

TAXES, ESTONIAN STATE BUDGET AND ECONOMIC CRISIS

Olev Raju
University of Tartu

Abstract

Recession has sharply erected the question of tax burden and the optimal proportion of different kinds of taxes among the incomes of the budget. Indirect taxes and consumption taxes, which proportion is different according to different methodologies, dominate in Estonian state budget. The buoyancy of a tax system based on taxes of that kind is especially weak during the recession. Difficulties concerning the incomes of budget have arisen the necessity for lifting taxes, which is possible as the tax burden is low now. But a sharp question of the optimal level of taxes is going to be raised. A formula for indirect tax optimum according to Ramsey taxes and Slutski decomposition has been proposed in the article.

Keywords: taxation, tax burden, Estonian state budget, Ramsey taxes, indirect tax optimum

JEL Classification: E, H

Problem

There are many goods that cannot be provided by the private sector but only by the state. It is the state that has to pay for these so-called public goods. According to Wagner's law the income elasticity of public expenditures is greater than 1, therefore the demand for state-financed services grows in proportion to the increase of income. That also means an increased demand for state budget revenues, mostly taxes.

Bigger state budget also means bigger taxes. Taxes in turn diminish the resources available to households and therefore welfare. So the question arises – which is bigger, the decrease in welfare of households and the state as a whole due to an increase of taxes, or the rise in welfare due to public goods and an increase in consumption?

In economic theory, this question can be approached from two viewpoints. First, it is possible to point out a set of principles, parameters and arguments, and construct models based on theoretical considerations, without taking into account particular numerical data. The other function of the theory is to provide a scientific set of analytical devices for the empirical data that would make giving practical suggestions possible. This part of the theory also needs to explain what kind of data from the millions of practical cases need to be gathered.

The economic crisis, which has been lasting for 2 years already and has been decreasing GDP more than 20% and has essentially been decreasing state budget (in

spite of the lifting of taxes) has arisen a question about the efficiency of Estonian state budget and its correspondence with modern demands. Certainly, taxes, as the most important source of income, is a question of special interest. As the tax funds of two last years demonstrate, the current taxation system hasn't been able to ensure the stability of budget incomes regardless to the lifting of taxes. A question could be arisen: what has been the role of objective economic crisis and what has been the specificity of Estonian taxation system in a severe decrease of the amount of state budget; particularly as the role of tax burden, taxation structure, payment order etc, so the economical policy of government, especially the role of budget paringi n essential decrease of tax funds.

Let's observe only one question of this complicated complex of questions. How has the decrease of incomes of Estonian state budget taken place and what is the connection of this process with the theoretical indirect taxes model and Estonian taxation system, especially with the structural specificity of taxes. The second observed problem is the influence of budget paring on eventual tax funds.

Optimal tax rates

As mentioned earlier, the decrease in state budget revenues has raised the question of a increase tax burden in Estonia. The government of 2009 has lifted several excises and VAT from 18% to 20%. As we'll demonstrate hereinafter the indirect taxes are dominant in Estonian budget incomes. Therefore it's important to have some theoretical conception about the optimum of indirect taxes before we'll begin to give an estimation to Estonian taxation system. Let's eliminate a political demagogy about the voluntaruty of (consumption) taxes and let's originate from the economical effect, particularly from the influence of taxes on the prices and the living standards of households. Next we will try to construct a model to determine the optimum of thIndirect taxes, which are dominating in Estonian taxation system.

As a general rule, establishing or increasing taxes also raises prices. Accordingly, the reaction of households to taxes consists of the sum of two effects – income and substitution effect (the latter can be marginal, if the prices of all goods rise in proportion to the tax increase. But as the demand and supply elasticities of goods differ, this possibility is only theoretical and will therefore not be consider here). To achieve actual substitution effect the rise in prices needs to be compensated to the consumer. There are two possibilities for that – either to grant a specific amount of money to the consumer (household) based on the method introduced to the economic theory by Slutsky, or to try to compensate for the increase of prices to both the consumer and the supplier. If we choose the first option, Pareto effective situation is achievable (of course, in the absence of external effects and on the condition that indifference curve and isoquant are traditional) as a point of balance where the state incomes and expenditures for ensuring purchase power are even. The second option is of primarily theoretical interest as it would entail moving sums of money back and forth, and the final result would be marginal. We will not examine this option.

With any taxation system, three of its characteristics are of vital importance: elasticity, buoyancy and incidence. First of these shows the ability of a tax or of the system of all nationwide taxes to generate increased tax revenues in case of positive shifts in the object of taxation, primarily income or turnover. In practice, of course, tax elasticity depends on not only the type of tax, but also (if not primarily) on the structure of the system of collecting the particular tax. There are different approaches to buoyancy, but for the purposes of this study it is sufficient to regard it as a certain elasticity indicator in the situation where negative shifts are taking place in the object of taxation. The greater the buoyancy of a tax (and the whole system of taxation), the smaller the risk that in case of negative deviation in economy, primarily in the object of taxation, state income is significantly reduced or the tax system even collapses.

The problem of the elasticity and buoyancy of tax systems was posed already in 1959 by R. A. Musgrave (Musgrave 1959). Since then, all taxes connected with consumership and sale (sale tax, excises, VAT etc) have been regarded as elastic. With income tax, opinions vary – it has been regarded as both elastic and anelastic. Customs tax and duties are universally regarded as anelastic (Goode *et al.* 1984).

With buoyancy, the situation is more difficult. When it comes to analysis of buoyancy, authors either confine themselves to the analysis of elasticity in certain special cases (in the case of negative elasticity coefficient) or essentially forgot it. The reason for that is simple – during the past few decades there has been no opportunity to study national tax systems in a situation of clear economic depression. The last bigger and more widespread depression took place in 1974–75 and even that was due to external factors (negative supply shock caused by oil prices), and therefore the analysis of the data from that period does not always produce “pure” results. Of course, it is not advisable to confine oneself to mere theoretical approaches or make conclusions based on 50-year-old data. In that sense the current depression in Estonia and elsewhere is an interesting base material for future research. However, these analyses can be properly made only in a few years’ time.

The questions of tax incidence have received more attention. The spreading on tax burden between demandant and supplier, but also between different social strata of varying income, is the key question of not only taxation, but of all macroeconomics and economic policy. By how much does the income of a certain social stratum decrease in real life and how much does the demand drop as a consequence? If the supplier becomes the tax bearer, then by how much do the prices rise? How much does that in turn reduce demand? It is a wide-spread view that indirect taxes, which dominate in developing countries and make up a particularly large percentage in Estonia, are regressive towards income. Unfortunately the latest in-depth statistical studies in that field date back to more than 30 years ago, when the tax systems of newly independent developing countries were actively researched. As those countries quickly changed the structure of their taxes, there are almost no studies about countries with a tax system analogous to that of Estonia today. Even of Eastern European countries only Latvia has a tax structure similar to Estonia.

In an attempt to maintain comprehensiveness, we will base our model on two common views on model-construction in taxation theory. First, the state revenues from taxes come as lump-sum taxes straight from households, and second, any transaction between the consumer and the supplier increases state revenues. There are no external forces, the indifference curve and isoquant are standard. In the absence of any other taxes such premise leads to Pareto optimum in the point where the increase in state revenues and the purchasing power redistribution curve meets with the lump-sum taxes curve. Adding any other taxes directs us away from that point. Essentially we are trying to find a solution that would bring about an increase in state revenues by increasing consumption taxes, while reducing the welfare of households as little as possible. If we expect taxes to be used for an increase in social welfare, we can claim that when the left side of equation (1) exceeds the right side, the total social welfare has increased.

To put it in the form of an equation: we are trying to choose the tax vector t in such a way as to maximize social welfare $V(q)$. If we designate the total revenue of subjects from indirect taxes with $R(t)$, we arrive at:

$$R(t) = t \cdot X(q) \geq \vec{R}, \quad (1)$$

where $X(q)$ is the vector of aggregated demand and \vec{R} is the required tax revenue.

With taxes imposed, a quantity q is supplied for price t , but the consumer pays the price $(p+t)$. We designate the household welfare corresponding to quantity q with $v(q)$ and the household demand with $x(q)$ and arrive at equation (1). Again, $V(q)$ is the rise of social welfare caused by an increase in taxes.

The problem posed is easily solved if we use Ramsey's rule of optimal taxes and Lagrange's widespread method of determining maximum. We maximize $V + \lambda R$, where λ is the Lagrange multiplier, which in this case does not indicate the marginal utility of some particular good supplied by the private sector, but of the social welfare arising from the increase in state revenues.

We can write:

$$\frac{\partial V}{\partial t_i} + \lambda \frac{\partial R}{\partial t_i} = 0. \quad (2)$$

If we make the substitution

$$\partial V / \partial t_i = - \sum_h \beta^h x_i^h \quad \text{and} \quad \partial R / \partial t_i = X_i + t \cdot \partial X / \partial t_i,$$

and use Slutsky's compensated demand curve of demand derivative, we get:

$$\frac{\sum_k t_k \sum_h s_{ik}^h}{X_i} = -\sigma_i$$

$$\sigma_i = 1 - \sum_h \frac{x_i^h}{X_i} \frac{b^h}{\bar{b}}, \quad (3,4)$$

S_{ik}^h is the derivative of Slutsky's compensated demand curve on household h (the utility level preceding the tax increase has been maintained) and σ_i is negative because there is a covariance, b^h , of the social marginal utility of the net income of household h (where the „net“ means there is an adjustment to the social marginal utility, β^h , for the marginal propensity to spend on taxes out of extra income, and \bar{b} is the average of b^h) and the consumption of good i by household h , (x_i^h). Thus, σ_i is higher the more good is consumed by those who have a low social marginal utility of income.

As the above equations (1) and (2) take into account the most important aspects of the interconnection of taxes and social welfare, it can be successfully used to describe the social aspect of the efficiency of indirect taxes. However, these equations as well as those suggested earlier (Ahmed, Stern 1989) are practicable only on the condition that we succeed in mathematically describing the function of the social welfare of households, from which we can then find the derivative. As a rule, the task of describing the function of the welfare of households is often difficult to solve with adequate accuracy, i.e. the same kind of problems arise as in the case of using Hicks's method to subtract the substitution and income effect.

Estonian taxation structure

In the initial stage of its transition period, Estonia (like most other Eastern European countries) was in a unique position – it essentially lacked a taxation system, a vital instrument of economic policy, which now needed to be constructed. In a perfect world, that would have meant building a system based on contemporary economic theory. Unfortunately Eastern European countries lacked pertinent knowledge, both in regard to taxation theory and the economic situation (an accurate description of the development phase and the processes).

So what characterizes the Estonian tax system? Its characteristic features are a relatively low tax burden, simplicity bordering on primitiveness (which has significantly reduced the possibilities of using taxes as a control device of economy), 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 (<http://www.fin.ee>; the data are slightly different in various parts of the website). The tax burden ought to increase up to 36% as a result of the taxation lifting in

accordance to the economical crisis in 2010 (2010 Riigieelarve ...). But as the Ministry of Finance of the Republic of Estonia has already decreased the prognosis of GDP in comparison with the time of state budget passing, so we can speak about tax burden of 37%. Also, it's lower than the EU average (41-42%). However, these numbers are not comparable. 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. When that is taken into account, the tax burden in Estonia appears to be about 26-28%.

The economic crisis has brought attention to the issue of tax structure. Table 1 presents taxes in Estonian state budget from 2005, i.e after Estonia joined the EU. It is difficult to assess what is the percentage of indirect taxes in Estonian state budget. Indirect taxes clearly include VAT, excises and the customs tax. However, also the gambling tax has some features characteristic to indirect taxes, as it is not imposed on the revenues from economic activities but rather as a preventive lump-sum tax, i.e before launching the slot machine etc. The tax sum is transferred by the manager of the gambling business in some way (e.g by raising drink prices) to the actual bearer – the gambler, i.e consumer. Accordingly this tax also has the incidence characteristic of indirect taxes and therefore it is more accurate to regard it as an indirect tax (at least when it is established in such a way as in Estonia).

As far as we know, there is no other country that has social benefits tax in the form that it exists in Estonia. The tax is paid by the employer, but it is calculated based on the amount of money paid to the employee. That tax is meant only for pensions and healthcare, i.e it functions largely as retirement and health insurance. Clearly, the defining criterium here is whether the employee's salary would increase by the amount that makes up the social benefits tax if that tax was abolished. If yes, the social benefits tax has enough characteristic features to regard it as an indirect tax; if not, the features of direct taxes probably prevail (the social benefits tax is the employer's expenditure). As this question is impossible to answer properly, authors classify it arbitrarily, depending on their views, as either a direct or indirect tax. Eurostat has taken a „diplomatic” position and classifies that Estonian social tax as a labour tax, regarding it therefore as primarily a resource tax (Eurostat. Taxation), but that is not entirely accurate as the income from social benefits tax is allocated for certain social expenditures.

It is probably reasonable to bring out the percentage of indirect taxes in different versions, with social benefits tax included and not. In the first case, the percentage of indirect taxes has made up 75.3-87.8% of state budget revenues ever since Estonia joined the EU; in the latter case the percentage has been 41.1-53.6%. If we take the first approach, we arrive at what is clearly the biggest percentage of indirect taxes among EU member states; even with the second approach the result is well above EU average.

When trying to determine the percentage of consumption taxes in Estonian state budget, we likewise have to face the question of how to classify some taxes that are different from those in other countries. Again we are talking mainly about social

benefits tax. In the form that it exists in Estonia, it has been regarded as a tax on using one of the goods – labour – and hence as a resource tax. That, however, raises the question of whether it is a consumption tax. It is not the purpose of this study to discuss whether the multifunctional tax established during the transition period when there was no economic-theoretical knowledge available belongs to this or that category. Therefore – although the author does not share the opinion that the social benefits tax as it exists in Estonia is a consumption tax – also the percentage of consumption taxes has been given in two versions.

Table 1. Income from taxes in Estonian state budget 2005-2010 (millions of kroons)

	2005	2006	2007	2008	2009 (provisional)	2010 (plan)
Total taxes	53831	55208	67718	70396	63780	61767
Personal income tax	4789	3846	4786	4328	2419	3220
Corporate income tax	2365	3123	4083	4166	4010	2425
VAT	14021	18645	22304	20548	18809	19030
Excises	6424	7030	8195	8971	9818	9511
excise on tobacco	1205	1208	1529	2519	2088	1830
excise on alcohol	1838	2089	2314	2434	2590	2330
excise on fuel	3363	3728	4353	4697	4870	4870
excise on packaging	...	3	...	1	1	1
Gambling tax	292	354	467	484	278	215
Customs tax	347	401	549	508	307	345
Social benefits tax	18392	21764	27268	31299	28084	26970
Other taxes	1079	45	66	92	55	51

Source: the author's calculations based on the Ministry of Finance homepage.

The figures demonstrate a growing dominant of social taxes in Estonian state budget tax funds from 34.2% in 2004 to 44.4% in 2008. The crisis, which began in 2008, frozen 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. (see Table 2).

Table 2. Dynamics of tax funds, wages and GDP in 2007-2009 (per cents in comparison with the same quarter of the last year)

Period	2007				2008				2009		
	I	II	III	IV	I	II	III	IV	I	II	III
GDP	9.8	7.6	6.4	4.5	0.4	-1.4	-3.3	-9.9	-15.1	-16.5	-15.6
Tax burden	27.6	28.4	18.6	18.2	10.2	5.7	7.1	-2.8	-10.1	-12.1	-13.6
Average wages	20.1	21.2	12.9	20.2	19.5	15.2	14.8	6.9	-1.5	-4.4	-5.9

Source: Home-page of Ministry of Finance.

The figures of Table 2 demonstrate once again that the tax funds react on GDP changes 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. 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, the purging of income tax benefits). The concrete influence of taxes lifting and the influence of prices elasticity on tax funds can't be explained here.

Economical crisis and Estonian state budget

All the European states were hit by the economic depression in 2008-2009. But its range and course 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. The economic depression turned into a severe crisis, which could be compared with Great Depression of 1929-1932, in some Eastern European states, especially in Estonia, Latvia and Lithuania. There are several reasons for it, as objective, so subjective ones. The observation of all these reasons isn't the task of this paper.

The state budgets have found themselves in an especially severe situation. The contents of state budget have to be pared and negative supplementary budgets have to be made i.e. the contents of state budget have to be pared within the year. But a cutting of that kind reduces the consumption. As the consumption taxes form the main part of Estonian state budget, so a cutback of any description of the budget means the cutback of the next period's incomes.

Let's observe the influence of three negative supplementary budgets of Estonia on the incomes of the next periods. The first negative supplementary budget was accepted in 2008 with the content of incomes decrease by 6.1 billion kroons and expenses decrease by 3.2 billion kroons, the second negative supplementary budget was accepted in 2009 with the content of incomes decrease by 9.6 billion kroons and expenses decrease by 6.6 billion kroons, and the third negative supplementary

budget (already the second for 2009!) was accepted with the content incomes decrease 3.9 billion kroons and expenses decrease by 2.6 billion kroons. (minfin).

In order to analyse the amount of the decrease of the incomes of the future periods by such a cutback, these expenses should be divided in several parts. The payments to EU budget or the purchase of armaments from abroad would influence the future incomes of Estonian state budget incognizably; at the same time the cutback of the extra payments for the poorest ones, which they would spend quickly for staples, would give a quick new income for the budget by turnover taxes, excises etc. I would like to divide the cutbacks of budget in four for the analyses.

First. The sums of new income about 0 (taxes for EU budget, purchase of armaments etc from abroad etc).

Second. Investments, which give some new income for the budget, but which are indirect. Investments are the purchase of something and wages for installing these purchases, which are capable of being mentioned in the case of wages in building, but which are of less importance for equipment installation. The new incomes come from here as turnover taxes (partly as excises and customs fees) from the purchases, social taxes from the wages, and turnover taxes and excises from the usage of the paid wages.

Third. Income transitions. They are of very different character. They go mostly to local municipalities, where they are used for very different payments. Actually, the taxes of the fourth group dominate within them; but the role of investments isn't small.

Fourth. Direct payments for households. The taxes from which people get money to use for internal consumption (pensions), dominate within this group. The new incomes as social taxes (part of payments taxed by this tax), particularly from the usage of turnover taxes and from money paid as excises, come from here.

A calculation of that kind meets two difficulties, which both are conquerable but could give an available error class. Firstly are the division of expenses within these 4 classes. It's especially difficult for the expenses lists, which have got the names as working expenses, transition costs, operating supports etc. Secondly, the new incomes coefficients of each group would remain inescapably of approximate value. But, as it's demonstrated in the beneath result, the tendencies are so obvious that even the maximal possible error isn't able to give a contrary result. Moreover, the coefficients of the new incomes are more likely underestimated than overestimated while calibrating the model.

The data necessary for the analyses are concentrated in Table 3.

Table 3. Reduction of Estonian state budget supplementary budget expenses in 2008-2009 (millions)

Orientation of expenses	2008	2009 I	2009 II
I group (coefficient of new incomings 0)	492.6	993.9	187.4
II group (coefficient of new incomings 0.4)	832.5	980,2	321,9
III group (coefficient of new incomings 0.5)	497.8	1643.0	628.1
IV group (coefficient of new incomings 0.3)	1387.4	2957.7	1658.1
Altogether	3210.3	6575.8	2563.5

Source: the author's calculations. RT I 03.07.2008, 29, 188; RT I 28.02.2009, 15, 93; RT I 26. 06. 2009, 35, 233.

A simple arithmetic demonstrates the following: II group gave a new income of 333 million kroons, III group gave a new income of 249 million kroons and IV group gave a new income of 416 kroons, altogether 998 million kroons in 2008. If one would consider the average speed of flow of funds, the same money could be paid 2.2 times in the same year. If one would consider that it would be paid in the same proportion with the negative supplementary budget i.e. it would be returned to the expenses, it could be considered that the cutbacks created an additional "hole" of 2195 million kroons into the state budget of Estonia by the decreasing of new incomes in 2008. The analogue calculation for 2009 demonstrates that the money of I negative supplementary budget would have been returned 3.9 times and the money of II negative supplementary budget 2.3 times; so, the incomes of 2009 were increased by $(392+822+887) \times 3.9 = 8429$ million kroons due to I negative supplementary budget and by $(129+314+497) \times 2.3 = 2163$ million kroons due to II negative supplementary budget. So, possible new incomes were cut due to negative supplementary budgets at least 10.5 billion kroons in Estonia in 2009! So, the expenses for public sector were not made with the extent of this sum.

It's obvious that similar calculations could be made for comparing the amount of Estonian state budget with the one of 2009. Unfortunately, the budget of 2010 hasn't been detailed yet (the exact division of several sums would be made by the ministries only in March 2010). So, the exact data aren't available yet.

Conclusions

The following can be concluded from the above:

1. Determining the percentage of indirect and consumption taxes in the whole tax burden is complicated as there is no generally accepted method for it. Also, several of the taxes used in Estonia possess features characteristic of both direct and indirect taxes. Furthermore, it is not clear what we should consider a consumption tax – only those taxes that affect household consumption, or also corporate ones in case the tax is imposed on final consumption.

2. Whichever approach we take to defining indirect and direct taxing, it is clear that indirect taxes prevail in the income of the Estonian state budget. The social benefits tax makes up a particularly big – and growing – proportion. Different approaches lead to the same conclusion: the percentage of consumption and indirect taxes in the state budget is equal, i.e indirect taxes have been imposed on consumption.

3. 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 of the state budget, is difficult to classify as either a direct, indirect or labour tax. Due to the huge proportion of consumption taxes the buoyancy of Estonian tax system is weak. The provisional conclusions of 2008 demonstrate clearly that during periods of economic recession the state budget is very vulnerable.

4. The shortfall of income to the state budget in 2008 and especially in 2009 has forced the government to make cutbacks 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, it is possible. However, that raises the question of the optimal tax burden. Based on Slutsky's principle of 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.

5. The way Estonian Government has chosen to balance the budget – a continuous cut of the expenses- forms a dead circle as the cur of the expenses, particularly the wages, is going to decrease the incomes of the next period. According to the most modest calculations, which haven't taken into consideration the decrease of the demand due to macroeconomic influence, the state budget of Estonia lost 2.2 billion kroons in 2008 and 10.5 billion kroons in 2009 due to the cuts of the budget.

References

1. **Ahmad, E. Stern, N.** Taxation for developing countries. *Handbooks in economics*. V. II. 1989, pp. 1005-1092.
2. Eesti vabariigi 2008 aasta lisaeelarve. Riigi Teataja I, 03.07.2008, 29, 188.
3. Eesti vabariigi 2009 aasta lisaeelarve. Riigi Teataja I, 28.02 2009, 15, 93.
4. Eesti vabariigi 2009 aasta II lisaeelarve. Riigi teataja I, 26.06 2009, 35, 233.
5. Eesti vabariigi 2010 aasta eelarve. <http://www.fin.ee/>.
6. Estonian Ministry of Finance website. <http://www.fin.ee/>.
7. Eurostat. Taxation. <http://epp.eurostat.ec.europa.eu/portal/page?&-pageid/>.
8. **Goode, R.** *Government finance in developing countries*. Washington, DC.1984.
9. **Musgrave, R. A.** *The theory of public finance*. New York, 1959.
10. **Newberry, D. M., Stern, N.** *The theory of taxation for developing countries*. Oxford, 2007.

MAKSUD, RIIGI EELARVE JA MAJANDUSKRIIS

Olev Raju
Tartu Ülikool

Probleemi püstitus

Juba 2 aastat kestev majanduskriis SKP langemisega üle 20% ja riigieelarve mahu olulise vähenemisega on püstitanud küsimuse Eesti riigieelarve ja maksusüsteemi jätkusuutlikkusest. Nagu on näidanud viimase kahe aasta maksulaekumised, ei ole kehtiv maksusüsteem vaatamata maksude tõstmisele suutnud tagada eelarve tulude stabiilsust. Kerkib küsimus, milline on olnud eelarve mahu tugevas vähenemises objektiivse majanduskriisi osa ja milline Eesti maksusüsteemi spetsiifika, seda nii maksukoormuse, maksude struktuuri, maksukorralduse jne kui ka valitsuse majanduspoliitika, eelkõige eelarve kulude kärpete, näol. Käesoleva kirjutise raames püütakse sellest suurest küsimuste kompleksist vaadelda kaht probleemi. Esiteks vaadelda kaudsete maksude dominantide eelarve tuludes ja teiseks, näidata eelarve pideva kärpimise negatiivset mõju maksude edasisele laekumisele. Esimesele küsimusele vastuse andmiseks on vajalik ka anda seos nn. Ramsey maksude ja Eesti eelarve tulude struktuuri vahel.

Eelarve tulude vähenemine on teravalt tõstatanud küsimuse võimalikust maksukoormuse suurendamisest Eestis. Kuna Eesti maksusüsteem baseerub kaudsete maksude dominantidel, püüame alljärgnevalt konstrueerida mudeli kaudsete maksude optimumi leidmiseks. Mudeli konstrueerimisel lähtume välismõjude puudumisest, isokvandi ja samakasulikkuse kõvera klassikalisest kujust ning Pareto-optimumi saabumisest punktis, kus valitsusele laekuva tulu kasv ja ostjõu ümberjaotuse kõver kohtub paušaalimaksude omaga. Seega me sisuliselt otsime varianti, mille puhul valitsuse sissetulekute laekumise kasv ja sellest tulenev sotsiaalne heaolu ei oleks väiksemad majapidamiste kaotusest. Teiste sõnadega, kui võrrandi (1) vasak pool ületab parema, siis on ühiskonna kogu sotsiaalne heaolu kasvanud.

Asjale valemikuju andes võib väita, et me püüame valida maksuvektori t nii, et maksimeerida sotsiaalset heaolu $V(q)$ tähistades subjektide kogutulu kaudsetest maksudest $R(t)$, saame

$$R(t) = t \cdot X(q) \geq \bar{R}, \quad (1)$$

kus $X(q)$ on kogunõudluse vektor ja \bar{R} on vajalik maksutulu. Kui nüüd lugeda, et pärast maksude kehtestamist kogust q pakutakse hinnaga t , tarbija aga maksab tema eest hinna $(p+t)$ siis tähistades kogusele q vastava majapidamise heaolu on $v(q)$ ning majapidamise nõudluse $x(q)$ saamegi valemi (1). Rõhutame veelkord, et $V(q)$ on sotsiaalse heaolu kasv maksude kasvust.

Püstitatud ülesanne laheneb lihtsalt kui kasutada Ramsey reeglit optimaalsete maksude kohta ja majandusteaduses levinud Lagrange maksimumi leidmise võtet. Seega me maksimeerime $V + \lambda R$ kus λ on Lagrange kordaja, mis antud juhul

tähistab mitte mõne konkreetse erasektori poolt pakutava kauba, vaid valitsuse tulude kasvust tuleneva sotsiaalse heaolu piirkasulikkust.

Seega võime kirjutada

$$\frac{\partial V}{\partial t_i} + \lambda \frac{\partial R}{\partial t_i} = 0. \quad (2)$$

Kui nüüd asendada

$$\frac{\partial V}{\partial t_i} = - \sum_h \beta^h x_i^h \quad \text{and} \quad \frac{\partial R}{\partial t_i} = X_i + t \cdot \frac{\partial X}{\partial t_i},$$

ning kasutada Slutsky kompenseeritud nõudluskõverat ja leida tuletis, saame:

$$\frac{\sum_k t_k \sum_h s_{ik}^h}{X_i} = -\sigma_i$$

$$\sigma_i = 1 - \sum_h \frac{x_i^h}{X_i} \frac{b^h}{\bar{b}}, \quad (3,4)$$

Kus S_{ik}^h on Slutsky kompenseeritud nõudluskõvera tuletis majapidamisele h (on säilitatud maksude tõstmise eelne kasulikkusetase) ja σ_i on negatiivne, kuna majapidamise netotulude sotsiaalse piirkasulikkuse b^h (kus „neto” tähendab kohanemist sotsiaalse piirkasulikkusega β^h marginaalse kalduvuse tõttu tasuda maksud lisasissetulekutest; ning b on keskmine b^h) ja hüvise i tarbimise vahel majapidamise h poolt (x_i^h) valitseb kovariantsus. Niisiis, σ_i on seda kõrgem, mida rohkem hüvist tarbivad need, kelle sissetuleku sotsiaalne piirkasulikkus on madal. Teiste sõnadega, vaesema elanikkonnakihi suuremal maksustamisel on kaudsete maksude laekumise stabiilsus suurem. Nagu näitavad allpool (vt. tabel 2) toodud arvud, pole eesti tingimustes võimalik, et võrrandi vasak pool oleks suurem paremast, s.t. Eestis kehtiva maksusüsteemi korral ei saa maksude tõus viia sotsiaalse heaolu kasvule.

Kuna eeltoodud valemid (1) ja (2) võtavad arvesse maksude ja sotsiaalse heaolu vastandliku seose kõige olulisemaid aspekte, on kaudsete maksude efektiivsuse sotsiaalne aspekt sellega küllaltki hästi kirjeldatav. Kuid nii siintoodud kui ka spetsialistide poolt varem pakutud valemid (Ahmed, Stern 1989) on praktikas kasutatavad vaid eeldusel, et meil õnnestub matemaatiliselt kirjeldada majapidamiste sotsiaalse heaolu funktsioon; millest siis on võimalik leida tuletis. Praktikas üldreeglina osutub see majapidamiste heaolu funktsiooni matemaatilise kirjeldamise ülesande piisava täpsusega lahendamine tihti keeruliseks, s.t. kerkivad needsamad raskused mis Hicksi võtte kasutamisel asendus- ja sissetulekuefekti lahutamisel. Eesti majanduspoliitikas on aga saanud tavaks nende küsimuste lahus vaatlemine;

eelarvet aga vaadeldakse eelkõige läbi tema võimaliku mõju ettevõtlusele ja alles teises järjekorras tema sotsiaalse suunitluse prismast lähtudes.

Eesti maksusüsteemi struktuur

Eesti oli oma siirdeperioodi algstaadiumis (nagu ka enamik teisi Ida-Euroopa maid) unikaalses situatsioonis – selline ülimalt oluline majanduspoliitiline instrument kui maksusüsteem sisuliselt puudus ja seda tuli üles ehitama hakata. Ideaalis oleks see tähendanud kaasaja majandusteooria seisukohtadest lähtuva süsteemi üles ehitamist. Kahjuks puudusid sel perioodil (1993-1994) Ida-Euroopa maades vastavad teadmised ja seda nii maksustamise teooria kui ka majandusliku situatsiooni (arengufaasi ja protsesside täpsema määratlemise) kohta.

Eesti maksusüsteemi iseloomulikeks joonteks on olnud suhteliselt madal maksukoormus, lausa primitivismi ulatuv lihtsus (mis on vähendanud maksude kui automaatse stabilisaatori rolli), kaudsete ja tarbimismaksude suur osakaal. Eesti maksukoormus on alates Eesti astumisest EL olnud vahemikus 33,7-36,3% (<http://www.fin.ee>), mis on madalam EL keskmisest (41-42%). Kuid need arvud pole võrreldavad. Eesti eelarvesse kantakse sotsiaalmaks, mis on juba aastaid olnud Eesti riigieelarve suurim sissetulekuallikas (vt. tabel 1). Enamikes EL liikmesriikides selline maks üldse puudub või on ta väike. Kui teha andmed võrreldavaks, jääks Eesti maksukoormus kuhugi 26-27% piirimaile.

Majanduskriisi tingimustes on aktualiseerunud maksude struktuuri küsimus. Tabelis 1 on toodud Eesti riigieelarvesse laekunud maksud alates 2005 aastast, s. o. Eesti EL astumise järgselt. On selge, et kaudsete maksude alla lähevad neist VAT, aktsiisid ja tollimaks. Kuid kaudsete maksude tunnuseid on ka hasartmängumaksul, kuna sellega ei maksustata majandustegevuse tulemit, vaid see kehtestatakse paušal-maksuna ennetavalt, s.o. enne mänguautomaadi jne käiku andmist. Selle summa kannab hasartmängude korraldaja mingil viisil (näiteks pakutavate jookide hinna tõstmine jms) üle tema tegelikule kandjale – mängijale, s.o. tarbijale.

Sellisel kujul, kui on Eestis kehtestatud sotsiaalmaks, teda meile teadaolevatel andmetel kuskil mujal ei eksisteeri. Maksu tasub tööandja; kuid selle välja arvutamise aluseks on töövõtjale makstav summa. Maks on sihtotstarbeline täites suures osas pensioni- ja tervisekindlustuse funktsioone. Kuna pole selge, kas sellisel kujul on sotsiaalmaks otsene või kaudne maks, siis liigitavad autorid teda meelevaldselt. Eurostat liigitab Eesti selle maksu tööjõumaksude (labor tax) hulka, lugedes teda seega ressursimaksuks. (Eurostat. Taxation), kuid ka see pole päris täpne, kuna sotsiaalmaksu laekumised on ette ära suunatud kindlateks sotsiaalkuludeks.

Ilmselt on mõttekas välja tuua kaudsete maksude osakaal mitmes eri variandis, eelkõige koos sotsiaalmaksuga ja ilma selleta. Esimesel juhul on kaudsete maksude osakaal pärast Eesti astumist EL kõikunud vahemikus 75,3-87,8% riigieelarve tuludest, teisel juhul vahemikus 41,1-53,6%. Esimese meetodika järgi on tegu

selgelt suurima kaudsete maksude osakaaluga EL liikmesmaade hulgas; ka teise meetodikaga saadud tulemuse põhjal ületab selgelt EL keskmist.

Tabel 1. Maksude laekumine Eesti riigieelarvesse 2005-2010 (milj. kroonides)

	2005	2006	2007	2008	2009	2010 kava
Maksud kokku	53831	55208	67718	70396	63780	61767
Füüsilise isiku tulumaks	4789	3846	4786	4328	2419	3220
Juriidilise isiku tulumaks	2365	3123	4083	4166	4010	2425
VAT	14021	18645	22304	20548	18809	19030
Aktiisid	6424	7030	8195	8971	9818	9511
tubakaaktsiis	1205	1208	1529	2519	2088	1830
alkoholiaktsiis	1838	2089	2314	2434	2590	2330
kütuseaktsiis	3363	3728	4353	4697	4876	4870
pakendiaktsiis	...	3	...	1	1	1
Hasartmängumaks	292	354	467	484	278	215
Tollimaks	347	401	549	508	307	345
Sotsiaalmaks	18392	21764	27268	31299	28084	26970
Ülejäänud maksud	1079	45	66	92	55	51

Allikas: Autori arvutused Rahandusministeeriumi kodulehekülje alusel.

Tarbimismaksude osakaalu leidmisel kerkib jälle küsimus sotsiaalmaksust.. Kuigi allakirjutanu ei jaga seisukohta, et sotsiaalmaks sellisel kujul nagu ta on kehtestatud Eestis, on tarbimismaks, on otstarbekas pakkuda ka tarbimismaksud 2 variandis- koos sotsiaalmaksuga ja ei. Kindlasti kuuluvad tarbimismaksude hulka VAT ja aktsiisid. Ka tollimaks alkoholilt, mööblilt, lihalt jne on pigem tarbimismaks. Ilmselt on õige tarbimismaksude hulka liigitada Eestis kehtestatud kujul ka hasartmängumaks. Sellise käsitluse juures kerkib huvitav paradoks- kaudsed maksud ja tarbimismaksud langevad kokku. Mitte soovides diskuteerida sellise käsitluse põhjendatuse üle, konstateerime, et mistahes lähenemise korral tarbimismaksudele on nende osakaal riigieelarve tuludes suur.

Arvud näitavad ka sotsiaalmaksu kasvavat dominantni Eesti riigieelarve laekumistes 34,2%lt 2004a. 44,4%ni 2008a. 2008 aastal alanud majanduskriis aga külmutas seoses tööpuuduse suure kasvuga 2009a. palgana välja makstavad summad, mis viis sotsiaalmaksu laekumiste vähenemiseni. Majapidamiste tulude vähenemine viis majapidamiste suure laenukoormuse olukorras aga ka käibemaksu ja aktsiiside laekumise vähenemisele. See viis Eesti 2009 aasta riigieelarve suure löögi alla ja kärpis oluliselt ka 2010 aasta eelarve mahtu. Ilmselt on tarbimismaksudele rajatud

eelarve tuludel suur elastsus perioodidel, kus sissetulekud ja tarbimine suurenevad kiiresti, aga sellisel süsteemil on nõrk ujuvus (vt tabel 2).

Tabel 2. Maksulaekumiste, palga ja SKP dünaamika 2007-2009 (protsentides võrreldes eelmise aasta sama kvartaliga)

Periood	2007				2008				2009		
	I	II	III	IV	I	II	III	IV	I	II	III
SKP	9,8	7,6	6,4	4,5	0,4	-1,4	-3,3	-9,9	-15,1	-16,5	-15,6
Maksulaekumised	27,6	28,4	18,6	18,2	10,2	5,7	7,1	-2,8	-10,1	-12,1	-13,6
Keskmine palk	20,1	21,2	12,9	20,2	19,5	15,2	14,8	6,9	-1,5	-4,4	-5,9

Allikas: Rahandusministeeriumi kodulehekül.

Vaatamata maksude tõstmisele kahel viimasel aastal on päevakorrale on kerkinud küsimus maksukoormuse edasise suurendamise vajalikkusest Eestis. See aga aktualiseerib oluliselt küsimust optimaalsest maksude tasemest.

Vaatleme alljärgnevalt Eestis vastu võetud kolme negatiivse lisaelarve mõju eelarve järgnevate perioodide laekumistele. Eestis võeti vastu esimene negatiivne lisaelarve 2008 aastal mahus tulude vähenemine 6,1 miljardit krooni ja kulude vähenemine 3,2 miljardit krooni, teise 2009 aastal mahus tulude vähenemine 9,6 miljardit krooni ja tulude vähenemine 6,6 miljardit krooni ja kolmanda (2009 aasta jaoks teise!) mahus tulude vähenemine 3,9 miljardit krooni ja kulude vähenemine 2,6 miljardit krooni. (<http://www.minfin>).

Selleks, et analüüsida, palju selline kärbe vähendab tulevaste perioodide laekumist, tuleb need kulud jagada mitmeks. Maksete vähendamine EL eelarvesse või siis relvastuse ost välismaalt mõjutavad Eesti riigieelarve tulude edasise laekumise praktiliselt mittetunnetatavalt; samal ajal kui kõige vaesematele makstud lisarahade kärpimine, mis oleks kulutatud kiiresti esmatarbekaupade ostuks, oleks andnud eelarvesse käibemaksu, aktsiiside jne näol kiiret tagasilaekumist. Analüüsiks jagasin eelarve kulude kärped algselt neljaks.

Esiteks. Oi lähedase otsese tagasilaekumisega summad (maksed EL eelarvesse, relvade jne ostud välismaalt jms).

Teiseks. Investeeringud jms, mis annavad riigieelarvesse küll tagasilaekumise, kuid kaudselt. Investeeringud, need on millegi ostud, aga ka töötasud nende ostude töökorda saamiseks, mis ehituse palkade korral on mainimisväärsed, kuid seadmete montaažikulude korral märksa väiksema osakaaluga. Siit tulevad tagasilaekumised käibemaksuna (osalt ka aktsiiside ja tollimaksudena) ostudelt, sotsiaalmaksuna palkadelt ning käibemaksu ja aktsiisidena väljamakstud töötasude kasutamisel.

Kolmandaks tulusiirded. Need on väga eriilmelised. Põhiliselt lähevad need omavalitsustele, kus neid kasutatakse mitmesugusteks väga eriilmelisteks välja-

makseteks. Nende hulgas domineerivad tegelikult järgmise, 4 grupi, maksed; kuid väike pole ka investeeringute osa.

Neljandaks. Otsesed väljamaksed majapidamistele. Siin domineerivad need maksed, millest saadud raha inimesed kulutavad dominantselt sisetarbimises (pensionid jms). Siit tulevad tagasilaekumised sotsiaalmaksudena (selle maksuga maksustatavalt osalt väljamaksetest), eelkõige aga käibemaksu ja aktsiisidena väljamakstud raha kulutamisel

Sellise arvutuse läbiviimisel on kaks raskust, mis mõlemad on küll ületatavad, kuid annavad lõpptulemuseks arvestatava veaklassi. Esiteks kulude jaotamine nende 4 klassi vahel. Eriti keeruline on see nende kulukirjete korral, millised kannavad nimesid tegevuskulud, ülekantavad kulud, tegevustoetused jmt. teiseks jäävad möödapääsmatult ligikaudseteks iga grupi tagasilaekumise koefitsiendid. Kuid nagu näitab allpool saadud tulemus, on tendentsid nii ilmselged, et ka maksimaalselt võimalik viga ei saa anda vastupidist tulemust. Pealegi on tagasilaekumise koefitsiendid mudeli kalibreerimisel pigem ala- kui ülehinnatud.

Analüüsiks vajalikud andmed on koondatud tabelisse 3.

Tabel 3. Eesti riigieelarve lisaeelarve kulude vähendamine 2008-2009 (miljonites)

Kulu suunitlus	2008	2009 I	2009II
I grupp (tagasilaekumise koefitsient 0)	492,6	993,9	187,4
II grupp (tagasilaekumise koefitsient 0,4)	832,5	980,2	321,9
III grupp (tagasilaekumise koefitsient 0,5)	497,8	1643,0	628,1
IV grupp (tagasilaekumise koefitsient 0,3)	1387,4	2957,7	1658,1
Kokku	3210,3	6575,8	2563,5

Allikas: Autori arvutused. RT I 03.07.2008, 29, 188; RT I 28.02.2009, 15, 93; RT I 26. 06. 2009, 35, 233.

Lihne aritmeetika näitab järgmist. II grupist laekuks 2008 aastal tagasi 333 miljonit krooni, III grupist 249 miljonit krooni, ja IV grupist 416 miljonit krooni, seega kokku 998 miljonit krooni. Arvestades raha liikumise keskmist kiirust oleks võimalik seda raha samal aastal välja maksta 2,2 korda. Kui lugeda, et see makstakse välja samas proportsioonis kui seda on negatiivne lisaeelarve, s.t tagastataks seda neile kuludele, võime lugeda, et kärped tekitasid uute laekumiste vähendamisega 2008 aastal täiendava „augu“ eesti riigieelarvesse 2195 miljonit krooni. Analoogiline arvutus 2009 aasta suhtes näitab, et I negatiivse lisaeelarve raha oleks tagasi laekunud 3,9 korda ja II negatiivse lisaeelarve raha 2,3 korda, seega vähenesid laekumised 2009 aastal tänu negatiivsele I lisaeelarvele $(392+822+887) \times 3,9 = 8429$ miljonit krooni ja tänu teisele negatiivsele lisaeelarvele $(129+314+497) \times 2,3 = 2163$ miljonit krooni. Kokku kärbiti võimalikke uusi

laekumisi negatiivsete lisaeelarvete tulemusel Eestis 2009 aastal seega vähemalt 10,5 miljardi krooni võrra! Selle summa ulatuses jäid järelkult tegemata ka avaliku sektori kulutused.

Järeldused.

Eeltoodud käsitlusest saab teha järgmised olulisemad järeldused.

1. Kaudsete ja tarbimismaksude osakaalu leidmine kogu maksukoormuses on keeruline, kuna maailmas puudub üldtunnustatud metoodika selleks. Mistahes metoodika kasutamisel kaudsete ja otsete maksude määratlemisel jäävad Eesti riigieelarve laekumistes domineerima kaudsed maksud. Eriti suur, ja seejuures kasvav, on riigieelarve tuludes sotsiaalmaksu osakaal.

2. Eesti riigieelarve tulude struktuur erineb oluliselt EL enamiku liikmesriikide omast. Riigieelarve suurim ja kasvava osakaaluga tuluallikas on omapärase ülesehitusega sotsiaalmaks, mis on raskesti liigitatav nii otsete, kaudsete kui tööjõumaksude alla. Väga suure tarbimismaksude osakaalu tõttu on Eesti maksusüsteemi ujuvus nõrk. 2008 aasta esialgsed kokkuvõtte näitavad selgelt, et majandusliku languse perioodidel on Eesti riigieelarve kergesti haavatav.

3. Riigieelarve väga halb täitumine 2008 ja eriti 2009 aasta algul, mis on sundinud valitsust tegema kuni 10% ulatuvaid eelarvekärpeid, on teravalt tõstatanud küsimuse maksukoormuse suurendamisest Eestis. Arvestades Eesti EL keskmisest märksa madalamat maksukoormust on see võimalik. Kuid siin kerkib teravalt küsimus optimaalsest maksukoormusest. Lähtudes Slutski kompenseeritud nõudluskõvera põhimõttest ja Ramsey maksude optimumi teooriast võib kaudsete maksude optimaalse tasemena vaadelda punkti, kus majapidamiste heaolu vähenemise kõver ja ühiskonna sotsiaalse heaolu kasvu kõver maksude tõstmisest lõikuvad.