EFFECT OF INVESTMENTS AND VARIOUS SUBSIDIES AND APPLICATION OF VALUE ADDED TAX SCHEMES ON CROP CULTIVATION ENTERPRISE'S CASH FLOW

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ABSTRACT. Effect of investments and various subsidies and application of value added tax schemes on crop cultivation enterprise's cash flow. *Due to cyclical nature of grain crop cultivation and receipt of various subsidies in autumn and winter, agricultural holdings need additional funding on account of external capital to balance their cash flows, generated from business. Payment of capital support to rural entrepreneurs was started in Estonia in 1997 to facilitate investments. Simultaneously, schemes for the payment of various direct aid were launched. In 2001, European Union pre-accession investment support programme (SAPARD) was launched. Investment support revived the purchase of new machinery and equipment while also contributing to building and reconstruction of production premises in the countryside. At the same time, support funds were mostly distributed among relatively limited number of rural entrepreneurs, therefore contributing to un-heterogeneous development of rural areas. According to Article 25 of the Sixth Directive of the Council of European Communities, Member States may impose flat rate value added tax scheme on agricultural holdings. If flat rate tax scheme is applied, agricultural holding is not required to register as value added tax liable. Therefore, agricultural holding must not deduct value added tax, paid on production inputs, from value added tax payable upon the sales of agricultural production. To compensate for such a restriction, the agricultural holding is expected to add value added tax, by applicable rate, to the taxed value of agricultural produce sold and therefore compensate for the funds spent on value added tax upon purchase of inputs.*

Keywords: *investment, support, cash flow, flat rate value added tax scheme*

Introduction

Regardless of numerous state support measures applied, the development of Estonian agricultural sector has slowed down (Table 1). Since year 2001, agricultural production has not increased and both net added value and earnings made by agricultural holdings have even dropped.

Table 1. Revenue structure of Estonian agricultural producers in 2000–2003, million EEK

Indicator	2000	2001	2002	2003
Production of agricultural enterprises	6041.3	6796.5	6751.6	6675.8
Total intermediate consumption	3811.1	4385.4	4711.3	4638.0
Depreciation	650.4	669.8	706.2	749.1
Net added value	1579.8	1741.3	1334.1	1288.8
Revenue of producers	733.4	747.4	382.0	169.6

Source: Ministry of Agriculture

Decreasing growing area of arable crops can be seen as one of the reasons for dropping production indicators (Figure 1). Compared to the last year, growing area of arable crops decreased, respectively, by 16.8% in 2001 and 5.4% in 2002. Growing area of arable crops increased by 1.5% in 2003 and 0.9%, respectively, in 2004 (Statistical Office of Estonia, Ministry of Agriculture).

The other important factor, affecting the decline in production indicators, is depreciation of production technologies and agricultural equipment, accompanied with investment deficiency. For example, in 2000, 65.7% of tractors used by Estonian agricultural holdings and 43.1% of other machines were older than 10 years. Over the last ten years, investment requirements are known to exceed the amount of investments made by 3–5-fold (Sommer, 2003).

Payment of capital support to rural entrepreneurs was started in Estonia in 1997 to facilitate investments. Simultaneously, schemes for the payment of various direct aid (dairy cow support, grain cultivation support, fuel excise duty support, etc.) was launched. In 2001, European Union pre-accession investment support programme (SAPARD) was launched. Investment support revived the purchase of new machinery and equipment while also contributing to building and reconstruction of production premises in the countryside (Lehtsaar, 2003). At the same time, support funds were mostly distributed among relatively limited number of rural entrepreneurs, therefore contributing to un-heterogeneous development of rural areas.

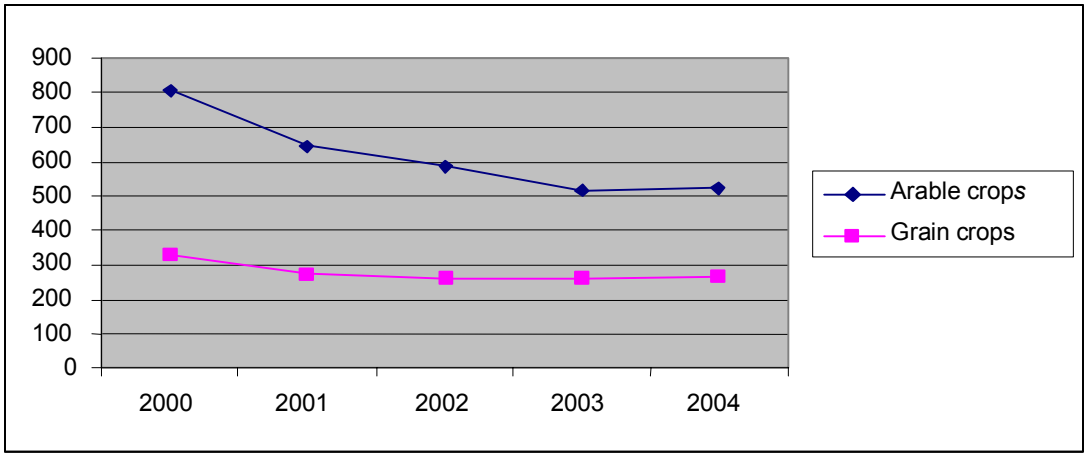

Figure 1. Growing area of arable crops and grain crops in Estonia in 2001–2004, thousand hectares

Source: Statistical Office of Estonia, Ministry of Agriculture, authors

In 2004–2006, 503.5 million kroons are available to holdings applying for agricultural production investment support. In 2004 alone, the applications for investment support totalled to 343.2 million kroons or approximately 68% of the funds allocated for the period of three years. In 2005–2006, only 260.2 million kroons are available from the agricultural investment support budget (Saluveer, 2005).

Material and methodology

This article is an attempt to analyse the effect of investments made by agricultural holdings, support available to holdings and implementation of the Value Added Tax, currently in force, on agricultural producer's cash flow while investigating the expedience for the implementation of flat rate value added tax scheme.

Economic indicators of three Estonia agricultural holdings in year 2003 were used to create a 'model holding', serving as the basis for investigating the effect of investments, support schemes and implementation of an alternative value added tax scheme. The model holding has 769 hectares of land at its disposal and engages six employees. The holding specialises in grain crops and rapeseed. Income on sales of production amounts to 2.9 million kroons per annum, while services rendered bring in 480 thousand kroons and giving a profit of 493 thousand kroons. The investments made by the holding over a year amount to 3.1 million kroons; it applies for 712 thousand kroons as investment support and 531 thousand kroons as various other subsidies.

Mean arithmetic indicators of three holdings were used to plan investments made by model holdings and financing scheme adopted. Respective provisions of the Sixth Directive of the Council of the European Communities were investigated for the implementation of value added tax scheme at flat rate. As for the theoretic approach, the opinions of a number of researchers and value added tax experts (Terra, Lehis, Nurk *et al*.) were considered regarding the issues on imposing value added tax and the Value Added Tax, currently in force in Estonia.

Three different cash flows were studied to achieve the objectives established for the work:

1) current economic activities without additional investments and when applying calculation methods adopted from the Value Added Tax, currently in force;
2) gain from current economic activities with cash flow generated by investments;
3) cash flow where alternative value added tax scheme with fixed tax rate was imposed on agricultural holding instead of the provisions of the Value Added Tax, currently in force.

Effect of investments and subsidies on cash flow generated by agricultural holding

Real indicators of agricultural holdings in 2003 were investigated for cash flow analysis. The model holding analysed had 560 thousand kroons in cash at its disposal at the opening of the year. From January to March, income generated by services rendered and sales of finished production in stock, brought over from the last year, covers the business expenses (Figure 2). In April, sales of grain crops and provision of services continue but expenses attributable to spring works contribute to negative cash flow. Expenses incurring in April are covered on account of balance brought forward, but in May the expenses exceed the income to an extent forcing the holding to look for working capital credit of 600 thousand kroons to balance its cash flow. Also, in June, July and August the company has to fund its business from credit. In total, the model holding needs working capital credit, amounting to 1.25 million kroons, to survive until the revenues generated from sales of production are flowing back in to the holding.

In September 2003, receipt of grain crop support assured the required increase in income the producers required. As of year 2004, the subsidies were received only in December, therefore, delaying the improvement of financial situation of holding by month. In October-November, major share of grain crops and rapeseed produced is sold and short-term loan disbursed to the holding is repaid. Company's cash flows remain positive in autumn and spring; remaining cash balance increased to 1.4 million kroons by the end of year.

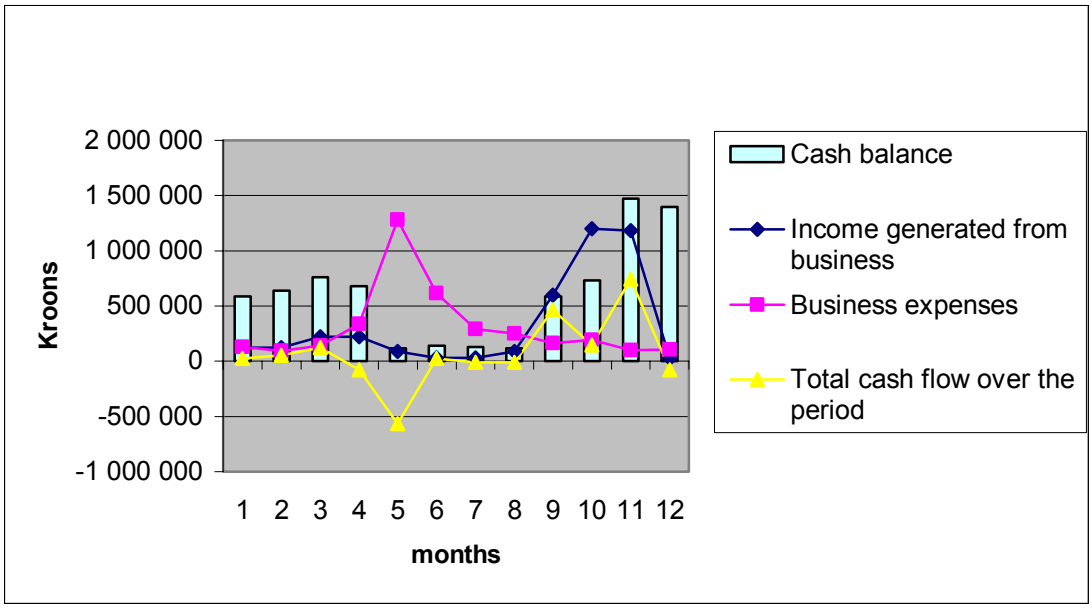

Figure 2. Cash flows generated by model holding's business, EEK

Source: By authors

As the model holding planned to make investments in the amount of 3.1 million EEK over the year, investigation of cash flows generated by business is not sufficient to fulfil the task at hand. One should also study the cash flows generated by investment activities, as investments are mostly made in spring while the current expenses are also the biggest, amounting to 1.3 million kroons in May. Investments increase the demand for funding from external sources, usually meaning long-term bank loans or financial lease. Investments made in spring are usually accompanied by additional expense – payment of value added tax in an amount exceeding 500 thousand kroons.

Total with investments, expenses amount to approximately 3.5 million kroons in May (Figure 3).

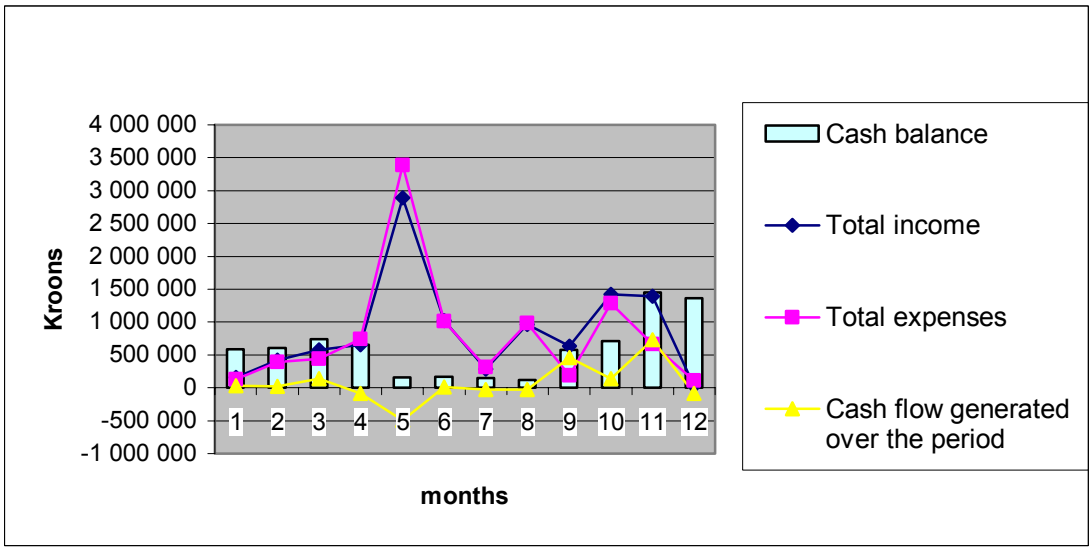

Figure 3. Cash flows generated by model holding with investments, EEK

Source: By authors

Use of financial lease and bank loan allows dispersing real financial expenses to a certain extent but also contributes to additional interest expense. Model holding has to pay interest in amount of 123.4 thousand kroons

per annum for using addition funds from external sources, equivalent to approximately 4.2% of income generated from sales of grain crops.

Payment of value added tax, accompanying investments (over 500 thousand kroons) could be avoided by purchasing the equipment required from a supplier conducting business in some other European Union Member State. According to the Value Added Tax Act in force, a holding is not required to pay input value added tax if revered taxing is applied; this would result in loan requirement diminished by 500 thousand kroons. Nevertheless, the holding is required to have an overview of prices in machinery in other Member States to make the most of such an opportunity. If this scheme was applied, holding's own contribution or long-term bank loan should serve as the source for funding as use of financial lease would be automatically accompanied by input value added tax paying liability. Purchase of machinery from other European Union Member States (provided that intermediary operators are not involved) is deemed acceptable under investment support eligibility requirements.

Substantiation for the implementation of flat rate value added tax scheme and effect on cash flow generated by agricultural holding

According to Article 25 of the Sixth Directive of the Council of European Communities, Member States may impose flat rate value added tax scheme on agricultural holdings. If flat rate tax scheme is applied, agricultural holding is not required to register as value added tax liable. Therefore, agricultural holding must not deduct value added tax, paid on production inputs, from value added tax payable upon the sales of agricultural production. Agricultural holding is expected to add value added tax, established upon the implementation of flat rate value added tax scheme, to the taxed value of agricultural produce sold (Terra, 1993).

In Estonia, implementation of flat-rate scheme has not been considered expedient for agricultural holdings (Oja, 2002) and Value Added Tax Act, currently enforced in Estonia, does not provide for the utilisation of such opportunity in nearest future (Nurk, 2004). Flat rate tax system may be applied with regard to agricultural holdings in several European Union Member States (for example, England, Ireland, France). In England, imposing of flat rate value added tax scheme is appropriate if input value added tax amounts, deductible from the value added tax imposed on agricultural produce sold, are being considerably smaller than the value added tax imposed on sales under flat-rate method. In England, 4% serves as the flat-rate input value added tax, imposed on goods and services purchased by agricultural holding; in Estonia, the respective rate could be 5% (Oja, 2002).

Entities liable to value added tax are entitled to deducting value added tax, related to production inputs, from value added tax gained from sales of production (Zeiger, 2004), when applying accounting methods established with the Value Added Tax Act. Analysis of the 1st cash flow of the model holding, developed by the authors, demonstrates that implementation of valid methods for value added tax calculation has positive effect on cash flow generated by agricultural holding. Value added tax prepaid is incurred over the taxation periods when value added tax paid on inputs exceeds the value added tax on sales and therefore, agricultural holding may request refunding of such amounts over the next taxation period by submitting a respective application to the Tax and Customs Board. As the results of implementation of the value added tax scheme described, the cash balance of the agricultural holding is going to be positive by the end of the period investigated (Figure 4).

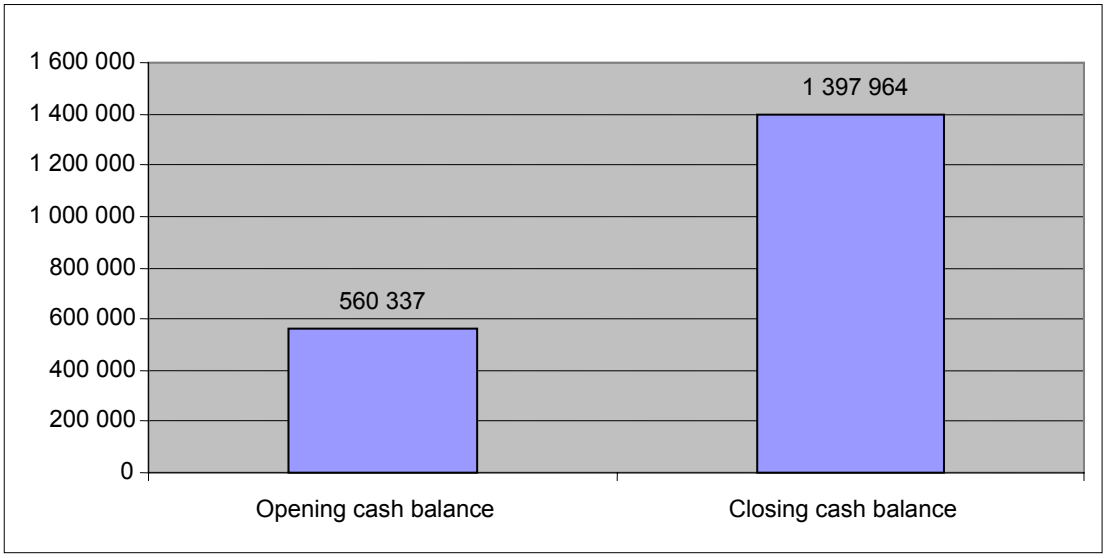

Figure 4. Cash balance of agricultural holding if the tax rates established with the Value Added Tax Act apply, EEK

Source: By authors

If flat-rate tax scheme were imposed on agricultural holding of Estonia (using the 5% tax rate) and apply, for example, the principles applicable in England to such value added tax scheme, agricultural holding would lose the opportunity to deduct value added tax related to input purchased by agricultural holding from value added tax generated from sales of produce. When compared to value added tax calculation methods currently applied, an agricultural holding can not apply prepaid value added tax even if the amount of value added tax paid on inputs exceeds the amounts of value added tax on sales. Compared to the implementation of valid accounting method of holding's cash flow, the negative impact is clearly notable under this scheme. The cash flow analysis shows that agricultural holding's cash balance becomes negative already by the end of the 5th month (Figure 5).

If special value added tax scheme would apply, accompanied by the implementation of 5% tax rate, the amount of value added tax, gained upon sales of agricultural produce, is going to be 170.4 thousand kroons, the amount of value added tax, paid upon purchase of inputs, is going to be 605 thousand kroons (Figure 6).

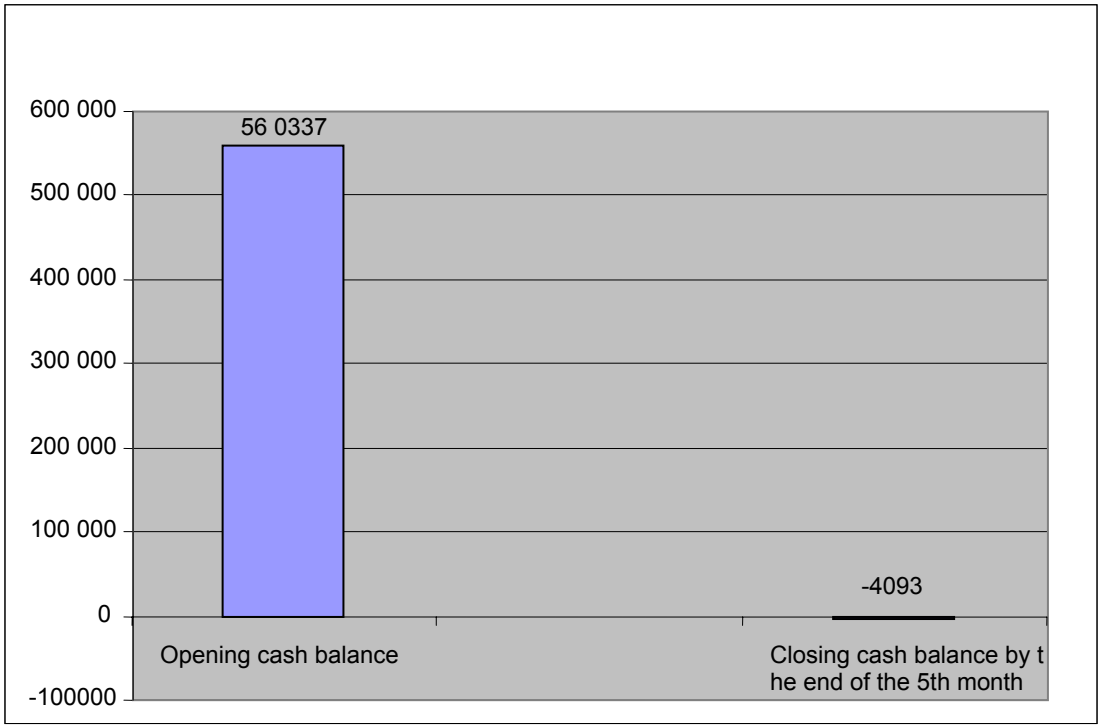

Figure 5. Cash balance of agricultural holding upon the implementation of flat-rate value added tax scheme, EEK

Source: By authors

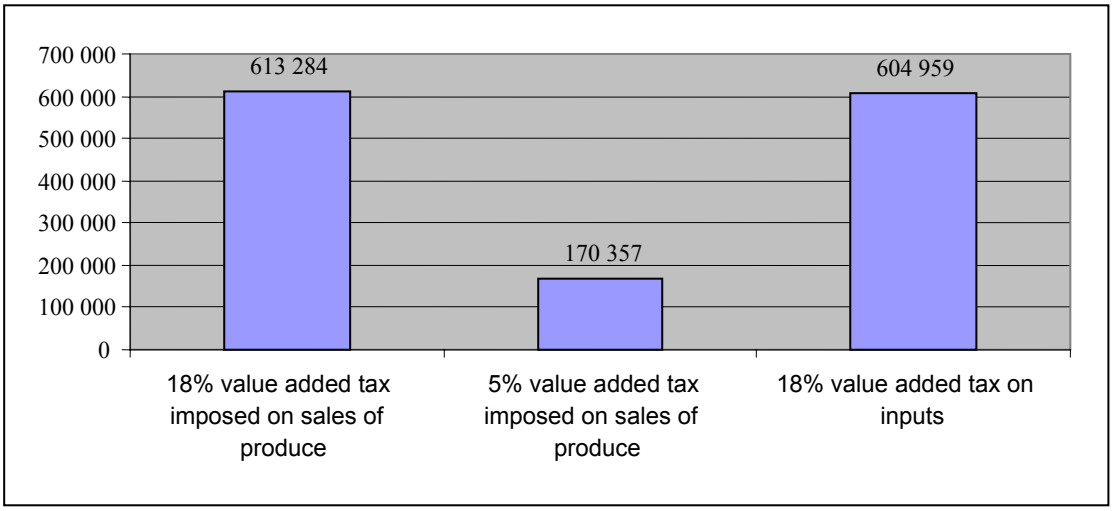

Figure 6. Comparison of value added tax gained upon sales of produce and paid on purchase of inputs, EEK

Source: By authors

When compared to the value added tax received on sales of produce, one can clearly note the difference with amounts of value added tax paid on inputs. As upon the implementation of special value added tax scheme an agricultural holding would not be able to deduct value added tax, paid on inputs, from value added tax on sales, there is going to be a difference amounting to 434.6 thousand kroons in value added tax, not in favour of agricultural holding.

Conclusions

Due to cyclical nature of grain crop cultivation and receipt of various subsidies in autumn and winter, agricultural holdings need additional funding on account of external capital to balance their cash flows, generated from business. The analysis of cash flow, conducted with model holding, reveals that external financing and working capital requirements are most urgent over the period from May to August.

Investments in model holding were started in February. As investment support amounts are collected to the bank account of agricultural producer within three months as of the completion of investment, agricultural holdings are forced to apply external capital. External financial requirements for investing are most urgent from February to May. Holding's own assets are not sufficient to cover both business and investment requirements and subsidies are not yet available to balance the cash flows. Model holding has to pay interest in amount of 123.4 thousand kroons per annum for using addition funds from external sources, equivalent to approximately 4.2% of income generated from sales of grain crops.

Payment of value added tax, accompanying investments (over 500 thousand kroons) could be avoided by purchasing the equipment required from a supplier conducting business in some other European Union Member State. According to the Value Added Tax Act in force, a holding is not required to pay input value added tax if revered taxing is applied; this would result in loan requirement diminished by 500 thousand kroons.

According to Article 25 of the Sixth Directive of the Council of European Communities, Member States may impose flat rate value added tax scheme on agricultural holdings. If flat rate tax scheme is applied, agricultural holding is not required to register as value added tax liable. Therefore, agricultural holding must not deduct value added tax, paid on production inputs, from value added tax payable upon the sales of agricultural production. To compensate for such a restriction, the agricultural holding is expected to add value added tax, by applicable rate, to the taxed value of agricultural produce sold and therefore compensate for the funds spent on value added tax upon purchase of inputs.

The analysis, conducted by the authors of the article, reveals that imposing of a flat-rate value added tax scheme on agricultural holdings, bearing resemblance to the model holding described for investigation purposes, is not reasonable and even possible. There are three reasons for that: 1) when flat-rate value added tax scheme is imposed, the amount of value added tax paid on inputs purchased is going to be considerably larger than the value added tax amount receivable upon sales of produce; 2) imposing of flat-rate value added tax scheme on model holding's cash flow has negative effect in comparison to the implementation of value added tax accounting method, currently in force, while 3)Value Added Tax Act currently enforced in Estonia does not provide for the implementation of flat-rate value added tax scheme with regard to agricultural holdings.

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