amount of tax dept., they have been allowed to work thanks to " Tax general pardon". More than seven average firms producing building materials have used this opportunity to continue its business activities [12].

In order to make analyses, here is presented data after checking the numbers with those existing at the ministry of Trade and Economics of Republic of Armenia.

Totals for whole branch

	Beginning of 2000	In 1999
Production volume by current prices in AD	5,141,143,000	5,700,000,000
Sales level in AD	3,504,011,000	4,222,061,000
Export in AD	599,624,000	449,575,000
Number of employees	5,750	9,020
Average salary (monthly) In AD	19,520	17,000

AraratCement

	Beginning of 2000	In 1999
Production volume by current prices in AD	1,812,181,000	1,875,880,000
Sales level in AD	998,363,000	627,978,000
Export in AD	492,630,000	432,343,000
Number of employees	1,419	1,538
Average salary (monthly) in AD	14,500	16,300

As presented, Ararat Cement's production volume constitutes about 35.24% of the production volume of whole branch in 2000 and about 32.91% of it in 1999.

HrazdanCement

	Beginning of 2000	In 1999
Production volume by current prices in AD	1,295,243,000	1,357,350,000
Sales level in AD	1,347,901,000	1,421,296,000
Export in AD	0	16,139,000
Number of employees	610	650
Average salary(monthly) In AD	30,600	37,500

The production volume of Hrazdan Cement in 1999 forms 23.8% production volume of whole branch and 25.19% of it in 2000.

Although in 2000 the average salary has decreased for about 18.4% comparing with that of 1999, it is still the highest in the branch.

YerevanGranite

	Beginning of 2000	In 1999
Production volume by current prices in AD	7,403,000	4,729,000
Sales level in AD	1,346,000	578,000
Export	0	0
Number of employees	16	20
Average salary (monthly) in AD	11,350	11,350

Yerevan Granite has done no exports during last two years. Besides, the realization of its product forms very small part in our republic, too. The consumption of its product is only 12.22% in 1999 and 18.18% in 2000.

AniPemza

	Beginning of 2000	In 1999
Production volume by current prices in AD	2,267,000	1,695,000
Sales level in AD	2,297,000	1,630,000
Export	0	00
Number of employees	35	35
Average salary(monthly) in AD	10,000	13,000

Here, again, no export. But what is important, the realization forms significant amount comparing with the production volume. No change has occurred in the number of employees, however the average salary has decreased.

Scanning of the external environment is essential in order to identify possible opportunities and threats. Republic of Armenia has its own unique set of societal forces, some of which are very important to firms in building materials' industry.

In the first stage of transition from administrative-command system to the market economy, the economy of Armenia underwent a crisis. This was followed by a stabilization period, which provided for very low level of economic indices. antiinflation policy of Armenian government. As a result, the prices of the main types

of building materials have not fluctuated during last five years. It brought to reasonable wage/price controls based only contracts between producers and buyers of building materials.

Energy availability and cost are very important in price formulation of several types of building materials, especially for construction goods. Energy availability and the cost of energy have increased during last five years, which, on one hand, helped to restart the production in many companies, and on the other hand, has increased the price of products. Fall in prices of cement, escalation in prices of inputs namely furnace oil, electricity and paper bags have played havoc to the cement industry.

Before the economic crisis in Armenia, total industry spending for research and development had the significant proportion in improvement of building materials' quality, features and variety.

Beginning from the 1990 the volume of produced building materials has began to decrease because of crucial economic changes. The crash and low level of demand to for building materials have increased unemployment level in building materials' industry. A number of enterprises in this branch were closed or continued to work partly. It brought a rise of the unemployment rate in this industry.

Many potential investors for Armenia think that the high taxes prevent the process of investment in production. This study have shown, that as a perspective branch of AR's economy development, building materials production needs differentiated tax rates for investment process. Foreign trade regulations are mainly done by tax policy, which tries to eliminate the importing of some types of building materials from Iran and Turkey.

In addition, demographic trends are part of the sociocultural aspect of the societal environment. Corporation's internal environment and strategic management process must be very flexible. Some sociocultural forces influence on demand of building materials strongly. For example, the rate of family formation, which has decreased related with the economic conditions. It is one of the reasons of declining of civil construction. In Armenia it has created a surplus of building materials in early 90s. Another influence have the declining growth rate of population and day by day rising problems of immigration or regional shifts of population.

The determinants of industry profitability:

1. The value of the product to customers.

The value a company creates is measured by the amount that buyers are willing to pay for a product or a service. The company is profitable if the value it creates exceeds the cost of performing value-creation functions, such as procurement, manufacturing, and marketing.

2. The intensity of competition

The industry of building materials contains 10 large and about 10 small and medium enterprises.

The study the rivalry among these firms: Karitas, Hantsman, and Reinforced Concrete Companies #1, #5, #7 have shown that there is a quite intense rivalry among these reinforced concrete companies. They are few and roughly equal in size, that's why they watch each other carefully, and any move by another firm is matched by an equal countermove. However, each one tries to do its best to be in a position to

dominate the industry. For Karitas we can say that its product is unique because of very high quality. The buyers are sure about its guaranteed quality and therefore are willing to pay more for Karitas' product than for its competitors' products. Besides, Karitas attracts its customers by its excellent service. It has its own machines to move the product to the places the buyers need. (We learned it from its manager, when visiting there). In contrast of other building materials producing companies, Karitas uses high quality gadge and cement. For their reinforced concrete production they use higher quality, stable, and non-flexible metals [10].

About Karitas capabilities we have found out that its products have smooth surface, while its competitors' similar products have rough surface and are non-attractive. Automatic management is one of its strengths, too. Other strengths are product uniformity, technical rigging, and availability of very good templets and so on.

Rivalry is quite a strong force for these companies producing the same types of products and they must do their best to be incompeatible in order to be able to earn more profit. As the demand is low, there are almost no stimuli for build materials producing companies to be concern about product development. The aim for process innovation is cost reduction and an increase in product quality and the managers have done lots of things in this way. They have enough success in obtaining higher quality product but, unfortunately, they have not succeeded in reducing costs. Till now their product cost is rather high.

SWOT analysis in building materials industry:

Strength

High quality of product

Weaknesses

-Small sales volume because of low level demand.

Economic situation and sharp reduction of living standards of population have become the major reasons for reduction of production.

-Lack of financial resources

The lack of circulating resources leads to serious difficulties for purchase of raw materials, tax payments and transporting costs.

Opportunities

-Extend cost advantage

-New products based on advanced technology

-Entry barriers for other companies

Threats

-Changes in demographic factors which bring a reduction in demand

-Large scale importation of building materials

-Slow recovery of economy

TAXES, PRODUCTIVITY AND ECONOMIC GROWTH

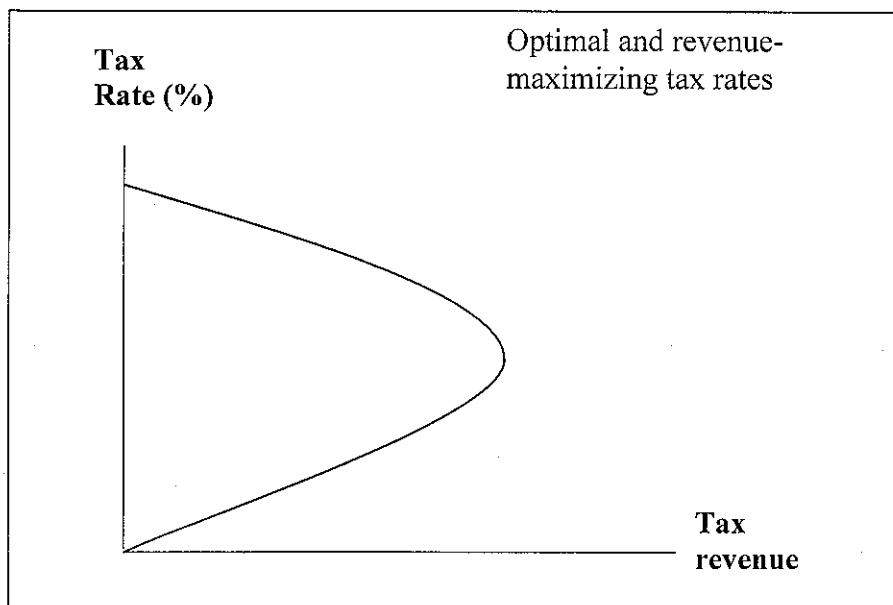
As our aim is to discuss how the taxes influence on the productivity of the building materials industry, have been studied the taxes, productivity and economic growth in general. The evidence suggests that taxation and public spending are not harmful to productivity growth. On the contrary, they are helpful. In undertaxing, the government puts at risk the ability adequately to advance productivity growth, competitiveness, and therefore the well being of people. If this is so, the income gains secured in the short-run through low tax levels will be small relative to the income losses associated with a diminished ability to achieve high rates of economic growth. In the long run, comprehensive tax reform could greatly reduce the harmful side effects caused by the tax system, benefitting taxpayers and encouraging economic growth. Reforms can be made to both the tax base and tax rates. The tax base is the items and transactions that are taxed; the tax rate is the percentage of the tax base that the taxpayer has to pay the government.

The optimal and revenue-maximizing tax rates

In the case of each tax, it is important to recognize the distinction between the optimal tax rate and the revenue-maximizing rate. Taxes provide the government with revenue, but they also squeeze out productive activity. At the optimal tax rate the government's use of the additional tax revenue provides net benefits to citizens that are sufficient to cover the cost of the productive activity squeezed out by the tax. The optimal tax rate balances the value of the lost output against the value of what might be provided with the additional revenue; it is the best rate for the economy.

In contrast, the revenue-maximizing rate ignores the cost of the lost output accompanying the higher tax rate. It focuses only on whether a higher tax rate will generate additional revenue. The revenue derived from a tax is equal to the tax rate multiplied by the tax base. Higher tax rates cause the tax base to shrink. At the revenue maximizing tax rate, the revenue reduction due to the shrinkage of the tax base exactly offsets the revenue gain due to the higher rate. Here we consider it important to insert Laffer's curve to make our explanations understandable [6].

It illustrates the revenue-maximizing tax rate and its relationship to the optimal tax rate. As the tax rate (measured on the vertical axis) increases, tax revenue (measured on the horizontal axis) initially expands. However, as the tax rate continues to increase the tax base (productive activity) declines, causing revenue to increase less than proportionally. Eventually, at the revenue-maximizing rate (point A), the shrinkage in tax base is so large that a higher tax rate fails to generate any additional revenue. Still higher rates actually reduce the revenue.



As the revenue-maximizing rate is approached, output declines and the tax base shrinks by such a large amount that a higher rate fails to raise additional revenue. Because the "excess burden" of taxation (loss output) is so large relative to the revenue raised, tax rates at or near the revenue-maximizing point harm the economy. The optimal tax rate is always lower- generally substantially lower- than the revenue-maximizing rate. In figure the optimal rate is a point such as B, C, or D rather than point A.

This analysis highlights the destructiveness of high marginal tax rates, which are the rates applicable to the additional earnings of a taxpayer. Even as high marginal rates distort prices, reduce production, and encourage wasteful tax avoidance, they also shrink the tax base so much that they generate little additional revenue. In some cases, the government would actually collect more revenue if the high marginal rates were lowered. Studies indicate marginal income tax rates greater than 40% fall into this category.

Given the distractive impact of high marginal rates on output and the efficient use of resources, governments should avoid imposing tax rates in the range above or even near the revenue-maximizing rate.

To illustrate the linkage between the taxation and productivity growth, we used the Internet, *EBSCO Publishing* and did some studies [2]. Raising taxes might stimulate productivity growth by permitting more public sector capital formation. If output is viewed as a positive function of both private and public investment, and each facilitates efficiency, then an increase in public capital would raise productivity to a level higher than it would be without such investment. If the countries where the tax revenues as a

percentage of gross domestic product grew the most were also the ones in which public sector investment increased most rapidly, then the causality ran from tax revenues to productivity as well as vice versa.

Productivity growth may stimulate further productivity growth by making it relatively easy to increase the size of the public sector. The positive contribution the public sector can make toward increasing the productivity of an economy, however, has only recently begun to receive the attention it deserves. The contrary argument is much more frequently voiced; there is a widespread belief that enhanced public sector harms productivity because rising taxes constrains private investment. This is clearly incorrect. The Japanese not only have the highest public sector investment rate, but their private sector investment rate is also exceeded that of the other nations. Similarly, capital formation in the United States was the lowest both in the public and private sectors [2].

There is a clear relationship between the growth in the tax burden and advances in productivity growth. The country in which productivity growth was greatest-Japan- was also the country where the increase in the tax burden was the highest. The nation that saw its tax burden grow the least -the United States-also saw zero gain in productivity over the last decade and a half. This suggests that productivity growth may be positively, not negatively, correlated with increasing tax burdens. Thus, the countries in which tax revenues as a share of GDP increased the most tended to experience higher rates of growth in total factor productivity than those in which the growth in tax revenues was relatively small. Evidence of a positive relationship between increases in tax revenues and productivity growth does not, however, indicate the direction of

causality. In principle, a rising tax/GDP ratio could either be the cause or the consequence of a relatively rapid increase in productivity growth. Causality runs from productivity growth to the tax ratio rather than the obverse. [2]

As for Armenia, the high tax burden couldn't bring to high productivity growth. Our government has defined low rates of taxation being sure it will lead to higher productivity growth.

THE INFLUENCE OF TAXES ON BUILDING TRADE INDUSTRY

In recent years the productivity performance of building materials has been inferior to that of other products, for example the productivity of agricultural products, which is more developed branch. Table 1 provides information of the annual increase in productivity of the different types of building materials. The data are structured in this way to make a dual comparison: the economic performance of cement producing companies measured against tufa producing firms and also compared to other types of building materials companies.

Total factor productivity is an important indicator because it considers output as a function of the principal inputs of production: capital land and labor. It is the most reliable index to which the branch is increasing most efficiently in its use of productive resources. The rate of increase of total factor productivity is, therefore, the most important determinant of the change in the branch's economic indicators.

The most important aspect of the issues raised by us is whether the productivity problem in building materials production is related to AR's tax structure and how.

Specifically have been examined whether the productivity growth is limited against the volume and composition of taxation in this branch. Table 1 presents data on tax revenues as a percentage of the gross product for the separate type of building materials. Expressing tax revenues as a percentage of the size of gross product is the way to show the relative burden of taxation in the certain group of companies producing products of the same types.

Table 1: Tax revenues as a percentage of gross income in building trade industry.

	1997	1998	1999	The beginning of 2000
Cement	29.2	29.0	29.2	30.3
Tufa	19.7	20.9	25.4	30.6
Granite	33.1	34.6	39.0	39.5
Marble	30.0	30.5	30.9	31.0
Pumice	28.0	28.3	28.3	29.1

During 1997-2000 the tufa producing companies tax burden has grown the most while the cement tax burden has grown the least. It is explained by the fact that in tufa producing companies the volume of new created product is comparably low than it is in cement production. For example, in tufa producing companies 1/6 of payments to budget is fixed payments (land tax, property tax, and environmental protection payments). Besides, the organic composition of capital used in these companies is very low and obsolete. As a result, fixed expenses have very high percentage in gross product volume.

In table 2 we introduce the VAT as a percentage of all tax revenues for the building materials production. As we have mentioned, the VAT is a tax that occurs at each stage of production. It taxes the value added by firms, that is the summation of wages, interest, rents, and profits. As such it excludes from taxation the purchase of materials and capital

goods by one firm from another. The VAT as a % of all tax revenues is high for tufa and granite producing companies. It is mainly explained by the fact that the stages of production and elaboration of tufa and granite are more than those in other, for example, cement production.

Table 2: VAT as a percentage of all tax revenues for the building materials' companies

Cement	8.2%
Tufa	10.3%
Granite	9.7%
Pumice	8.8%

We also illustrate the relationship between particular building materials productivity level and the increase of tax revenue. Table 3 shows the data. In cement production the productivity growth results in significant increase of tax revenue. Similar relationship exists in production of granite and marble and tufa. While in pumice production the rate of productivity growth is slightly different from the rate of tax revenue increase.

Table 3: Average annual increase in total factor productivity and in tax revenues in percentage.

Name of production	Productivity growth (%)	Tax revenue increase (%)
Cement	1.8	7.2
Tufa	1.1	2.7
Marble	1.3	2.5
Granite	0.7	6.3
Pumice	0.5	0.6

THE TAX POLICY OF ARMENIA AND ITS APPLICATION TO BUILDING MATERIAL'S INDUSTRY

In 1991-1992 after the collapse of soviet system the country's tax legislation was formed greatly based on the behavior of the economic policy attributable to previous period. This tax legislation was subjected to substantial reforms in 1997-98 when the new tax laws were admitted based on international standards. This brought some changes in previously absolutely fiscal tax legislation and in acting system. The separate practical mechanisms of realization of tax policy make the whole economic policy's efficiency vulnerable because the application to legislation dual standards also has got multifarious outcomes in this field. In the result the taxpayers acting in legal field are appeared in the conditions of unequal competition and the scarcity of means.

Types of taxes and tax privileges acting in Armenia [3].

The following types of taxes are determined in the RA:

-Profit tax, Income tax, Excise tax, Value added tax, Property tax, Land tax.

The tax legislation has determined the following types of tax privileges:

Reduction of the object of taxation, reduction of the tax rate, reduction of a tax, deferment of tax calculation, deferment of tax payment, exemption, reduction, deferred payment of fines and penalties established by the tax legislation the application of which we discuss in the building trade.

Profit tax

Profit tax is a direct tax to be paid by taxpayers into the state budget in the amount and according to the procedure established by the law. The residents of RA and non-

residents, with the exemption of budgetary institutions and the General Bank of the RA pay the profit tax in the RA.

Taxable profit is the positive difference between the gross income of the taxpayer and deductions (expenses, losses, etc.).

Profit tax rates

The amount of the profit tax in respect to the taxable profit is calculated according to this table:

<i>Amount of the taxable profit</i>	<i>The profit tax</i>
up to 7 million drams	15% of taxable profit
in excess of 7 million drams	1.05 million drams plus 25% of the amount exceeding 7million drams of the taxable profit.

The volume of profit tax paid by building materials producers is the biggest in the "relationships with the state budget". The profit tax for whole branch was about 50,000,000 drams in 1999 and 45,000,000 drams in 2000.

Now we are going to discuss several important articles of "On profit tax"

Article 16 of law on profit tax is about the expenses not subject to deduction from the Gross income for the purposes of taxation. Building materials producing companies make some unavoidable expenses exceeding the rates of payments established by the government of the RA [1].

- a) The government of RA made a decision restricting the amount of expenses for the pollution of the environment. The payment for the pollution exceeding 0.5% of

gross income is not considered as an expense and the company need to pay taxes on that exceeded amount, too.

For example, in 1999 gross income for the branch was 4,200,000,000 drams and expenses of the payments for the pollution were 21,840,000 drams. Expenses on the pollution must be no more than 0.5% of gross income i.e. 21,000,000 drams. But, as we see, they were exceeded by 4% of the required amount.

As for "Karitas Italiano" company, its gross income equals to 185,655,000 drams. Last year it imported high quality antipollutant equipment for the price of 950,000 drams. Besides, it has paid 813,000 dram for environmental pollution. In total, it cost them 1,763,000 drams. The enterprise calculates its financial profit by deducting this amount as an expense. However, when determining taxable profit the tax authorities do not deduct expenses exceeding 0,5 % of gross income. So, the remaining 834,725 drams are not considered as expense for the purpose of taxation. Therefore, the enterprises in Armenia avoid doing large expenses towards environmental protection. This is the one of the negative influences of taxes on build materials.

Air pollution in building materials production results mostly from cement, mineral materials, and basalt productions through the mining and elaborating of natural stones.

While it is difficult to measure precisely the harmful effects of pollutions, they are known to create damage to health in form of breathing illness. The external cost of environmental pollution can not be internalized by the assignment of clear property rights and so government intervention is required. This takes the form of *regulation and taxation*. There are generally two ways to achieve the optimal amount of pollution control: direct regulation and effluent fees, which brings the private cost

of pollution equal to its social cost. The effluent fee is a tax that a firm must pay to the government for discharging waste or polluting [5]. Based on the information of the Ministry of Environmental Protection, last year the effluent fee paid by whole branch of build materials has been increased by 3,4% comparing with that of 1998 [4]. It was 1,500,000 drams in 1998 and became 1,551,000 drams in 1999. This increase is mostly explained by the exploiting of new ores.

- b) Expenses exceeding the rates on special nutrition, uniforms, and other equipment for the employees as well as other types of compensation defined by the legislation. Gross income is 5,700,000,000 drams for the branch. Its 0.3% which must not be exceeded, is 17,100,000 drams. But it was 17,356,000 drams, i.e. it exceeds the needed amount by 1.15%. Hence it must pay 25% of the exceeded amount, 64,000 drams. Although it is small amount for the branch, it may loose a significant amount in total, as there are enough such restrictions.

Next very important article "on profit tax" is article 19-Expenses not Supported by Documents.

As the head of the department of "Taxation Reforms" in the Ministry of State Revenue mentioned, tax aversion via "without document" business activities creates in all branches of industry a great problem. The unofficial sphere of production and realization of build-materials as well as the realization without documents must be decreased by the strict taxation policy. Article 19 tries to regulate this aspect:

The expenses defined in the above mentioned paragraph when determining taxable profit, the gross income may be reduced in the amount of 1% of the gross income, but

not to exceed the expenses amounting to 1 million drams incurred and not supported by documents [8].

The next change concerns to foreign investments: there are some privileges of a resident with foreign investments. In case when the total amount of investment in the equity capital of a resident with foreign investments, actually performed by foreign investors after January 1, 1998 constitutes at least 500 million drams, the amount of the profit tax for the resident in question is reduced by 100% for the next two years and by 50% for the proceeding 7 years [3]. For example, in April 1998 Italian counterparts bought "Maralik marble" company for \$1.1 mln and have not paid profit tax till April of 2000. They have to pay 50% profit tax till 2007.

The other critical question in tax accounting of building materials producing companies is what fraction of fixed costs can be deducted from its revenues in any year. The amount of that deduction is referred to as tax depreciation.

Point 4 of Article 12 "Depreciation Allowances" sets that for the purposes of determination of the taxable profit, the tax payer may choose depreciation period of the fixed assets at its discretion other than already defined by Government, but not less than the one of the mentioned periods for the given group by Tax law. For example, "Building stone" Ltd. in Artik, producing tufa, has fixed assets in volume of 10,693,000 drams, 6,460,000 drams of which is the price of buildings, constructions and transmission devices.

For calculating 1999 year's profit on tax the company had deducted from the year's gross income of 437,000 drams as depreciation expense. Tax authorities did not adopt the chief accountant's "tax on profit" report as a correct one, because it had

contradicted the Article 12. According to that the chief accountant might deduct 323,000 drams ($6,460,000/20$) from the company's gross profit each year as an expense. As a result, the taxable profit was reduced by 114,000 drams (437,000-323,000). Here we see the linkage between tax policy and size of investment. The more depreciation a firm permits to deduct from its revenues, the less taxable income it will have. The faster depreciation reduces the tax liabilities of companies. On the other hand, the slower method of depreciation distorts investment decisions, by favoring capital-intensive industries over labor intensive industries.

The tax savings are intended to encourage more investment in machinery, equipment and buildings.

There is a link between the tax policy and the level of investment. The user cost of capital is the pre-tax return on a new investment that is required to cover the purchase price of the asset, the market rate of interest, inflation, risk, economic depreciation, and taxes. This capital cost concept often is called the "hurdle rate", because it measures the return on investment and must yield before a firm would be willing to undertake the capital expenditure. Economists are in broad agreement that capital costs are affected by tax policy: The higher the tax on investment, the less investment will take place [6]. That happens in the building materials producing companies, too. Under extreme economic hardship, Armenian Republic throws open its doors to foreign capital and investment. A large-scale privatizing effort is underway and opportunities exist in industries including building material production. In many cases, such investments are available at a substantial discount to their true value.

Value added tax

Value added tax is an indirect tax, which in compliance with the law is paid to the state budget for imported goods, at all stages of their production and turnover, as well as provision of services on the territory of the RA.

The object of VAT taxation is the total value (turnover) of all the transactions, implemented by the VAT taxpayers within the territory of the RA.

VAT rates

The rate of VAT is determined in the amount of 20% of taxable turnover of goods and services. The amount of VAT within the amount of the total indemnity for the goods and services (including 20% rate) is determined at the rate of 16.67%.

It is important to speak about some effects of the reform of VAT on the building trade. For example, the law on the VAT (Article 16) which sets that zero rate of VAT shall be applied to the taxable turnover exported outside the RA, now stimulates the companies to export larger amount than they used to do in previous years. We can bring the example of Ararat Cement. In 1998 it exported its cement in amount of 296,500,000 drams, and after this law it expanded its exports to 432,343,000 and 592,630,000 drams respectively in 1999 and 2000. There is one more influence of VAT to take into account. Till 1998 our markets were abundant with different types of Iranian and Turkish build-materials. Especially large amount of cement was imported from Iran. For some period our consumers prefer it to local cement for its cheapness even though

the Iranian cement had much less quality than our's. Pretending as they were interested in investment in Armenia, the Iranian producers had deeply learned the moves in our build-trade and then offered their own cement into our market even for less than the amount it cost us to produce. Armenian tax policy reacted it defining the Article 6 on VAT, which sets:

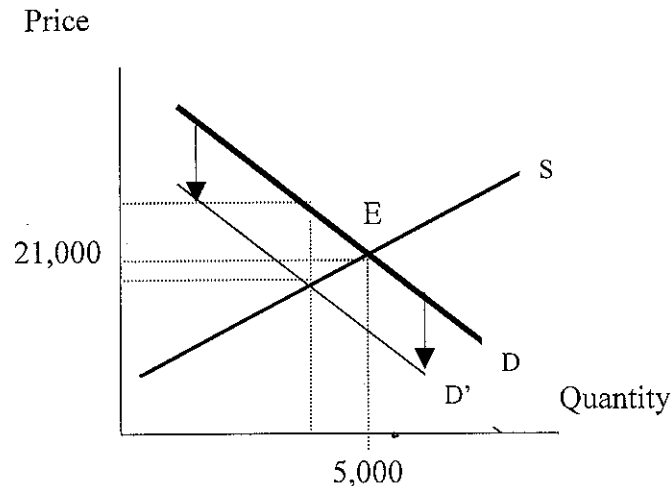
VAT shall be calculated and imposed by the customs bodies on the border of the RA on the goods imported into the territory of the RA (with some exceptions not important for the case).

As a result the volume of the imported cement decreased by about 50% which enabled our local producers to make more profit. This is seen especially for "Hrazdan Cement" which tried to enlarge its production after the adoption of this law. At the beginning of 1998 its production volume amounted to *1,005,300,000* drams, in 1999 it reached to *1,357,350,000* drams. However, in 2000 its production volume decreased to *1,295,243,000*, which was explained by low demand of consumption at present.

Other thing about VAT we think is worth to speak about, is its taxation cut-off equal to 3mln drams (Article 3). The VAT shall be calculated and paid for the amount exceeding three million drams from the moment when the total amount of revenue derived from the realization of the transactions exceeds three million drams while implementing any transaction in the course of the current and the three proceeding quarters. This rule is applied to exclude from the tax field the small taxpayers for which the taxation is not efficient. It enables them to resist the competition in the branch. Eventually, it brings some reductions in the market prices of building materials. Several small build-materials enterprises (among them "Kharnaran" and

“Letoid Pumice”) made use of this privilege. “Letoid Pumice was founded two month ago and now it is mining experimentally.

In the end we are trying to analyze the effect of VAT on sales in general.



We tried to illustrate the economic incidence by the example of Cement sales. Each tone of cement is 21,000 drams. Let’s see how VAT affects the equilibrium. This figure shows the market for cement before and after the imposition of VAT of 4,200 drams (20% of 21,000). Prior to the imposition of the tax, the market is in equilibrium at point E, when 5,000 tones are sold for the price of 21,000 drams. When the tax is imposed, the downward shift in demand moves the equilibrium to point F, which corresponds to smaller quantity than point E does. Imposing a VAT reduces quantity besides; it causes the equilibrium price to fall by some amount less than 4,200 drams.

In this case $\frac{1}{4}$ of the tax is being past on to the suppliers and demanders are paying $\frac{3}{4}$.

The excise tax

The excise tax is an indirect tax paid to the budget. The excise tax is paid by individuals, legal persons and enterprises without the status of a legal person

producing and selling in the RA, as well as importing caviar, beer, grape and other wines, wine ingredients, spirits, cigars, cigarillos and cigarettes with tobacco, petrol, diesel fuel, apparel and accessories made of natural leather, natural furs, jewelry fancy articles to the RA.

There are certain tax rates established for certain group of products. In construction materials branch there are two enterprises the products of which are taxed with excise tax. They are Yerevan porcelain enterprise "Armfarfor and Arzni Bureghapaki" producing crystal articles. Excise tax shall be paid on the sales revenue of goods subject to taxation by 25%. Sales of goods exported from the RA are not subject to excise tax. 16% of produced porcelain goods are exported from RA to Akhalkalak and Akhaltskha (Georgia) by previously done orders. What concerns to "Arzni Bureghapaki", the Belgian counterparts are interested in this enterprise.

The property tax

The property tax is a direct tax to be paid for the property, which is owned by the taxpayers in virtue of the ownership right or complete economic disposal in the amounts and according to the procedure established by the law. The property tax doesn't depend on the results of the taxpayers' economic activity.

Amount of fixed costs is a problem for building materials producing companies. It is connected with the amortization of facilities and the taxes on fixed assets. They have to amortize even those machines, which are not in use. The chief accountants of the companies have tried to find ways to solve this problem in favor of the company.

The property tax paid to state budget by whole branch was the same amount of 125 mln drams for last three years. This amount was constant because the value of newly bought machinery is nearly the same as the value of the written-off equipments

Tax debts

The debts to state budget have been increased during the first half of 2000. (Picture 1)

Most build-materials producing companies have significant tax debts, which is a result of unpaid realization of their products [1].

We have collected some data about the main companies' tax debts.

Main taxpayer in construction materials branch is "Ararat-Cement" ejsc.

It has tax debt to budget in amount of 374,455,000 drams, 110,000,000 drams of which constitute fines and penalties.

The next taxpayer in building materials branch is "Hrazdan-Cement" Its tax debts to budget are 150,634,000 drams in which fines and penalties are 34,175,000 drams.

Yerevan Granite and Ani Pemza do not have any debts to the budget.

And these are the data about **the tax debts** of "Build Stone" Ltd. existing in Artik: All numbers are given in Armenian drams (AD).

Name	In 1998	In 1999
VAT	2,252,000	2,560,000
Income tax	577,000	807,000
Property tax	75,000	119,000
Land tax	66,000	137,000
Natural resources	237,000	295,000
Mandatory Social insurance	292,000	398,000
Pension fund	1,157,000	1,400,000

As we see, all tax debts have been increased since 1998. It can be explained by the fact that the sales have been occurred but the buyers don't pay the money in time.

Building materials producing companies, metallurgical and chemical plants receive some privileges from government for paying tax debts. Particularly, they are allowed to redeem their tax debts after reaching to the minimal level of profitability [4].

TABLE: Levels of State Revenue

Revenue sources (billion drams)	1998	1999	2000
Total revenues and grants	168.66	194.59	206.57
% of GDP	17.6%	18.6%	17.5%
Value added tax	59.51	67.75	77.22
Profit tax	12.29	17.80	17.00
Personal income tax	13.49	12.80	11.70
Excise tax	19.88	28.33	31.90
Property tax and land tax	0.31	0.46	0.09
Customs duties	10.48	7.84	8.70
Presumptive tax	3.91	6.97	3.00

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Interview with:

- Mr. Yuri Kazumyan, president of association “Armbuildmaterials”
- Mr. Suren Karayan, head of “Taxation policy” department in the Ministry of Finance and Economics.
- Mr. Artur Ashughyan, head of “Build. Materials” branch.

-Mr. Sasun Hayrapetyan, head of the "Taxation reforms" department in the Ministry of State Revenue

-Directors of "Artik-tufa", "Karitas", "Granit-Vayk"