



DO REDUCED VAT RATES ON FOODSTUFFS IN EU AFFECT CONSUMERS?

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ABSTRACT

Value added tax represents an important fiscal policy instrument, mainly because of the stable source of tax revenues of state budgets. At the level of EU member states, the value-added tax is most harmonized, individual member states have always an option to implement more types of VAT rates on selected goods. In order to keep prices of foodstuffs and basic necessity products at the lowest possible level and with the highest availability for consumers, EU member states apply reduced VAT rates on these goods. The main objective of the paper is to research the impact on reduced VAT rates on foodstuffs in relation to consumers. The complexity of legislative adjustments on taxation of foodstuffs should be progressively simplified because reduced VAT rates on foodstuffs become ineffective and increase the burden on households compared to incomes of households. This paper is dedicated to the observation whether the application of the reduced VAT rate on foodstuffs affects the change in total expenditures of households. Based on the panel regression model with fixed effects on states, the standard VAT rate at the chosen significance level plays a significant factor, which affects total expenditures on foodstuffs of households and thus affects consumers. In the case of the reduced VAT rate on foodstuffs, this fact has not been confirmed.

Keywords: value added tax; reduced tax rate on foodstuffs; household consumption

INTRODUCTION

In 2010, **Mirrlees et al. (2010)** have published that value-added tax (VAT) represents unquestionably the most successful fiscal innovation of the last half-century, perhaps the most economically efficient way in which countries can raise significant tax revenues. What additional benefits does the existence of VAT have? Does the reduced VAT rate on foodstuffs in Europe affect the behaviour of consumers and affect their total consumption of foodstuffs?

The tax system should be neutral, simple, fair, and effective. The neutrality, simplicity, and uniformity of VAT have been supported since 2007 by EC legislation in the form of **Council Directive 2006/112/EC** on a common system of VAT in the member states with the aim of neutral economic competition and the harmonization of VAT legislation, including approaching rates. The standard VAT rate in the EU-28 reaches an average level of 21.5%. When observing existing VAT rates, special rates are applied on selected goods and services within EU member states.

Lowering the level of taxation can lead to an increase in consumption of private households. **Alm and El-Ganainy (2013)** researched the effect of the standard VAT rate on consumption of households and concluded that a 1% increase in the VAT rate negatively affects the

consumption of households by approximately 1%. Households with a higher percentage of consumption of goods and services with reduced VAT rates will gain from reduced rate more than other households. This fact is considered to be the main advantage of having the reduced VAT rate on foodstuffs. Moreover, the existence of a negative correlation between the level of the tax rate and the consumption of households supports this importance.

Low-income states dispose of higher percentage of total expenditures spent on foodstuffs compared to high-income states. In order to keep prices of foodstuffs and basic necessity products at the lowest possible level and with the highest possible availability for consumers, EU member states apply reduced VAT rates on these goods. According to the current Directive, the reduced VAT rate level on foodstuffs cannot be lower than 5%. The reduced VAT rate on foodstuffs reaches an average at 11%. The effectiveness and fairness of the tax in the context of the reduced VAT rate are observed only if the tax really affects a decline in consumer prices. Assuming that the decline in the tax rate does not appear in the price of foodstuffs, it is an increase in deadweight loss and a decrease in availability of goods for low-income citizens. The effectiveness of reduced tax rates use is particularly supported in states where fiscal policy disposes of lower number of tools that deal with the issue of income differentiation and poverty in state (**Ebrill et al., 2001**).

The main objective of the paper is the ex-post research of reduced VAT rates on foodstuffs in EU states and to assess their impact on total expenditures on foodstuffs of households and thus on the behaviour of consumers.

Back in 1939, **Brown (1939)** stated that in a perfectly competitive market, any tax burden on consumption taxes is being moved to the input price of production factors. **Fullerton and Metcalf (2002)** examined how the burden of a particular tax is transferred to consumers, whether through higher commodity prices, transferred to work - through changes in wages, or transferred to capital - through its return. The tax burden depends on demand elasticity and supply elasticity. Given the perfectly competitive market and low-price elasticity of demand, neoclassical economics assumes that a change in the tax rate will be reflected almost exclusively in the price of the goods. According to several empirical studies (**Bernal, 2018; Bernal, 2014; Cornelsen et al., 2015**), the price elasticity of demand for basic foodstuffs is low, therefore the transfer of tax burden on the consumer is close to one. In the opposition, for example, **Attanasio and Weber (2010)**, who state that if unexpected changes in incomes of households do not occur, changes in tax rates should be a significant factor in change of their consumption.

The existence of reduced VAT rates on foodstuffs is according to **Mirrlees et al. (2010)** important for three reasons. Firstly, reduced tax rates will be reflected in the prices of basic necessity foodstuffs, and they become more affordable for a wider range of consumers. Secondly, their impact is significant in the effective and fair distribution of pensions. It allows the low-income groups of the population to maintain a reasonable level of income. Thirdly, through the observation of households spending, these reduced tax rates help to detect consumers' other specific needs.

Empirical studies that focus on transferring the tax burden from VAT implemented on foodstuffs and subsequently burdening consumption of households and behaviour of consumers are unique and differ from one another. Often, the results of the investigated impact of the tax rate growth are different from the results of the investigated impact of the tax rate fall. **David (2012)** analyses the transfer of tax burden under influence of tax rate reduction on agricultural products within the Czech Republic. The increase in prices for these products is, according to the author, precisely influenced by an increase in the tax rate. He notes that the level of tax burden is doubled in prices of products. In case of a reduction of the tax rate on these products, the author does not record such a significant change. Similar conclusions are provided by **Benkovskis and Fadajeva (2013)**. **Bahl, Bird and Walker (2003)** offer an empirical case study conducted within Ireland, where they examine the impacts of reduced excise tax rate on soft drinks. The authors estimate that 30% of the tax income from these goods is the result of VAT applied. VAT tax rate reduction is not fully captured in lowering prices. When the level of rate falls, the authors do not record any evidence of the Laffer effect. The empirical study on tax incidence **Politi and Mattos (2011)** suggest that in case the ad-volarem tax rate is reduced, the price of goods will be underestimated over a short period of time (up to four months). **Miki (2011)** states that consumers decide according to

notifications of change in the VAT level about their consumption. In case of reduced VAT on certain products, it can be assumed that the consumer will postpone the consumption of these products to the future. The range of effect depends on the income and price elasticity of demand. **Hayashi (1985)** states that consumption of households is sensitive to the current level of income of households.

The asymmetry in the effect of level changes in VAT rates is influenced by several facts. Firstly, the increase in rates is reflected in the price of the goods, while their decline does not lead to an adequate drop in prices. This is the result of a weak motivation for enterprises to lower the prices of these goods, as the expected decline would not be caused by pressure of consumers. Secondly, considering the character of the basic foodstuffs and goods, consumers do not consider their price to be decisive and, more importantly, from time perspective they do not consider and compare them in the long term. Recurring patterns of purchases of consumers increase the feeling of security (**Anon, 2009**).

Consumers respond differently to price cutting than to escalation of prices (**Hardie, Johnson and Fader, 1993; Kalyanaram and Winer, 1995**). Transfer of tax burden as well as the change in the behaviour of consumers in the context of their total expenditures are affected by the range between standard and reduced VAT rate. **David (2016)** states that the average transfer of tax burden on consumers is by 14% lower with the standard rate than from goods with a reduced rate.

In addition to the factors influenced by the reduced VAT rate, consumption of households is affected by the set of macroeconomic variables and maturity of the economy in each state. These factors need to be sensitively perceived while examining the consumption of household. When considering the implementation of a reduced VAT rate, it is necessary to take into consideration the phase of the political cycle and the phase of the economic cycle (**Miki, 2011**).

Other important factors are the unemployment rate, other income taxes in the state, the level of disposable income of households, and other consumption indicators (**Alm and El-Ganainy, 2013**).

Scientific hypothesis

Based on the main objective of the paper, the following hypothesis is formulated: "Applying a reduced VAT rate on foodstuffs affects the change in expenditures of households".

MATERIAL AND METHODOLOGY

According to the hypothesis, the analysis of the paper is divided into two parts.

Governments that reduced VAT rates on foodstuff in order to influence foodstuffs prices must follow all changes in tax rates, both standard and reduced. The partial analysis examines the change in the reduced VAT rate on foodstuffs compared to the change in the total expenditures of households on foodstuffs in relation to GDP and compared to the change in the standard VAT rate. The dataset (*VAT rates, reduced VAT rates on foodstuffs, final consumption expenditure of households on foodstuffs in relation to GDP*) consists of the member

states of the European Union in the period from 2007 to 2017 obtained from Eurostat (2018). MS Office Excel version 2013, from the company Microsoft for the operating system Microsoft Windows and Macintosh (Microsoft Corporation, USA), was used as the statistical analysis software.

Statistic analysis

The second part of the analysis examines whether a reduced VAT rate on foodstuffs, at the chosen level of significance, represents an important determinant of the total expenditures of households on foodstuffs using a panel regression model of fixed effects for states. The monitored variables include *tax rates* in the form of a reduced VAT rate on foodstuffs and a standard VAT rate and *other monitored variables* which examined the influence of VAT and other macroeconomic indicators on household consumption. The regression model is expressed by the following relation.

$$\frac{EXP}{GDP_{i,T}} = \beta_0 + \sum_{k=1}^l \beta_k VAT_{k,i,T} + \sum_{m=l+1}^n \beta_m Cyclical_{m,i,T} + \sum_{r=m+1}^s \beta_r Other_{r,i,T} + \mu_T + \varepsilon_{i,T} \quad (1)$$

where, $\frac{EXP}{HDP_{i,T}}$ are the final consumption expenditures of households by consumption of foodstuffs in relation to GDP, in % (*Consumption*), $VAT_{i,T}$ represents a set of tax variables, specifically the standard VAT rate in % (*Standard VAT rate*) and the reduced VAT rate on foodstuffs in % (*Reduced VAT rate*), $Cyclical_{i,T}$ represents a set of cyclical variables that affect final spending of households in the form of unemployment rate in % (*Unemployment*) and inflation rate in % (*Inflation*), $Other_{i,T}$ represent a set of other macroeconomic variables that affect development of final expenditures of households on foodstuffs, in the form of natural logarithm GDP per capita ($Ln(GDP\ per\ capita)$), GDP growth rate in the state compared to other EU-28 states in % (*GDP Relative*) and the existence of the crisis recorded in 2008 - 2011 in the form of a binary variable (*Factor (Crisis)*). Furthermore, β represents individual regression coefficients, μ_T are annual effects, $\varepsilon_{i,T}$ represents a random independent error, states are labeled with *i* index, and the time is labelled with *T* index.

The dataset consists of the member states of the European Union in the period from 2007 to 2017 obtained from Eurostat (2018). The output variable is examined through the mathematical and statistical methods in software R Studio Version No. 0.99.491 (RStudio Team, 2015) by using the packages *tseries*, *plm*, and *aTSA*.

Prior to modelling, the stationarity of time series data of explanatory variables based on the KPSS test and on the extended DF test over the period of time 2007 - 2017 is tested. The significance of the selected variables entering the models is verified by the Kaiser-Mayer-Olkin criterion.

Criteria values below significance level (0.5) are considered as insufficient and therefore are excluded from the models.

RESULTS AND DISCUSSION

VAT belongs to the group of taxes burdening consumption. Average income from excise taxes is at the level of 28.5% of total income tax (Eurostat, 2018). Some member states tend to maintain this income tax at the increased level (BG, HR, LV, EE, RO, HU, and CY above 40%), mainly due to the existence of low below the average pensions or lower tax ethics (BG, EE, HR, and HU).

In the EU-28 states, the standard VAT rate ranges from 17% (LU) to 27% (HU). The average rate is at the level of 21.5% and it seems like its level has not significantly changed in several EU states since 2014. The necessity for unifying VAT rates prefer and emphasise the new member states. The very number and the level of VAT rates themselves are extensive and it is difficult to create their clear comprehensive overview and comparison. Within the member states, average expenditures of households on foodstuffs and non-alcoholic beverages represent 12.2% out of total expenditures of households (Eurostat, 2018). The range of these expenditures varies between states from 8.2% in the UK to 27.8% in RO.

Taxing foodstuffs at reduced rates changes relative prices, leading consumers to buy relatively more foodstuffs and producers, including farmers, to choose food production over other lines of production (Cnossen, 2017). By qualitative research of tax legislation, we observe that foodstuffs are taxed in several member states by several rates. The reduced VAT rate for foodstuffs is applied between 2% and 18% (HU) in 2018. In addition to the reduced VAT rate on foodstuffs, we are experiencing super-reduced VAT rates (less than 5%) valid in IE (4.8%), ES (4%), FR (2.1%), IT (4%), and LU (3%). These states most often implement this rate in livestock and live horses - use in the preparation of foodstuffs. The exception is LU, which applies the reduced VAT rate on all foodstuffs. Some states use two tax rates not just one reduced VAT rate on foodstuffs applied in EC, LT, SK, HU, CY, FR, DE, SE, and the UK. Currently, three VAT rates on foodstuffs are applied in PL, BE, and PT. Reduced VAT rates can be divided into three categories according to their scope of application:

1) to “*all foodstuffs*” apply a reduced VAT rate mainly old member states (FI, SE, AT, RO, DE, LU, EL, IT, NL, and SI). In these states, their application is justified by social and production reasons. The reduced tax rate on foodstuffs (the minimum value for the state) reaches an average of 8.75% in 2017 in the cluster. Average final consumption expenditure of households on foodstuffs in relation to GDP reaches level of 6.99% of GDP.

2) to “*selected foodstuffs*” apply a reduced VAT rate mainly a group of new member states (BE, CZ, PL, SK, IE, HR, LV, HU, and PT). While deciding about the determination of foodstuffs, the impact of taxation on the most basic living needs in relation to the development of social conditions in the state is carefully considered. States apply a reduced rate only on selected foodstuffs, otherwise, they use a standard VAT rate on foodstuffs. Examples of special foodstuffs are essential baby smooth

puree in CZ (10%), in IE animals intended for food-producing (4.8%), bread, butter, milk in HR (5%). Application of established rates is justified by the necessity of ensuring a stable budget income in state. The reduced tax rate on foodstuffs (minimum value) reaches an average at the level of 6.31% in 2017. Average final consumption expenditure of households on foodstuffs in relation to GDP reaches level of 7.76% of GDP. Reduction of VAT on selected goods does not bring the promised effect probably due to unsuitable choice of foodstuffs with the reduced tax rate. Nationwide reduction of VAT on foodstuffs would increase consumption and significantly help not only the food producers but also the trade sector. An interesting approach to analyse the effect of introducing second reduced rate of VAT on consumer purchase behaviour with gluten-free food in the Czech Republic suggest Šálková, Kučera and Moravec (2017). Authors prove that the respondents' experience says, the introduction of the second reduced VAT rate of 10% has not significantly affected the prices for the final consumers. The reason for that may be the fact that the second reduced VAT rate applies mostly to ingredients used in gluten-free production and only a few final products.

3) DK, BG, EE, and LT do not apply reduced VAT rate to foodstuffs. The average VAT rate on foodstuff in 2017 reaches level of 21.5%. In the same time period, an average final consumption expenditure of households on foodstuffs in relation to GDP reaches level of 9.48% of GDP in these states.

The range of these expenditures varies from 8.2% in the UK to 27.8% in RO. In the observed time period, the change in the reduced VAT rate on foodstuffs, the standard VAT rate combined with the change in the final expenditures on foodstuffs of households in relation to GDP, has four possible situations:

1) No change in the reduced VAT rate on foodstuffs, nor the change in the standard VAT rate, and the final expenditures on foodstuffs of households show fluctuating trend: BE, BG, DK, DE, MT, AT, and SE.

2) No change in the reduced VAT rate on foodstuffs and the increase in the standard VAT rate in the combination with an increase of expenditures on foodstuffs of households: CZ, CY, EE, HU, NL, RO, FI, UK, and PT.

No change in the reduced VAT rate on foodstuffs and an increase in the standard VAT rate in the combination with a decline of expenditures on foodstuffs of households: IE, FR, and IT.

3) Increase of reduced VAT rate on foodstuffs, no change in standard VAT rate in the combination with an increase of expenditures on foodstuffs of households: EL.

4) Increase in both the reduced and standard VAT rate on foodstuffs in the combination with an increase of expenditures on foodstuffs of households: EE, EL, and LV.

Increase in both the reduced and standard VAT rate on foodstuffs in the combination with a decrease of expenditures on foodstuffs of households: CZ, LT, PT, SI.

The time period of implementation of changes in the standard VAT rates respectively changes in the level of reduced VAT rates can be divided into three phases. The most quantitative changes occurred between 2007 and 2010 when states implemented an increase in both tax rates. Since 2014, no significant changes have been observed in the development of rates. A decline in the

standard VAT rate was identified only for RO in 2015 when the state dropped it from 24% to 20% and consequently to 19% in 2017. A decline in the rate was accompanied by a decline in total expenditures on foodstuffs of households despite the fact that the level of the reduced VAT rate did not change. In all cases, the overall increase in the reduced VAT rate on foodstuffs is observed. Such a change, whether alone or in conjunction with an increase in the standard VAT rate, simultaneously leads to an increase in expenditures on foodstuffs of households.

Table 1 VAT rates on foodstuffs in the EU member states (in 2018, %).

State	Reduced Rate	Standard Rate
BE	6 12	21
BG	20	20
CZ	10 15	21
DK		25
DE	7	19
EE		20
IE	4.8 9 13.5	23
EL	13	24
ES	4 10	21
FR	2.1 5.5 10	20
HR	5 13	25
IT	4 5 10	22
CY	5	19
LV	5 12	21
LT		21
LU	3	17
HU	5 18	27
MT	0 5	18
NL	6	21
AT	10	20
PL	5 8	23
PT	6 13	23
RO	9	19
SI	9.5	22
SK	10	20
FI	14	24
SE	12	25
UK	0	20

Note: Source: Authors' elaboration based on Eurostat (2018).

Table 2 Changes identified in the development of VAT rates in the EU member states (in 2007 - 2018).

	2007 - 2009	2012 - 2014	2015 - 2018
	EE, LV, LT,		
Synchronously	CZ, EL, ES,		
Δ SR and Δ RR	PL	ES, SI	
	HU, HR, PT,	CZ, IE, FR, IT,	
	RO, SK, FI,	CY, HU, NL,	
Only Δ SR	UK	FI	EL, LU, RO
Only Δ RR		HR	FI

Note: SR – Standard VAT rate, RR – Reduced VAT Rate on foodstuffs. Source: Authors' elaboration based on Eurostat (2018).

The European Parliament (Næss-Schmidt, Mekonnen Ali and Nieto Arias, 2012) points out that individual legislative adjustments to VAT taxation should be gradually simplified and should prevent further increases in standard tax rates. Compared to incomes of households, reduced VAT rates on foodstuffs are becoming ineffective and they increase the burden of households in all states.

Bettendorf and Cnossen (2015) and Cnossen (2017) calculate the VAT burden distribution. Authors assume, that disposable income is usually taken as the denominator. Total consumer spending net of VAT is a better alternative because it varies less than income over the life cycle of the individual. Therefore, consumption expenditures are a more stable denominator than income is. The panel regression model is compiled from a set of explanatory variables that affect total expenditures on foodstuffs of households in relation to GDP within the EU-28 states. EL is omitted from the model due to the unavailability of the data. Regression is firstly realised by pooling model. Using the Hausman test, a fixed model with effects for states is selected. Based on the results, it can be stated that the variables chosen in the models are statistically significant determinants which can affect the level of final consumption (Table 3).

Models are based on the assumption that the price of the final goods and expenses intended for the purchase of these foodstuffs increases with the increase of taxes. The most important factor in this model has a direct impact on expenditures of households. The positive sign with the regression coefficient β within the *Standard VAT rate* confirms conclusion of the economic theory. With increasing levels of tax rates, growth of consumption is expected. In case of a perfectly competitive market, neoclassical economics assumes that the change in the level of tax rates burdening goods where demand is

relatively inelastic is influenced by change in prices that directly determine the behavior of consumers.

The results of *Reduced VAT rate* are in contrast with these assertions. Široký et al. (2016) based on the analytic-synthetic methods determine how are the changes between the rates of VAT in reference to the share of commodity consumption in Slovak and Czech Republic. Authors show a different situation in the Slovak and Czech Republic. In Slovakia, the amount of household expenditures on commodities taxed at the reduced VAT rate declined. Authors state that the impact of changes in VAT as a consumption tax is, in principle, differentiated.

Pestel and Sommer (2015) carry out microsimulations of several revenue-neutral policy scenarios. Authors simulate a step-wise increase of the standard VAT rate accompanied by a reduction in personal income taxes or social security contributions. A tax shift might be favourable with respect to employment as a consequence of lower marginal tax rates on labor income, implying higher incentives to take up work. Higher consumption taxes are often associated with lower tax progressivity and higher levels of inequality. However, employment increases from a tax shift may outweigh adverse distributional impacts. Authors demonstrate the negligible redistributive impact of the reduced VAT rate.

Incorporating cyclical factors such as rate of unemployment (*Unemployment*) and inflation rate (*Inflation*), the second model reaffirms that a low level of inflation rate may lead to the generation of additional incomes of households. In case of its growth, the positive value of the regression coefficient β determines an increase in expenditures on foodstuff of households. With the growth of unemployment rate, a decline in expenditures on foodstuffs of households occurs.

Table 3 Selected determinants of the final consumption of households on foodstuffs in relation to GDP.

Final consumption of individuals on foodstuffs in relation to GDP					
Independent variables	Model 1	Model 2	Model 3	Model 4	Model 5
<i>Standard VAT rate</i>	1.2738e-01 (3.571e-06) ***			1.0397e-01 2.602e-05) ***	0.103778 (2.423e-05) ***
<i>Reduced VAT rate</i>	-2.7758e-06 (0.806)			-2.8318e-06 (0.722712)	
<i>Unemployment</i>		-0.096426 (<2.2e-16) ***		-2.3619e-02 (0.091776) .	-0.027375 (0.037208) *
<i>Inflation</i>		0.030102 (0.02298) *		9.6480e-03 (0.465321)	
<i>Ln (GDP per capita)</i>			-6.519530 (<2.2e-16) ***	-6.8360e+00 (<2.2e-16) ***	-6.902335 (<2.2e-16) ***
<i>GDP Relative</i>			0.305297 (0.05165) .	3.3638e-01 (0.028170) *	0.326305 (0.032047) *
<i>Factor (Crisis)</i>			-0.270170 (4.14e-07) ***	-2.0747e-01 (0.001414) **	-0.187018 (0.001295) **
Number of observations	n = 27, T = 9, N = 243	n = 27, T = 9, N = 243	n = 27, T = 9, N = 243	n = 27, T = 9, N = 243	n = 27, T = 9, N = 243
p-value of F-statistic	2.1078e-05	1.8228e-15	8.5648e-14	<2.22e-16	<2.22e-16
R ²	0.095731	0.2718	0.52377	0.56402	0.56258
Adjusted R ²	-0.022584	0.17652	0.45893	0.49518	0.49831

Note: The table shows the values of the coefficients for the individual models and the p-values of the t-statistics in brackets. The significance of the model is indicated at the significance level of 0.001 '***', at the significance level of 0.01 '**' at the significance level of 0.05 '*' , at the significance level of 0.1 '.'. Source: Authors' elaboration in software RStudio [Version 0.99.491] based on Eurostat (2018).

Within the all EU Member States **Martinková and Bánociová (2016)** identify differences in reduced VAT rates, as well as in tax revenues and household expenditures. These differences are in the macroeconomic indicators of countries, but also in the economic policies of individual governments. In case the size of the corporate sector can be expressed by the size of the Ln (*GDP per capita*), then with the growth of this variable, we expect the growth of the corporate sector that influences the growth of the explained variable. Statistically significant determinant is a relative share of state's GDP in relation to total GDP of the EU-28 states sample in % (*Relative*).

The existence of a crisis (*Factor (Crisis)*) is associated with a decline in GDP growth, with a decline in production, and a decline in consumption of households. The regression coefficient β take the negative value. In case of crisis existence, a decline in expenditures of households on foodstuff is expected.

Summary models represent a connection of all significant determinants affecting the final expenditures on foodstuffs of households. As in previous models, the significance of the *Reduced VAT rate* variable has not been confirmed at the chosen significance level.

If it is unclear how the market will respond to changes in taxation, or more precisely to changes in the level of *Reduced VAT rate*, it is difficult to design an effective tax policy. Knowledge of the consequences of a small reduction of *Reduced VAT rate* can help states rationally decide on tax rates in the future. Based on the main objective of the paper, the assumptions of the established hypothesis were not confirmed. The lack of evidence that the *Reduced VAT rate* on foodstuffs really affects expenditures of households is the nature of using this tax rate subdued. It needs to be pointed out that any change is visible only if it has a certain minimum size (**Niesiołowska, 2013**).

The reasons for inadequate reduction of prices, respectively no expression of changes of rates in the development of expenditures of households may be several - there may occur only reductions in VAT rates for foodstuff of a certain type which is not reflected in the consumer basket; the change of the rate can be implemented only for low-priced foodstuffs which is not reflected in the total change in expenditures of households; within the implemented change of the rate may re-qualification of goods which are liable to rate occur. According to **Crossley et al. (2009)**, consumers are aware of a possible increase in the future when deciding about the implementation of reduced VAT rates, so they adapt their current consumption to that.

In a market economy, the government has a limited impact on prices. Sometimes VAT affects prices for consumers in ways that are not in accordance with tax authorities' intentions. Tax reductions are often used to help households' secure basic goods but do not guarantee low prices. Knowledge of the factors that influence range and timing of tax transferring is crucial for application an effective tax policy. If VAT is used to create justice, the government should avoid a temporary increase in tax rates due to necessity. In this case, it is important to use additional income tax revenues from higher tax rates to support households living in poverty than establishing

small reductions in tax rates which may not lead to lower prices.

The effect of reduced VAT rates on foodstuffs which should determine the final consumption of foodstuffs and on the behaviour of consumers can also be affected by the fact that in individual time periods establishing, respectively adjusting reduced VAT rates is not the only modification in fiscal policy and tax policy but may be affected by changes in standard VAT rates that have a significant impact on prices of foodstuffs.

CONCLUSION

The importance and the roles of value added tax are constantly increasing, which is supported not only by fair economic competition, achieving the neutrality, uniformity, simplicity, and efficiency of this tax but also by the fact that value-added tax itself represents one of the major sources of state budget revenues. At EU member states level, this tax is harmonized the most, despite that legislation of individual states, allow adjustments in the level of VAT rates. Based on the theoretical assumptions that reducing the level of taxation may lead to an increase in private consumption, EU governments are introducing reduced VAT rates on foodstuffs, trying to keep prices of foodstuffs and basic necessity products at the lowest possible level and with the highest availability for consumers. Changes in the levels of reduced VAT rates for foodstuffs follow different state strategies, either by introducing higher reduced VAT rates on all foodstuffs or by implementing several reduced VAT rates on different types of foodstuffs. Based on the empirical literature under review and the quantitative analysis carried out, the significant determinants of total expenditures on foodstuffs of households and factors that influence the behaviour of consumers are the standard VAT rate, unemployment rate, economic growth in the state, and GDP growth compared to other member states. As a significant determinant is the existence of a crisis period considered. The assumptions of the tested hypothesis that "Applying a reduced VAT rate on foodstuffs affects the change in expenditures of households" at the chosen level of significance have not been confirmed. This fact can be influenced by the fact that in individual periods of time insertion, respectively modification of reduced VAT rates is not the only adjustment in tax policy. In addition to the listed factors influencing the reduced VAT rate, consumption of households is affected by the set of macroeconomic variables and maturity of the economy in each state.

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