INFLUENCE OF THE REDUCED VALUE ADDED TAX RATE ON FOODSTUFF ON THE EXPENSES OF HOUSEHOLDS

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The reduction of the value added tax (VAT) rate on foodstuffs has repeatedly been a subject of discussion in Estonian society. The purpose of the discussion has only been political rhetoric by opposition parties which has not been supported by specific studies. In this manner, Riigikogu, the Parliament of Estonia, discussed the subject in 2008 and 2011. The detailed record of the Riigikogu does not show any substantiated reasons for draft legislation by their introducers for reducing the VAT rate on foodstuff. In both cases, the draft legislations were rejected by majority vote and excluded from further proceedings. If the VAT rate on foodstuff had been reduced by up to 5%, households in need of assistance in 2004 would have saved a total of EUR 38 million on VAT on foodstuff and all remaining households together would have saved EUR 46 million. In 2012, the savings of households in need of assistance would have been EUR 44 million and the remaining households would have saved EUR 101 million total. Therefore, the reduction of the VAT rate in Estonia would have benefited those households that do not need any subsistence benefits the most. The calculated receipt of VAT in Estonia’s state budget in 2004 would have declined by EUR 84 million and by as much as EUR 145 million in 2012. The aim of the study is to determine the impact of VAT reduction on food on the expenses of Estonian households and revenues of Estonia’s state budget in the periods of 2004-2007 and 2010-2012. The comparative analysis method is used in the research.

Keywords: value added tax, households, saving.
JEL classification: H25

Introduction

The aim of the study is to determine the impact of a VAT reduction on foodstuff on the expenses of Estonian households and revenues of Estonia’s state budget in the periods of 2004-2007 and 2010-2012, and the purpose is not to investigate the impact on households’ expenditure in the future. The periods studied are the years 2004-2007 and 2010-2012 and they were chosen because a similar study was earlier conducted on the years 2002-2003; therefore, there is no substantial need to repeat it for the purposes of the current study (Zeiger et al., 2005). The years 2008-2009 were not included, as Statistics Estonia lacks the information appropriate to conduct a study on these years (Valtin, 2013).

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VAT is supposed to serve as a neutral tool to collect money on consumption in general, and monies are used in the most expedient way with this method. Social problems are solved in the best possible way by adopting direct methods instead of a VAT incentive (Riigikogu …., 2008). The draft act was rejected with 53 votes of the members of the Riigikogu in favour and 30 votes against, and it was withdrawn from further legislative proceedings.

The reduction of VAT rate imposed on foodstuff has been also seen as an opportunity to increase the income of agricultural producers on account of VAT return. Draft Act 846SE was submitted to the Parliament by the Socio-Democratic Party (Riigikogu …., 2011). The opportunity involves a lower VAT rate imposed on the production of foodstuff at the original source or on every kilogram of grain, kilogram of milk, and every original foodstuff product that passes the foodstuff processing industry straight to trade. When entrepreneurs that are, as a general rule, persons liable to VAT, consistently selling their goods and imposing a 5% VAT rate on their products, while purchasing other goods needed for production at a 20% VAT rate, the set-off principle will definitely be successful for agricultural producers (Riigikogu …., 2011). This time also, the draft act was rejected with 45 votes of the members of the Riigikogu in favour and 20 votes against (3 neutral votes), and it was withdrawn from further legislative proceedings. The study, which was conducted with some assistance from the authors of this article, showed that as a consequence of direct aid, which does not generate turnover and is not subject to VAT, agricultural producers are entitled to deduct VAT paid on inputs purchased with direct aid from the VAT due on taxable turnover. Such an arrangement favours agricultural producers that are liable to VAT (Zeiger et al., 2008). Additional investigation will be needed to explain the financial gain available to agricultural producers liable to VAT on account of the reduced VAT on foodstuff. Such a study should involve mapping of the foodstuff production chain in general, the position of the aforementioned agricultural producers within this chain and identification of the financial success of the chain in general for the purposes of reducing the VAT rate imposed on foodstuff.

The result of analysis of foreign scientific studies in the field of problem studied by the authors of the current paper shows no foreign scientific studies on the analysis of the impact of the VAT ratio reduction on expenses of households. The issue of VAT on foodstuff is discussed in a number of applied researches. The analyst from Cato Institute from the USA generally discusses the implementation of VAT in the USA. The analyst’s opinion is that the result of implementing VAT would be a stagnating economy, higher budget deficits, and fewer jobs for American workers (Mitchell, 2011). Analysts from the Technical University of Ostrava investigated the role of the VAT on foodstuff, but they focused their study on consumer basket rather than examining household expenditures (Sirkoi et al., 2012). The impact of VAT in household’s consumption expenditures is studied using the income decile, households of different composition, and different household sizes (Lehay et al., 2010). This method does not allow comparing the aforementioned study for the authors of current paper where households are divided into groups based on income. The impact of VAT on household’s consumption expenditures is also studied using the income terciles breakdown method of the households (Boeters et al., 2006). This method does not allow comparing the study with research of the authors of current paper as well. The tax policy investigators of the OECD came to the conclusion that reduction of VAT rate did not achieve the stated objective. The prices of goods, which introduced a reduced rate did not decrease for consumers. The benefits were received by commercial undertakings. At the same time, the tax policy investigators of the OECD came to a conclusion that reduction of VAT rate can only be used in conjunction with the entire tax system (Owens et al., 2011). Analysts from Namibia investigated the effect of zero rate of VAT on basic commodities in Namibia. They distributed the households by income groups for the investigation. Using the breakdown of households by income groups, analysts came to the same conclusion as the authors of the current paper. They stated that the zero rate of VAT is more in favour of rich households than poor households (Odhiambo and Odada, 2010). Increasing of consumption tax in Japan was investigated as one option to solve the fiscal problems in the country. Some similarities exist between the investigation of increasing the consumption tax in Japan and research of the authors of current paper. According to the current paper, the effect of tax reduction is in favour of households that do not need support for coping. It also appears from Japanese investigation that increasing the consumption tax rate has more effect on households that do not need support for coping (Keen et al., 2011). Related with the topic that is not scientific study as well. Study on reduced VAT rate applied to goods and services in the Member States of the European Union. One of the focuses of the study underlines that targeted direct budget subsidies can often achieve better results at lower costs than reduced VAT rates (Copenhagen Economics …., 2007). In their study on VAT reforms, the Norwegian analysts focused on welfare generally, not on the impact of VAT rate reduction in the households expenses on food and revenues of state budget (Bye et al., 2003).
with Estonian Research Company Emor AS) indicates that the retail margin of 2.5% milk, packaged in plastic, had increased to 16% by May 2012 and the retail margin of cheese to 42% (Voog et al., 2012). As a consequence of the increase of the standard value added rate to 20% in 2009, VAT amounts to 17% in price margin. The information provided above demonstrates that in the case of price differences of foodstuff, retail margins applied by retail sellers play a role somewhat more important than the proportion of VAT included in prices.

Opinion leaders in Estonian society have also formed their opinions with respect to the reduction of the VAT rate imposed on foodstuff. According to Ms Marje Josing, Head of the Estonian Institute of Economic Research, lower VAT would not make foodstuff sold in Estonian shops cheaper as traders would still charge prices that purchasers are willing to pay. “History has shown that merchants take whatever possible from the market and reduced tax rates would do nothing to lower prices. The additional income would be pocketed by manufacturers and retail sellers,” Ms Josing told. According to an economic expert of the Development Foundation, Mr Heido Vitsur, VAT imposed on foodstuff is not an economic but a socio-political issue and he either does not support a lower tax. “Instead, we should review the measures available to help facilities with coping difficulties,” Mr Vitsur said. Economist, Mr Andres Arrak, also supports his opinion; according to him, more benefits should be paid instead of reducing VAT rates (Josing et al., 2010).

Obviously, reduction of any tax rate to improve the well-being and life quality of people is always welcome and probably approved by majority but one must also consider the value aspects of such decisions: how much it will cost, who it is aimed at and whether there are any alternatives. One of the authors of this article, Peedu Zeiger, has expressed an opinion that considering the small territorial size of Estonia, direct aid for households that need assistance for coping would be much more effective and, for the state, also a better economic solution than reducing the VAT rate on foodstuff. As an alternative, one could consider raising the basic exemption to the minimum gross wage level. Over and over, we conclude that every political decision will have a certain value. Should the political powers suddenly feel the urge to re-allocate the monies (which are always limited) in accordance with some new radical principles, the choices should be investigated thoroughly at first, then weighed and compared with different alternatives and only then would a decision be adopted (Zeiger, 2010).

If we were to discuss the importance of VAT on foodstuff, using the so-called hamper methodology, the methodology involves identification of the VAT amount, based on the value of the foodstuff hamper of consumers. The hamper, used by the Estonian Institute of Economic Research, has fixed composition and weight, and equates to real purchases made over one week by a four member family in shops of Tallinn, Estonia. Twenty-four commodity groups with 48 fixed foodstuff products from the hamper (Kadarik, 2011). The methodology does not allow comparing the value of the hamper of different households and VAT included. Furthermore, this does not allow considering the effect on Estonia’s state budget that would result from reducing the VAT rate on foodstuff.

The purpose of this study is to find answers to the following questions studied.

1. How and to what extent would the reduction of the VAT rate on foodstuff influence the expenditures of households, based on the mutual comparison of members of different households?
2. What is the impact of the reduction of the VAT rate on foodstuff on Estonia’s state budget?

Materials and methods

Information on the income and expenditures of households from Statistics Estonia has mostly been used for the study. Experts from the specialities concerned were consulted to specify the information provided by Statistics Estonia (Valtin, 2013). As the purpose of this study is not to provide an assessment of social layers and inequality, households were not divided into income deciles and income quintiles. Such an allocation would not permit the authors to study the expenditures of households allocated to certain income deciles and income quintiles at the level of detail required (Valtin, 2013).

The study concerned uses the same principles that were used during earlier studies to distribute the households (Zeiger et al., 2005). Based on the changes made in distribution of households by Statistics Estonia in 2010, the study has also changed the distribution of households to a certain extent. The changes involve households earning the largest income and forming an income group where a member of the household earns more than three gross minimum wages per month instead of the former four gross minimum wages per month. The following methodology was employed for the purposes of this study to divide households into groups:

- **Group I**: households with a net income per capita of up to one gross minimum wage per month
- **Group II**: households with a net income per capita between one and two gross minimum wages per month
- **Group III**: households with a net income per capita between two and three gross minimum wages per month
- **Group IV**: households with a net income per capita exceeding three gross minimum wages per month

Households in Group I, where household members earn one gross minimum wage per month per capita, are seen as households that would need additional support for everyday
coping. The other households do not need any extra support for the purpose of everyday coping.

Minimum gross wages are used, for the purposes of this study, to divide households into groups. Otherwise, this indicator is of informative nature and characterises the growth of minimum gross wages in Estonia during the years studied. Minimum gross wages have increased during the years studied and went from EUR 159 per month in 2004 to EUR 290 per month in 2012 (Figure 1.)

All the information, expressing monetary values before Estonia’s transition to euro, is given in Estonian kroons, and it has been converted into euros at the exchange rate where one euro is equal to 15.6466 Estonian kroons.

According to the Value Added Tax Act of the Republic of Estonia, the standard \( VAT \) rate in Estonia is 20\% and the reduced rate, respectively, 9\% (Value Added …, 2003). The reduced \( VAT \) rate is not applicable to foodstuff in Estonia. According to Article 98 of the European Union Directive, the Member States can impose either one or two reduced tax rates as provided by the Directive, a reduced tax rate can also be applied on foodstuff (Directive …, 2006). Reduced tax rates are imposed on foodstuff in a number of the European Union Member States (European Commission …, 2013) (Table 1).

To answer the first question, the study aims to establish monthly expenditures of Estonian households, per capita, on foodstuff, using monetary expression. The information obtained will then be compared and differences between households found. By means of comparative analysis, differences in household expenditures on the foodstuff products of different groups will be identified, followed by determination of the possible calculated saving effect, resulting from a reduced \( VAT \) rate on foodstuff, obtained on per capita and different household group bases, in general.

Annual expenditures on foodstuff of all the households will be determined in order to answer the second question studied. To find the result, the annual expenditures of household members will be multiplied by the number of household members and then the annual expenditures on foodstuff of all the households groups will be added up. The \( VAT \) amount included in annual expenditures on foodstuff can be calculated using the equation:

\[
TA = \frac{AEF}{SR_1} \times SR_2
\]

where
- \( TA \) - total \( VAT \) amount in total household expenditures on foodstuffs;
- \( AEF \) - total annual expenditures on foodstuffs;
- \( SR_1 \) - standard \( VAT \) rate coefficient (1.18);
- \( SR_2 \) - standard \( VAT \) rate coefficient (0.05).

For example, in 2004, the total expenditure of all households on foodstuff amounted to EUR 759,978,178 and the total \( VAT \) amount in total household expenditures on foodstuff amounted to EUR 115,928,875. The reduced 5\% \( VAT \) rate will be used for the purposes of this study to determine the \( VAT \) amount obtained if the reduced \( VAT \) rate was applied. The reduced \( VAT \) amount included in annual expenditures on foodstuff can be calculated using the equation:

\[
RA = \frac{AEF}{SR_1} \times SR_3
\]

where
- \( RA \) - reduced \( VAT \) amount in total household expenditures on foodstuff;
- \( AEF \) - total annual expenditures on foodstuff;
- \( SR_1 \) - standard \( VAT \) rate coefficient (1.18);
- \( SR_3 \) - reduced \( VAT \) rate coefficient (0.05).

In the case of the reduced tax rate, the \( VAT \) amount is EUR 32,202,465 in the case of this study. To find the reduced revenues of state budget income resulting from reduced \( VAT \) rate, the \( VAT \) amount, obtained by applying
Table 1. VAT rates % applied in the Member States of the European Union

<table>
<thead>
<tr>
<th>Member States</th>
<th>Code</th>
<th>Reduced rate on foodstuff</th>
<th>Standard rate</th>
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<tbody>
<tr>
<td>Belgium</td>
<td>BE</td>
<td>6</td>
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<tr>
<td>United Kingdom</td>
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Source: European Commission ..., 2013

the reduced rate, will be deducted from the VAT amount determined by applying the standard rate. For example, in 2004, the certain amount was EUR 83,726,409. The calculated annual total expenditures of households are also compared with the respective foodstuff retail sale indicator of Statistics Estonia. Differences are explained/justified.

**Results**

In 2004 compared with 2003, one can see that the division of households into groups demonstrates the considerable increase of importance of the first group (Household living niveau 2004, Household Budget 1996-2006). The share of households that need assistance for coping has changed in 2004 and amounts to 55% of total number of households compared with 46% of total number of households in 2003 (Zeiger et al., 2005). The changes continue to evolve in 2005 and then the importance of Group I households starts to drop, amounting to 33% of households in 2012 (Figure 2) (Household ..., 2005; Valtin, 2013). The number of Groups II and III households also changes considerably; the respective indicator demonstrates growth in 2010-2012 and this allows to conclude that the middle class or the group coping without assistance has increased considerably in Estonia (Household ..., 2004-2007 and 2010; Household ..., 2005-2007 and 2010-2011).

The average indicators of the period studied show that the share of Group I households in Estonia amounts to 46%, while the remaining household groups make up 54% of total number of households.

When analysing the expenditures per capita per household on foodstuff, it was found that Group I spent EUR 37 per capita per month on foodstuff in 2004, while Group IV households spent EUR 78 per capita per month, which is 2.1 fold value of Group I expenditures. In the case of reduced VAT rate on foodstuff, Group I household members would have saved EUR 4.09 per capita per month. By 2012, foodstuff
expenditures per capita per month for Group I households amount to EUR 56 and EUR 115 per month per capita for Group IV households, which is twice as much as the expenditures of Group I households per capita per month on foodstuff (Figure 3). In the case of reduced VAT rate on foodstuff, Group I household members would have saved EUR 7.06 per capita per month in 2012, while the savings of Group IV households per capita would have amounted to EUR 14.39.

If one considers the fact that the importance of group households has dropped to 33% by 2012 compared with 55% in 2004, there is a reason to assume that the saving effect contributed by the reduced VAT rate on foodstuff would be in favour of coping households or the households that do not need state assistance for coping. Such a suggestion is confirmed by Figure 4, which indicates that Group I households would have saved a total of EUR 38 million in 2004 on the reduced VAT rate, while the other households would have saved a total of EUR 46 million. In 2012, the saving effect is strongly in favour of households that do not need support for coping: Group I households would saved EUR 44 million on account of the reduced VAT rate, while households that do not need support would have saved EUR 101 million annually on the reduced VAT rate on foodstuff (Figure 4).

In their previous study, the authors and co-authors concluded that the expenditures of Estonian households on foodstuff would amount to the level of 25-28% of total consumption costs by 2010. Therefore, the expected positive effect on incomes of households, contributed by the reduction of the VAT rates on foodstuff, would diminish in the long run (Zeiger et al., 2005). This opinion has been confirmed and, as shown in Figure 6, expenditures on foodstuff have reached the estimated level and remained between 24-26% of total consumption costs for 2010-2012. The reduced VAT rate imposed on foodstuff would not either have much of an effect as the importance of other consumption costs taxed by VAT has considerably increased within the cost structure. For example, the importance of dwelling costs has risen to 25% of total consumption costs, while in 2003 the respective
The calculated annual consumption of foodstuff of Estonian households is somewhat smaller, compared with the retail sale of foodstuff at current prices (Figure 6). The calculations were prepared with the purpose of controlling the compliance of calculated expenditures of household members to the total retail sale of foodstuff in Estonia. Differences in calculated expenditures and retail sale are attributable to the fact that the consumption of households is calculated on the basis of the monthly consumption of households that is, in turn, calculated by the number of members of households and then the annual consumption is found by multiplying the results by 12. The retail sale of foodstuff at current prices also includes sales of foodstuff to individuals not recorded in household information, such as tourists and other individuals staying in Estonia.

Using the calculation methodology to determine the reduced collection of VAT on foodstuff, one can see that the reduction of VAT rate on foodstuff would result in a considerably reduced collection of VAT to the Estonian state budget.

If a 5% VAT rate would be applied on foodstuff, instead of the standard rate, the collection of VAT to the Estonian

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**Fig. 4.** Total annual savings of Group I households on the reduced value added tax rate on foodstuff versus the total annual savings of all the other household groups on the reduced value added tax rate on foodstuff, million EUR

**Fig. 5.** Comparison of relative importance of main consumption costs of Estonian households in consumption costs, as a percentage
state budget would have fallen by EUR 84 million in 2004 and by 2012 the collection would have been reduced by EUR 145 million per annum (Figure 7).

Conclusions

The aim of the study is to determine the impact of a VAT reduction on foodstuff on the expenses of Estonian households and revenues of the Estonia’s state budget in the periods of 2004-2007 and 2010-2012. It was learnt during the study that a reduction of VAT rates on foodstuff would favour members of households that did not need support by 2.1 fold in 2004 and 2 fold in 2012, respectively. Group I households would have saved, in total, EUR 38 million on the reduced VAT rate on foodstuff, while the other households in total would have saved EUR 46 million. In 2012, the saving effect is strongly in favour of households that do not need support would have annually saved EUR 101 million on the reduced VAT rate on foodstuff. The calculated revenues of VAT in Estonia’s state budget in 2004 would have declined by EUR 84 million and by as much as EUR 145 million in 2012.

The adjustment of tax rates is an economic, social, and fiscal policy issue and, thus, the adjustment of VAT rates on foodstuff could not be observed without involving other sources at national level. The higher is the number of differences in the tax system, the more it would complicate tax administration, offering more opportunities for tax fraud.

Bibliography


Sources of information


