

# REDISTRIBUTIVE EFFECTS OF VALUE ADDED TAX IN POLAND

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## **Abstract**

The aim of the article is to define the redistributive effects of taxing the consumption of Polish households with Value Added Tax in the years 1995-2016. In this article, an attempt of statistical assessment of trends and the scale of effects of VAT taxation on individual consumption as well as to determine the nature of the Polish VAT (its regressiveness, progressiveness, or linearity) has been taken.

The study of Polish households' burden with VAT has been divided into two major stages. The first one focused on determining, based on a detailed list of household expenses, the amount of VAT paid in the expenses of particular types of households. In the second stage, VAT burden was estimated by referring the amount of VAT paid to the net income of a given type of household. Net incomes are all values that enter the household, without advances on income tax from natural persons paid by the payer on behalf of the taxpayer, and without social security contributions.

The research was based on unpublished GUS data from the Household Budgets Surveys (1995-2016) according to decile income groups. In the methodological layer, emphasis was put on the issue of differentiating rates of consumption taxes.

**Key words:** VAT, consumption, households, regressive taxation

**JEL Code:** D12, D31

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## **Introduction**

The primary disadvantage of consumption taxes from the social point of view is their unfairness. These levies are not closely related to income and material status of the taxpayer. As a result of tax shifting, taxpayers with a high share of consumption and low income are relatively more burdened than those with a low share of consumption and high income. The above phenomenon is identified with violation of the principle of payment capacity as well as

with the regressive nature of these taxes. The regressive nature of indirect taxes means that, from the point of view of social policy, it is a significant matter in what proportions the state budget is supplied from direct and indirect taxes. The possibility of shifting indirect tax hinders assessment of the actual tax burden of different entities and pursuing a redistributive policy planned by the state and accepted by citizens.

In the literature on optimal consumption taxes, two trends are clearly observable. The first one postulates substitution of differential indirect taxes with a uniform tax rate and possibly broad base. The uniform tax rate has its administrative advantages and above all promotes economic efficiency. On the other hand, there exists rich literature concerning optimal taxation of goods stating that it is optimal to vary tax rates as certain level of tax revenue allows to minimize social costs of taxation. In the light of the theory of optimal taxation, the question of varying rates of consumption taxes is not clearly settled. It should be noted, however, that theories of optimal taxes can be recognized as abstract since they fail to describe reality nor take into account institutional, political, social and cultural conditions. In practice, it is impossible to reflect the conclusions of the theory of optimal taxation in the structure of VAT rates (compare Economides, Rizos, 2018; Aldred, J, 2012; Gordon, R, 2011).

The studies conducted in the field of VAT also show that varying VAT rates is not an effective redistributive instrument, moreover, it increases the costs of functioning and monitoring of the tax system and may lead to inefficiency of the consumption structure. On the other hand, VAT exemptions may cause inefficiency of the production structure, while in industries covered by exemption competitiveness in the international context may be reduced. VAT exemptions for practical reasons find justification in subjective exemptions for small companies (compare Clark, Dilnot, Goodman, Myck, 2002; Economides, Rizos, 2018; Aldred, J, 2012; Gordon, R, 2011).

It is commonly recognized that indirect taxes are of regressive character (see studies by: Ebrahimi, Heady, 1988; Dobrowolska, 2008), because they most heavily burden the poorest taxpayers who spend almost entire income on consumption. The source of regression is usually the regressive burden of income with expenditure on purchase of necessity goods and services, and thus also indirect taxes on these goods.

Application of uniform rates (such at least are recommended by the European Union and enforced by the functioning of nowadays almost universally applied VAT), non-intrusive for the structure of consumption, with certain exceptions for greater justice referring to goods

satisfying necessity needs and - mainly through the excise duty mechanism - luxury goods, is an attempt to reconcile social justice and economic efficiency of indirect taxes.

It is assumed that since it is difficult to reconcile economic rationality with social justice in the case of indirect taxes, the assessment of the tax system as a whole according to the criterion of fair distribution of tax burdens should concern, among others, the structure of this system and the proportions of direct and indirect taxes. And this very issue should indicate the boundary of the postulated increase in the share of indirect taxes and determine the proportions of both tax groups in the whole system. Monitoring the distribution of indirect tax burdens of specific types of households can provide extremely useful knowledge about the possibilities of varying or harmonizing tax rates.

The assessment of the redistributive consequences of VAT implementation in Poland has been the object of research since the introduction of this tax, i.e. since 1993. The first such studies were carried out in the years 1992-1993 as part of the Integrated Tax and Transfer Research Group<sup>1</sup>, when analyzing the share of tax in the disposable income of households, depending on their income, size and socio-economic status. All subsequent attempts to study the redistributive effects of taxation on consumption have modified and improved this methodological pattern (e.g. Bolkowiak, Kuzińska, Majewicz, Maliszewski, Neneman, 1996 and 2003; Famulska, Znaniecka, 2003; Bargain, Morawski, Myck and Socha, 2007; Dobrowolska, 2008).

Often, however, the studies on the problem of determining the redistributive effects of consumption taxes were either fragmentary or were based on aggregate data, thus not allowing a detailed estimation of redistributive effects, or were not directly comparable in the long term due to different methodological assumptions.

The study of VAT burden of Polish households presented in this article was conducted over the long time period (for the years 1995-2016), based on a modified and improved research methodology, which is described in detail in the work of B. Dobrowolska (Dobrowolska 2008). The main source of information was the unpublished and highly detailed GUS (Central Statistical Office) data from household budget surveys. These data are collected by GUS annually in an identical or similar way, which facilitates conducting systematic research. This also provides the opportunity to verify whether the observed

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<sup>1</sup> The research group consisted of scientists from the University of Lodz and Justus Liebig University in Gießen and representatives of the University of Naples, the Institute of Finance and the Institute of Labour and Social Studies in Poland.

correlations are permanent. The study of the redistributive effects of VAT functioning was conducted for households classified according to decile income groups<sup>2</sup>.

## 1 Methodology of studying VAT burden on household consumption

Various test methods are used to assess the redistributive properties of the tax system. The most commonly used methodology in the subject literature is observing the relative tax burden in subsequent income groups. The percentage share of tax in income or expenditure in individual income groups allows to determine its character. If the tax share in income (expenditure) decreases with the increase of income (expenditure), then the tax has regressive character, if the share is fixed, the tax is proportional (linear), if the tax share in income increases with increase of income, the tax is progressive. This classification is based on the average tax rate.

The main source of information was the unpublished Central Statistical Office data from household budget surveys for the years 1995-2016. These data were very detailed<sup>3</sup>, which enabled a fairly accurate estimation of the amount of VAT paid by households.

The study was divided into two main stages. The first one included estimating the amount of VAT paid for each type of household. In the second stage, the amount of **VAT burden** of individual types of households was estimated by referring the amount of VAT paid to the net income of a given type of household<sup>4</sup>. Due to the purpose of the study, which is to determine the distribution of household burdens with VAT and to indicate which types of households are most heavily burdened, it was considered that most appropriate would be the measurement of the ratio of indirect taxes paid to the net income. The net income category includes every component of the actual income at the disposal of the household, in contrast to gross income which includes income that is not directly at the disposal of the household, i.e. income taxes or social insurance contributions which do not increase consumption capacity.

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<sup>2</sup> Decile groups are obtained by dividing households into 10 sets ranked by increasing income per person in a household.

<sup>3</sup> Data are aggregated on at least 6th level (subcategory) of the Polish Classification of Products and Services.

<sup>4</sup> Net income are all values flowing into the household, without advance payments for personal income tax paid on behalf of the taxpayer, as well as without social insurance contributions. Net income consists of disposable income and savings on the income side.

The study of households' burden with VAT takes into account: the standard rate (22% in force until 2010 and 23% introduced since 2011), preferential rates: 0, 2, 3, 4, 5, 7, 8, 12 and 17 (%), i.e. all preferential rates that were applied in Poland in 1995 - 2016.

Another issue that needs to be considered is the method of estimating burdens with consumption taxes on goods and services that are exempt from tax in the last phase of turnover. The exemption from VAT does not mean that a given good or service is not taxed. The goods and services exempt from VAT included in their price taxes of various rates, paid by the final consumer. If the exemption concerns the last phase of turnover, the consumer also pays the tax on goods and services, though not the full amount resulting from the applicable tax rates. It is not possible to correctly estimate tax in goods exempt from it or in goods for production of which tax-exempt goods were used. In these circumstances, there are two solutions: it is either assumed that tax-free goods and services do not include any tax or tax-free goods and services are taxed with a single tax rate, which, if imposed on the whole consumption, would bring tax revenue equal to the income from the current taxation system. For this study, the first of these assumptions was adopted.

The analysis of the VAT burden of Polish households was carried out for the years 1995-2016 by types of households classified according to decile income groups. This approach allowed to determine the nature of the Polish VAT tax<sup>5</sup>.

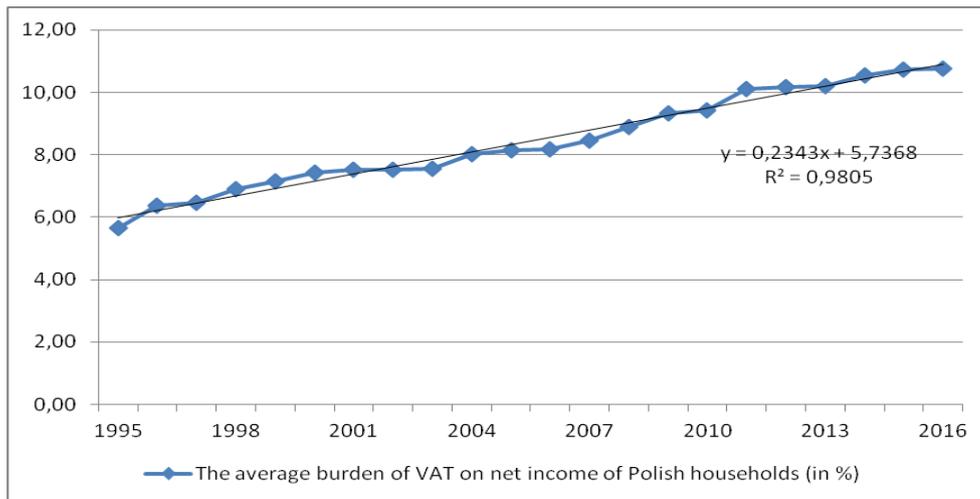
## **2 Redistributive effects of VAT in Poland - empirical research results**

The results presented in Figure 1 indicate that the average burden of value added tax for households in Poland in the years 1995-2016 increased by 90%. In 1995, the average VAT burden was 5.65%, and in 2016 it was 10.75%. In the years 1995-2016, the average VAT burden of Polish households increased on average by 3.11% annually.

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<sup>5</sup> We assume that the structure of the society in relation to the distribution of income presented in *Households' Budgets* applied in the author's research corresponds to the actual structure of the society and thus the research results apply to the entire society.

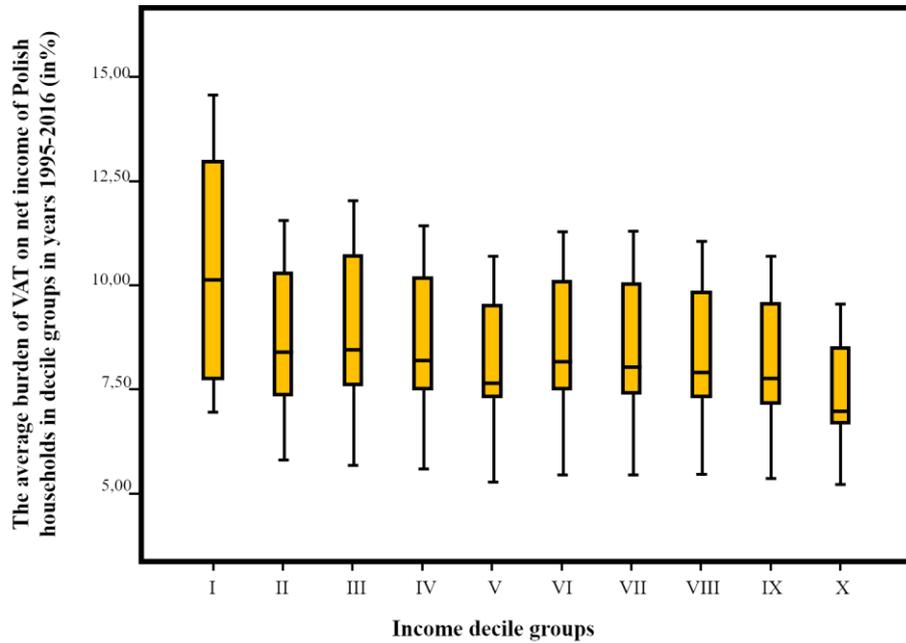
**Fig. 1: The average burden of VAT of Polish households in the years 1995 – 2016**



Source: calculated by the author based on unpublished GUS data derived from the Household budget surveys 1995-2016.

The structure of VAT burden in Poland depends to a large extent on the wealth of the household. The Polish VAT tax is regressive. As the data from Figure 2 show, the largest differences in the average VAT burden are related to extreme decile groups, i.e. the richest (10<sup>th</sup> group) and the poorest ones (1<sup>st</sup> group). In the years 1995-2016, the average VAT burden decreased from 10.19% in the 1st decile group to 7.31% in the 10th decile group.

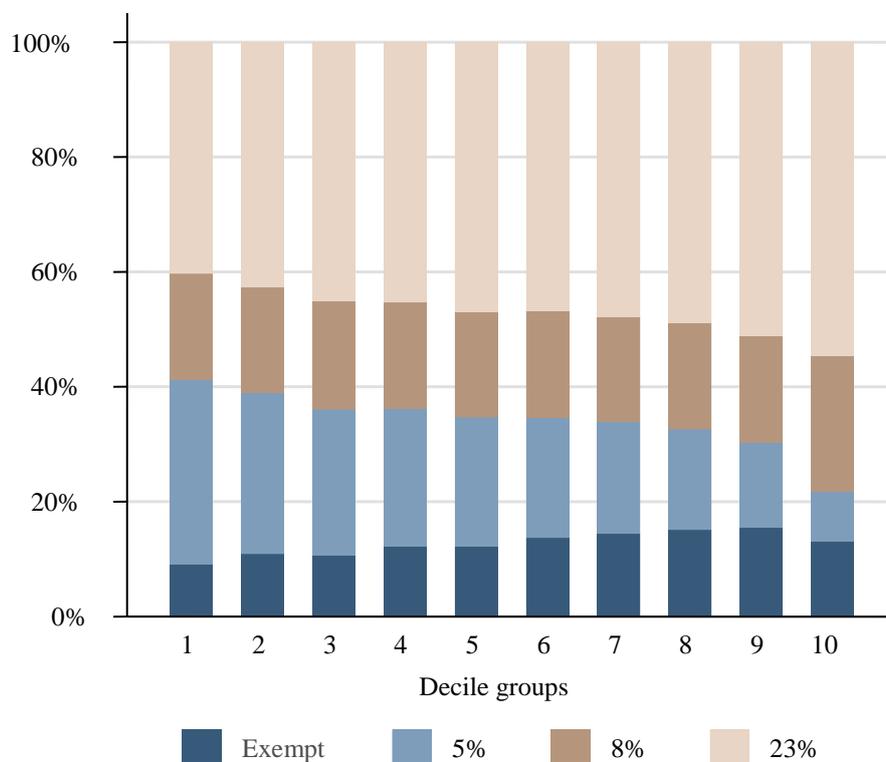
**Fig. 2: Box-whisker of the average burden of VAT of Polish households by decile income groups in the years 1995-2016 (in %)**



Source: calculated by the author based on unpublished GUS data derived from the Household Budget surveys 1995-2016.

The degree of variation of VAT burden in the years 1995-2016 within individual decile groups was small. Relative variation measured by the variation coefficient did not exceed 10%.

**Fig. 3: The structure of VAT burden of Polish households by tax rates in decile groups in 2017 (in%)**



Source: Myck M., Najsztab M., Stopień regresywności podatku VAT w Polsce, Warsztaty Naukowe CASE, Warszawa 26-27/03/2018.

The regressive course of VAT burden was determined by the regression force of households' burden with preferential rates, which was in turn influenced by the proportions between the standard rate and preferential rates burden. The figure 3 shows that expenses taxed preferentially, i.e. exempt from tax or subject to preferential rates (5% or 8%) dominate the structure of expenditures of Polish households from the 1<sup>st</sup> to the 8<sup>th</sup> decile group. The preferential tax rates relate to standard goods and services. The richest groups of households in Poland, i.e. the 9<sup>th</sup> and 10<sup>th</sup> decile groups, spent over half of their expenditure in 2017 on purchase of standard-rated goods and services.

## Conclusion

The analysis conducted has shown that in the years 1995-2016 the average burden of the value added tax of households in Poland increased by 90%. In 1995, the average VAT burden was 5.65%, and in 2016 it was already as much as 10.75%. In the years 1995-2016, the

average VAT burden of Polish households increased on average by 3.11% annually. The research conducted also indicates that the effects of VAT in Poland are unevenly carried by various social groups and the structure of VAT burden depends to a large extent on the wealth of households. The Polish VAT in the years 1995-2016 was regressive and therefore it most burdened consumption of households with the lowest income.

The basic disadvantage of consumption taxes from the social point of view is their unfairness. These levies are not closely related with the income situation and material status of the taxpayer. As a result of tax shifting, taxpayers with a high share of consumption and low income are relatively more burdened than those with a low share of consumption and high income. The regressive nature of indirect taxes means that from the point of view of social policy it is not indifferent in what proportions the state budget is supplied from direct and indirect taxes.

The course of VAT burden of households in Poland in 1995-2016 seems to be the result of the choice of tax policy aimed at increasing the burden of indirect taxes, instead of an informed social policy. Indirect taxes are primarily a very efficient source of budget incomes and, above all, they perform fiscal functions. However, it would be deeply irrational and harmful to analyze the tax system economically, without properly considering the social context of the state taxation activity. As a consequence, it is widely recognized that it is necessary to constantly monitor the distribution of burdens with this tax of particular types of households, which allows not only to control the social effects of VAT but can provide extremely useful knowledge about the possibilities of varying or harmonizing tax rates.

The issue of determining the size and degree of variation of consumption tax rates in Poland, as well as in other European Union countries, is problematic. This is due to the high share of these taxes in state budgets revenues and their high impact (primarily VAT) on competitiveness of a given country since in economies with high fiscal burdens the outflow of investment may increase in comparison to those countries where tax burdens are small.

## References

- Aldred, J. (2012) Tax by Design: The Mirrlees Review (OUP, 2011). *New Political Economy*, 17(2), 231-238. <https://doi.org/10.1080/13563467.2011.608122>
- Bolkowiak, I., Kuzińska, H., Majewicz, M., Maliszewski, C., Neneman, J. (1996), *Obciążenia podatkowe przychodów gospodarstw domowych*, Instytut Finansów, Warszawa

- Bolkowiak I., Kuzińska H., Majewicz M. (2003), *Obciążenia podatkowe przychodów gospodarstw domowych w latach 1994-1999*, Zeszyty Naukowe Instytutu Badań Społecznych i Międzynarodowych Fundacji im. Kazimierza Kelles-Krauza nr 8, Warsaw
- Clark, T. , Dilnot, A., Goodman, A., Myck, M. (2002) Taxes and transfers 1997-2001, *Oxford review of economic policy* 18(2), 187-201. [https://doi.org/ 10.1093/oxrep/18.2.187](https://doi.org/10.1093/oxrep/18.2.187)
- Dobrowolska, B. (2008), *Ekonomiczne konsekwencje opodatkowania konsumpcji indywidualnej w procesie integracji z Unią Europejską*, doctoral dissertation in the Department of Economic and Social Statistics, University of Lodz, Poland
- Ebrahimi, A., & Heady, C. (1988). Tax Design and Household Composition. *The Economic Journal*, 98(390), 83. doi:10.2307/2233306
- Economides, G., Rizos, A. (2018) Optimal Taxation and the Tradeoff Between Efficiency and Redistribution. *Review Of Economic Analysis*, 10 (1), 1-43  
[http://rofea.org/index.php?journal=journal&page=article&op=view&path\[\]=367](http://rofea.org/index.php?journal=journal&page=article&op=view&path[]=367)
- Famulska, T. (2003). *Obciążenia fiskalne w Polsce na podstawie badań: Praca zbiorowa*, Wyd. Uczelniane Akad. Ekonomicznej im. Karola Adamieckiego w Katowicach, Katowice.
- Gordon, R. (2011) Commentary on Tax by Design: The Mirrlees Review. *Fiscal Studies*, 32(3), 395-414 <https://doi.org/10.1111/j.1475-5890.2011.00143.x>
- Household Budget Surveys*, GUS, Warsaw, years: 1995-2016  
<https://stat.gov.pl/en/topics/living-conditions/living-conditions/household-budget-survey-in-2016,2,11.html>
- Myck M., Najsztub M., *Stopień regresywności podatku VAT w Polsce*, CASE Scientific Workshops, Warsaw, 26-27/03/2018.

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