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INNOVATION AND ESTONIAN TAXATION SYSTEM

JEL classification: E62, H20

Abstract

The economic crisis of 2008-2010, which has hit the world, especially the Baltic States with their ultraliberal economy, has forced Estonia to look for solutions to overcome the depression. A low level of taxation, the policy of "thin state policy" and small public sector have influenced the macroeconomics of Estonia since it re-independence. The indirect taxes, especially consumption taxes, are dominating in Estonian taxation system.

The increase in the tax burden of a little more than 2% in 2009, through the increase VAT and excises, and through the pruning of income taxation benefits, did not enlarge the state budget in the same amount. The pruning of the budget not only rapidly decreased the internal market of the state, but also decreased incomes in future periods due to the dominance of consumption taxes. The economic depression, which began in 2008 has demonstrated a weak orientation of Estonian economy, threaten its taxation system on innovation. The author considers the reason of it to be in a big percentage of consumption taxes in Estonian state budget. The amount of investments has essentially decreased than the decrease of GDP and state budget.

Key words: taxation, tax burden, economic crisis, innovation

1. INTRODUCTION

This paper does not deal with the direct role of the state in the innovation process. We are trying to observe influence of some aspects of the Estonian taxation system on private entrepreneurship and respectively on innovation. The Republic of Estonia has driven the policy of a "lean state". This is why costs in most fields, among them scientific research and especially R&D have been low and the role of entrepreneurship in innovation processes has been important.

Any kind of entrepreneurship needs a specific environment for its development. Environments can be of different kinds: social, economic, technological, ecological, legal and so on. A positive cumulative effect of all these environments is needed in order to obtain maximal results, whereas deviation by any of them may induce conspicuous consequences for entrepreneurship.

Nations are interested in developing their economies. After the demise of the centrally planned economy, all the newly independent countries have become interested in an economic environment that supports entrepreneurship. At the same time, it is quite difficult to change many of the components of the entrepreneurial environment, especially in the short run. Economic policies try to coordinate some of the most important changes in the components of the economic environment. As entrepreneurship has the purpose of generating profit, thus it is very important to regard the profit margin as a guiding force in entrepreneurship (Mises, 2000, 13).

Estonian experiment with the virtual lifting of corporate income tax since January 2000 sought to create additional resources for investments in the private sector. As the money was left for the enterprises without any limits, so a question arose: if the money was used for investments, were they made in Estonia and were the investments innovative?

The economic crisis, which has lasted 2007-2010, has decreased GDP by more than 20% and essentially decreased the state budget (in spite of the raising of taxes), and posed a question about the efficiency of the Estonian state budget and its correspondence with modern demands. Certainly, tax as the most important source of state budget income is a question of special interest. As the tax funds of the last two years demonstrate, the current taxation system has not been able to ensure the stability of budget incomes despite the raising of taxes. In explaining the severe decrease in the state budget, we could ask what role the economic crisis and the specificity of the Estonian taxation system had played. Particularly, what have been the impacts of the tax burden, taxation structure, payment order etc. (the economic policy of government), especially budget paring, on an essential decrease in tax funds?

Let's observe only one question of this complicated complex of questions. How has the decrease in the incomes of Estonian state budget taken place; and what connection exists between this process, the theoretical indirect taxes model and the Estonian taxation system, especially with the structural specificity of taxes? The second problem considered is the influence of budget paring on eventual tax funds. It is obvious that if the budget income, which is anyhow small, were to decrease, then there would be a brake on the state's capacity to support innovation. Direct investments and state support for R&D would be decreased.

A special model for the research was not constructed by the author. The most wide-spread methods of economic research have been used in the paper – comparison, analysis tables and observation of dynamics; these methods proved to be effective in current situation. The data are given in euro. The official rating of EEK to euro before 2011 was 15.6466 all the time.

1.1.Estonian taxation structure

Before joining the European Union (EU) and from its beginning in 1993, the characteristic features of Estonian tax system have been a relatively low tax burden, simplicity bordering on primitiveness (which has significantly reduced the possibilities of using taxes as a control device in the economy) and a very high percentage of indirect and consumption taxes.

The tax burden in Estonia has been 33.7–35.1% since Estonia joined the EU (Estonian ministry of finance website http://www.fin.ee/). The tax burden ought to increase to 36% as a result of taxation rises in response to the economic crisis in 2010 (ibid). It is lower than the EU average (40–41%). However, these numbers are not comparable. The Estonian state budget includes social benefits tax,

which has for many years been the greatest source of income for the state budget (Table 1). In most EU Member States such a tax does not exist or is slight.

A principal change was introduced in the tax system on 1 January 2000: corporate income tax was lifted in Estonia. The idea of using low taxes to attract-foreign investments is not new; all offshore systems are based on this. Nor is it a new idea that profits ploughed into real assets will increase the value of these assets, thus enabling the assets to reproduce themselves. The lack of internal accumulation accrued in all transition countries, which did not merely constrain enterprise innovation, but became even worse at simple reproduction. Yet, theoretical arguments by both authors of the reform and those applying the reform ideas in Estonia are open to challenge.

Lifting the corporate income tax in Estonia can be regarded as an experiment which turned the notion of the "object of taxation" upside down. It has become a common concept that entire profit be subject to taxation, only certain ways of using profit (for example payment of dividends, specific benefits, etc.) have been made objects of taxation. As such, the law should provide an exhaustive list of ways of using profit subject to taxation, instead of barely mentioning the tax incentives. However, no list can be entirely exhaustive. Consequently, opportunities for tax fraud present themselves here, all the more so because quite often virtually the same payments can go by different names.

Estonian taxation practice differs from that of many countries also in the timing of the creation of tax liability. According to general practice in many jurisdictions, corporate income tax liability arises instantaneously as the profit amount has been confirmed. Possible delays can be caused only by verifying accounting statements or by settling accounts. Under Estonian law, however, the profit earned can remain intact on the companies' bank accounts for years as it is not subject to taxation unless being used for out-payments.

Savings are a natural source of investments. In the transition period for states with small GDP and most households being unable to satisfy their primary needs, savings make up a small percentage of GDP. In 1998, domestic savings in Estonia were about 20.3% of GDP, at the same time domestic investments made up 16% of GDP (Eesti Panga Bülletään, 2003, 1 p.7). Obviously, the difference is due to certain historical characteristics inherent in the states undergoing transition in the second half of the 20th Century. The demand that had not been satisfied for decades and was typical of the communist system before its collapse could be satisfied now and households have used their money to consume it not for investments. The information below explicitly indicates a relatively low level of domestic investments, and more particularly, their small total amount. Investments are one of the most important inputs for production, and their scarcity in a certain period is an extremely. The Estonian Institute of Economic Research has sampled that the insufficiency of investments was in first place among the factors that broke the economy in 1993–1996.

It is very difficult to find a connection between the lifting of corporate income tax and levels of foreign direct investments (FDI). The expansion rate of GDP depends on the economic cycle more than on FDI. The influences of other factors such as business expectations and the niche for international companies in the Estonian market have been greater than the impact from lifting corporate income tax.

Certainly, a question will arise: why have the foreign direct investments into Estonia remained below the level expected? First, the most profitable fields of economy in Estonia had been acquired by foreign owners already before 2000. Secondly, it should not be forgotten that the rate of income tax is just one of the factors by which investors choose the place their investments. Thirdly, the competitive ability of Estonia and Eastern Europe in engaging foreign investors has not been dealt with. In 2002 the corporate income tax for the EU-25 was 2.4% of GDP (Maggiulli, 2004, p17-18). The Estonian figure of 1.7% is not sufficiently different from this average to be an effective incentive. Moreover, this figure was still smaller in Latvia, Lithuania and Croatia. In Estonia and Slovenia the corporate income tax indicators were almost identical. Estonia is not much more attractive with its investment taxation policies. Moreover, many states such as Croatia, Lithuania and Slovakia, where special benefits are not taxed, are not less attractive for investors in terms of profit taxation.

Table 1. Income from taxes in Estonian state budget 2005–2012 (million euro).

	2005	2006	2007	2008	2009	2010	2011	2012

Total taxes	3440	3528	4328	4499	4076	4046	4341	4775
Personal income tax	697	246	306	277	155	192	209	266
Corporate income tax	152	200	261	266	255	194	201	252
VAT	896	1192	1425	1313	1202	1248	1339	1494
Excises	411	449	524	574	627	666	717	776
excise on tobacco	77	77	98	119	133	115	153	158
excise on alcohol	117	133	148	155	166	165	198	195
excise on fuel	215	238	278	300	311	311	355	390
excise on packaging	…	1	…	…	…	….	…	….
Gambling tax	19	16	30	31	18	21	22	20
Customs tax	22	17	35	32	20	24	29	29
Social benefits tax	1175	1390	1743	2000	1795	1698	1801	1933
Other taxes	68	3	4	6	4	4	23	15

Source: author's calculations (Estonian Ministry of Finance website http://www.fin.ee/budgeting/; Eurostat. Taxation http://epp.eurostat.ee.europa.eu/portal/page?-pageid/)

As for innovation, a certain aspect should be stressed – because the Estonian taxation system allows enterprises to keep their profit without taxation for an unlimited time, the enterprises do not have a strong incentive to spend the money quickly or for innovative purposes (Eesti Vabariigi…, 2008 p.188; Eesti Vabariigi…, 2009, p. 93).

Table 1 presents taxes in the Estonian state budget from 2005; that is, after Estonia joined the EU. It is difficult to assess the percentage of indirect taxes in the Estonian state budget. Indirect taxes clearly include VAT, excises and the customs tax. The percentage of indirect taxes has been 53.6%. It is one of the highest percentages of indirect taxes among EU member states.

The figures demonstrate a growing dominance of social taxes in Estonian state budget tax funds from 34.2% in 2005 to 44.4% in 2008 (44.0% in 2009). The crisis, which began in 2008, froze the sums paid as wages in 2009 due to unemployment and led to the decrease in social taxes. It dented the state budget of Estonia and essentially cut the size of the budget for 2010. Clearly budget incomes, which are based on consumption taxes, have great elasticity during periods when incomes and consumption are rapidly growing, but a system of this kind has a low floatage (Table 1).

The figures in Table 2 demonstrate once again that the tax funds react to GDP changes with some lag time. The peculiarity of the state budget of the Republic of Estonia – a great proportion of which is consumption taxes – produces a pattern whereby the tax funds are in correlation with the dynamics of wages (especially in 2008) rather than the dynamics of GDP. A smaller decrease in tax funds in comparison with GDP in 2009 has occurred from the growth of the turnover taxes rate by 2 percentage points, the increase of excises and the pruning of income tax benefits. The concrete influence of rising taxes and the influence of price elasticity on tax funds cannot be explained here.

Table 2. Dynamics of tax funds, wages, unemployment and GDP 2007–2012 (as a percentage in comparison with the same quarter of the last year).

Period	**2007**				**2008**			
	I	II	III	IV	I	II	III	IV
GDP	9.8	7.6	6.4	4.5	0.4	-1.4	-3.3	-9.9
Tax revenues	27.6	28.4	18.6	18.2	10.2	5.7	7.1	-2.8
Average wage	20.1	21.2	1.,9	20.2	19.5	15.2	14.4	6.9
Unemployment (%)	4.0	3.9	4.1	4.1	4.2	4.0	6.2	7.6
Period	**2009**				**2010**			
	I	II	III	IV	I	I I	III	IV
GDP	-15.1	-16.5	-15.6	-9.7	-2.4	1.7	3.1	6.2
Tax revenues	-10.1	-12.1	-13.6	-10.9	5.7	-2.2	-1.0	2.2
Average wage	-1.5	-4.4	-5.9	-4.9	-2.3	-1.7	-0.7	3.9
Unemployment (%)	11.4	13.5	14.4	15.5	19.8	18.6	15.5	13.6
Period	**2011**				**2012**			
	I	II	III	IV	I	II	III	IV
GDP	11.4	12.7	9.8	4.0	3.4	3.5	3.4	3.7
Tax revenues	1.6	9.8	5.9	3.9	11.2	11.0	11.6	10.6
Average wage	4.4	4.2	6.5	4.1	4.1	4.2	4.3	5.9
Unemployment (%)	11.4	12.7	9.8	11.0	10.9	10.1	10.0	9.9

Source: (Estonian Ministry of Finance website http://www.fin.ee/budgeting; Eurostat. Taxation http://epp.eurostat.ee.europa.eu/portal/page?-pageid/)

1.2. Economic depression and the Estonian state budget

In some Eastern European states the economic depression 2008-2011 turned into a severe crisis which could be compared with the Great Depression of 1929–1932, especially in Estonia. Discussion of all these reasons is beyond the scope of this paper. But its range and course of crises 2008-2011 have been very different. As the crisis began in financial sector, so the states, wherein the income from the financial sector formed the greatest part of the GDP, suffered first of all. Due to urgent and powerful measures taken by these states the situation has been stabilized at this point.

Table 3. Indirect taxes in Estonian state budget 2005–2012. (million euro)

	2006	2007	2008	2009	2010	2011	2012
Total taxes	3528	4328	4499	4076	4046	4341	4775
Indirect taxes (social benefits tax included)	3084	3759	3953	3645	56923	3878	4230
Percentage of indirect taxes (%, social benefits tax included)	87.4	86.9	87.8	89.5	89.9	89.3	88,6
Indirect taxes (social benefits tax not included)	1694	2016	1953	1867	30351	2077	2297

Percentage of indirect taxes (%, social benefits tax not included)	48,0	46.6	43.4	45.8	47.9	47.8	48.1
Consumption taxes, social benefits tax included	3084	3759	3953	3645	56891	3857	4230
Percentage of consumption taxes (%, social benefits tax included)	87.4	86.9	87.8	89.5	89.9	89.3	88.6
Consumption taxes, social benefits tax not included	1694	2016	1953	1867	30329	2056	2290
Percentage of consumption taxes (%, social benefits tax not included)	48.0	46.6	43.4	45.8	47.9	47.8	47.8

Source: the author's calculations (data from table 1)

The state budgets have found themselves in an especially severe situation. The crisis, which began in 2008, frozened the sums paid as wages in 2009 due to the unemployment and it led to the decrease of social taxes. It beat the state budget of the Republic of Estonia and essentially cut the amount of budget of 2010. Obviously, the incomes of budget, which base on consuming taxes, have got a great elasticity during the periods, wherein the incomes and consumption are rapidly growing, but a system of this kind has got a low floatage. (Table 3).

The figures of Table 3 demonstrate once again that the tax funds react on GDP hangs with some lag time. The peculiarity of the state budget of the Republic of Estonia – a great proportion of consumption taxes – brings a peculiar fact: the tax funds are in correlation with the dynamics of wages (especially in 2008) rather than the dynamics of GDP. The consumption taxes in table 3 have been given in two different ways: with social tax and without it. Namely, Estonia has got a unique social tax, which forms up to 33% of the sum of paid wages and which therefore has been treated as consumption tax of labour force by several authors. The relative importance of consumption taxes in Estonian budget is very big no matter if the tax is considered to be consumption tax (approach, which could be debatable) or not (Raju, 2013, pp.137-139). A smaller decrease of tax funds in comparison with the GDP ones in 2009 has diversely been occurred from the lifting of tax burden (the growth of turnover taxes rate by 2 percentage points, the increase of excises, and the decrease of income tax benefits). The concrete influence of taxes lifting and the influence of prices elasticity on tax funds can't be explained here.

People divide their available income into two: savings and consumption. The proportion of the average saving per person was 7.9% from available income in 2008; in 2009 it was 9.2%. The rest of available income was spent on consumption.

It is possible to calculate the proportions of decreased tax income caused by the negative supplementary budgets of 2008 and 2009 according to the tax rates, proportion of savings and employment expenses mentioned above.

The first negative supplementary state balance was accepted on the 19th June 2008. The amount of the first state balance – 5.980.827 thousand euro, was decreased by 205 174 thousand euro (3.4%). Even two negative supplementary state balances were accepted in 2009. In the first, expenses were cut by 420 269 thousand euro (6.3%) and in the second they were cut by 163 835 thousand euro (2.4%).

The tax income was reduced as a result of the negative state balances by 49095 thousand euro in 2008, and in 2009 at first by 234955 thousand followed by another 66224 thousand euro, a total of 301179 thousand euro in 2009. Accordingly, the decrease in returning income due to the different structure of cuts was 23.9% in 2008 and due to the negative supplementary state budgets, 32.1% and 40.4 % in 2009. The wages fund, which has the highest percentage of returning income, was especially cut in the last supplementary budget (Eesti Vabariigi…, 2008, p. 188; Eesti Vabariigi…, 2009, p.93; Eesti Vabariigi… 2010, p.233)

We still have to consider one further aspect. Every euro that is paid into the state budget circulates about 2.8 times a year. Based on the assumption that circulation is 2.0 times since negative balances are made in the middle of the year, we calculate that the negative state balances have cut the state balance income for future periods by at least 0.7 billion euro or 41.8% from their own proportion.

It's clear that the decrease of the incomes from the budget decreased the possibilities of the state to support innovative processes. The decrease appeared in two ways: the decrease of direct money from state for different RD processes and the decrease of the support of a certain field of private sector. Both of them are difficult to bring forth.

The part of costs for innovation was first time so-called officially publicized in the statement of 2010 State Budget draft act. (They weren't mentioned in the statement of 2009.) The (initial) costs of R&D of 2009 have been given there. The total sum isn't very small – it's 129 million euro, among that 79 million euro due to foreign support. (Eesti Vabariigi 2010 … http://www.fin.ee/budget/). But unfortunately a methodology, which puts all the sums, connected with scientific research, under the innovation, has been used to calculate the sum. For example, the total amount of the sums of costs for Estonian Foreign Policy Institute as something, which gives some innovation, apparently isn't reasoned.

Due to the lack of data it's practically impossible to answer the question, how much did the costs of innovation decrease in a situation, wherein the state budget of 2009 was 11.7% smaller than the one of 2008 and the stated budget of 2010 further 0.1% smaller than the budget of 2009. Estonian statistics gives just the dynamics of the investments: 5,4 billion euro in 2007; 4.7 billion euro in 2008; 3,2 billion euro in 2009; and 2010 is 2.9 billion euro (Eesti Vabariigi…, 2010, p. 93). Therefore the investments have been decreased essentially more than GDP and state budget. If the decrease of investments is more than 45%, then it's obvious that all the investing activity has been impeded. The current system of the budget hasn't assured the sustainability of the innovative processes.

It is clear that the decrease in the incomes from the budget decreased the capacity of the state to support innovative processes. The decrease appeared in two ways: the decrease in direct money from the state for different R&D processes, and the decrease in support from the private sector. Both are difficult to quantify.

Expenditure on innovation was officially publicized for the first time in the statement of the 2010 State Budget draft act (It was not mentioned in the statement for 2009). The initial costs of R&D in 2009 were given there. The total sum is substantial – 132 million euro, of that 79 million euro due to foreign support (Kaupade jaemüük. Eesti Statistikaamet. http://pub.stat.ee/xp-we; Riigieelarve kassapõhised…., 2009, p.19-20) unfortunately, the calculation methodology put all sums connected with scientific research under the heading of innovation. Counting, for example, the total costs for the Estonian Foreign Policy Institute as "innovation" is apparently un-challenged.

Due to the lack of data it is practically impossible to determine how far innovation expenditure decreased when the state budget of 2009 was 11.7% smaller than that of 2008, and the stated budget of 2010 a further 0.1% smaller than the budget of 2009 has been impeded. The current system of the budget has not assured the sustainability of the innovation process.

2. CONCLUSIONS

The following can be concluded from the above:

In 1993–1999, the influence of the tax system on the development of Estonian society, especially on its economic environment, was weak.

The Estonian tax system was changed in 2000. Since 1 January 2000 corporate profit has not been taxable in Estonia. Only the outgoing cash dividends, benefits and other payments are taxable. The purpose of this kind of taxation experiment was to encourage companies to reinvest more in their assets and to attract foreign investments. The author was unable to find clear correlations between the lifting of corporate income tax and investments on the one hand, and the GDP growth rate and trade balance deficiency on the other.

Such a modest influence on the entrepreneurship environment is explained by a number of factors. Comparison of the Estonian taxation system with those of several other Eastern European countries demonstrates that in those other countries corporate profits have not been taxed higher than in Estonia. Obviously, Estonia has not reached the desired position in its competition with other transition states. Therefore, taxes, at least corporate income tax (or its lifting), have not been among the main factors determining the entrepreneurship environment. The systems of several states, where the reinvested profit, not all the profit, was left free of income taxation, have proved to be more innovative than Estonia's.

The structure of the revenues of the Estonian state budget differs considerably from that of other EU Member States. The percentage of environment taxes is negligible, while the peculiarly structured social benefits tax, which constitutes the greatest and increasing source of revenue, is difficult to classify as either a direct, indirect or labour tax. Due to the huge proportion of consumption taxes the buoyancy of the Estonian tax system is weak.

The shortfall of income to the state budget in 2008 and especially in 2009 has forced the government to make cutbacks of up to 10% and has acutely raised the issue of increasing the tax burden. As the tax burden in Estonia is substantially lower than the EU average, this is possible. However, that raises the question of the optimal tax burden. Based on Slutsky's principle of a compensated demand curve and Ramsey's optimal tax theory, we can take the optimal level of indirect taxes (which are dominant in Estonia) to be the point where the household welfare reduction curve and the social welfare increase curve intersect.

The way the Estonian Government has chosen to balance the budget – a continuous cut in expenses – forms a vicious circle as the cuts, particularly to wages, decrease incomes in the next period. According to the most modest calculations, which have not taken into consideration the decrease in demand due to macroeconomic influences, the state budget of Estonia lost 7 billion due to these cuts.

The economic depression, which began in 2008, has demonstrated the weak orientation of the Estonian economy and questioned the value of its taxation system for innovation. The amount of investments in innovation has decreased more than the decreases in GDP and the state budget.

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