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## The Issue of VAT Gap in Poland in Contrast to the European Union Member States as a Threat to Financial Security of the State

**Abstract:** According to the European Commission's estimates Poland had one of the highest VAT gap among the EU countries in 2014, which amounted to PLN 40bn, i.e. 31.7% of actual collected VAT revenue, and the VAT gap in Poland increased in contrast to 2010 data (by almost 1/4). These estimates are in line with the deceleration of the VAT revenue growth in Poland since 2008 (in contrast to nominal GDP growth) and moderate Pearson's correlation coefficient for the dependency between nominal GDP changes and nominal VAT revenue changes in Poland in the years 2003-2016 (chain base indices;  $r=0.47$ ). The VAT gap is definitely higher in CEE11 countries than in EU15 – this is confirmed by all central tendency measures.

The problem with tax collection effectiveness in the most EU countries is further complicated by the threats that are connected with the constant changes introduced to tighten up the tax system as they create additional uncertainty and complicate the situation in already complicated business environment.

**Key words:** VAT gap, tax revenue, general government budget, financial security of the state, preferential tax treatment, tax avoidance, tax evasion.

**JEL:** H26, H25, H68, F36, F52, K34

### Methods

Although tax avoidance and tax evasion problems are as old as taxes, a significant increase of tax gaps in the recent years shed a new light on those phenomenons. This is especially relevant in the case of EU member states

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that, after the crisis of 2008, had higher taxes and public debt which makes their economic policy less flexible and limits their effectiveness in stimulating economy, thus increases vulnerability to shocks and weakens resistance to those. That is why the growing VAT gap problem in the EU countries is a relatively new phenomenon, thus there is not much research studies on it. This article is an attempt to fill this gap: to raise the awareness of the growing problem with tax collection in Poland and related risks. The major objectives of the research are:

- 1) to describe the problem of the growing VAT gap in the EU countries and identify its main drivers;
- 2) to identify the magnitude of this phenomenon in Poland in comparison with EU countries;
- 3) to verify the only existing VAT gap estimations made by the European Commission;
- 4) and to identify the related risks for economic development and effectiveness of economic policy.

In order to do that, methods of content analysis and quantitative analysis (descriptive statistics) were used. On the basis of that and with the use of inductive reasoning, an attempt was made at identifying threats related to VAT gap and ways of overcoming this issue for functioning of public finances and stability of economic growth in Poland.

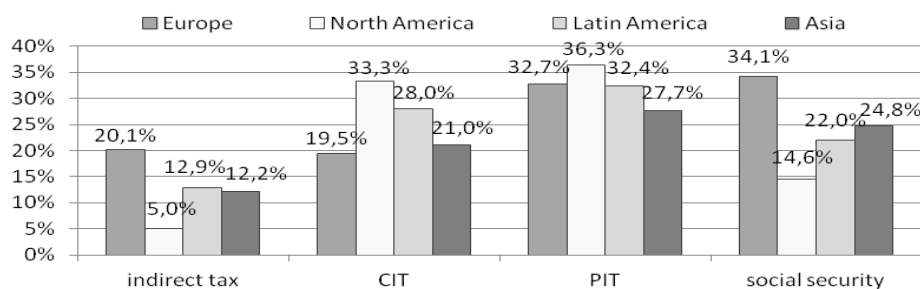
To fulfill the objectives of the research the following were performed:

- 1) the comparison analysis of the level of GDP and the level of VAT revenue (and other central taxes revenue, i.e. CIT, PIT and excise) in Poland in the years 2003-2016 (with the use of bivariate correlation analysis);
- 2) the comparison analysis of the nominal GDP changes and nominal tax revenue changes in Poland in the years 2003-2016 (chain base indices; with the use of bivariate correlation analysis);
- 3) the comparison analysis of the VAT gap level in the EU countries (comparison with other countries and in relation to 2010 data);
- 4) the comparison analysis of the average level of VAT gap in 2010 and 2014 in EU, EU15 and CEE11 countries (with the use of measures of central tendency);
- 5) the comparison analysis of the VAT gap estimates of European Commission, own results and OECD's VRR indicator.

## Introduction

The processes of globalization and internationalization of businesses contributed to popularization of the tax optimization phenomenon [see, e.g., Wyciślik 2013]. Once available and profitable, solutions for major international companies are nowadays used at a much bigger scale by significantly smaller businesses. It is, on one hand, forced by international competition and, on the other, by especially high public levies in Europe and it is also provoked by complex and diverse legal systems. Plurality and the pace at which new solutions and consulting institutions are appearing are also an important factor. Tax planning is currently a standard tool used to manage business finance [Jamroży, Kudert 2013] and is used not only to improve net profitability but also financial liquidity [Ballion 2014]. It could have been expected that also businesses from Central and Eastern Europe, after the period of finding themselves on the single European market, will be more and more actively striving to improve their competitive position, especially that the majority of them belong to some of the most open economies not only within the EU (with the highest relations of export and import to GDP), and those entrepreneurs whose moves cross-border achieve the highest benefits from tax optimization [Kudert, Klipstein, Jamroży 2009, Jamroży 2014]. They are, without a doubt, also attracted by high tax rates in Europe (fig. 1).

**Figure 1. The average indirect tax rates, corporate tax rates, individual income tax rates and social security rates by world region (2017)**



\* the order of bars in the graph corresponds to the order of regions in the legend

Source: self-reported data on the basis of KPMG data.

From a standpoint of this overview, VAT rates are crucial as European rates are one of the highest on the global scale. The differences in the amount of

different public levies are worth noting here, as they explain the tendency for tax optimization in Europe as well as social acceptance of this phenomenon.

It is also worth noting that, due to the crisis of 2008, the differences in VAT rates in Europe have decreased, with VAT being the main source of budget revenue. The group of countries with VAT of less than 20% was decreased and now consists of Luxembourg, Malta, Cyprus, Germany and Romania even though previously the majority of the EU member states had VAT of a dozen or so percent (besides the above mentioned 5 countries, also Czech Republic, Estonia, Latvia, Lithuania, Slovakia, Netherlands, France, Spain, Greece and United Kingdom). This means that Poland has for many years been one of the countries with the highest VAT in Europe. Even Hungary which has had the highest VAT of 27% since 2012, VAT has been the one of 20% until 2009 (tab. 1).

It must be noted that the standard VAT rate in Poland is higher than both EU unweighted average VAT rate by 1.5 percentage point (21.5%, tab. 1) and OECD unweighted average VAT rate (19.2% in 2016) by almost 4.0 percentage point.

**Table 1. VAT rates in the EU countries (% , January 2017)**

	<b>Standard rate</b>	<b>Preferential rates</b>
Bulgaria	20	9; 0
Croatia	25	13; 5; 0
Czech Republic	21	15; 10; 0
Estonia	20	9; 0
Lithuania	21	9; 5; 0
Latvia	21	12; 0
Poland	23	5; 8; 0
Romania	19	9; 5; 0
Slovakia	20	10; 0
Slovenia	22	9.5; 0
Hungary	27	18; 5; 0
Cyprus	19	9; 5
Malta	18	7; 5; 0
Austria	20	13; 10; 0
Belgium	21	12; 6; 0
Denmark	25	0

Finland	24	14; 10; 0
France	20	10; 5.5; 2.1; 0
Greece	24	13; 6; 0
Spain	21	4; 10; 0
Netherlands	21	6; 0
Ireland	23	13.5; 9; 4.8; 0
Luxembourg	17	14; 8; 3; 0
Germany	19	7; 0
Portugal	23	13; 6; 0
Sweden	25	12; 6; 0
United Kingdom	20	5; 0
Italy	22	10; 5; 4; 0
UE 28; unweighted average	21.5	
S(x); in percentage point	2.4	
M	21.0	
Q1	20.0	
Q3	23.0	

Source: self-reported data on the basis of Avalara VAT live data.

The number and differences in preferential rates of VAT in different EU member states are worth noting which gives the view of different tax solutions in Europe encouraging tax optimization<sup>2</sup>. It should not come as surprise that in the context of an economy with one of the lowest GDP per capita and one of the highest VAT rates, the tendency for tax optimization and abuse in this area will be strong (Poland in 2016 ranked as 7th from the bottom among EU28 in the context of GDP per capita in PPS). It is also a significant fact that among 7 countries with the lowest GDP per capita (respectively: Bulgaria, Romania, Croatia, Latvia, Hungary, Greece and Poland; 2016), four countries with the lowest GDP per capita are on the list of 7 with the highest basic VAT rate in the EU (i.e. is greater than or equal to Q3 – tab. 2); what is more, six is among the ten EU member states with the highest VAT gap. (fig. 6). Poland ranks as number 7.

<sup>2</sup> Denmark has the simplest VAT collection method, where there is only one preferential rate: zero, which is additionally used in the context of newspapers (published more often than monthly) and international and intra-EU transport.



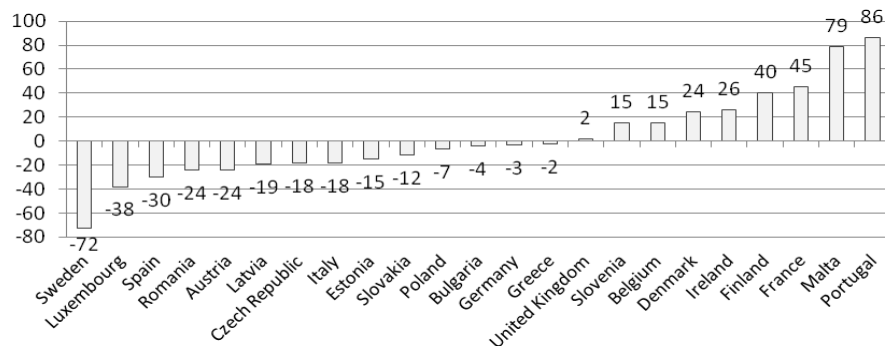
It is also worth noting that Polish entrepreneurs, for over a decade, have had propitious legal environment. Apart from the highest number of agreements for the avoidance of double taxation (93 according to data from June 2017), the key role in the process of tax optimization was transposition of EU tax directives into the Polish legal system after entering the EU in 2004 which opened the door to many interesting solutions. These are additionally encouraged by the existing Polish institution of individual interpretation of tax law which allows to obtain the office of the National Tax Service *ex ante* (*Krajowa Informacja Podatkowa*, previously the Ministry of Finance) in the desired scope and it also plays an important protective role in the context of tax optimization. Of course, there are legislative changes being implemented to limit the phenomenon of tax avoidance which prevent application of new solutions which do not eliminate the point of tax optimization, rather set new acceptable limits [Ożóg, Tomczykowski 2014].

### The VAT gap

The VAT gap is defined as the difference between the amount of actually collected VAT revenue and the VAT Total Tax Liability (VTTL), i.e. the theoretical tax liability according to tax law. VAT gap concerns mainly not registered activity either by statistical offices or by the tax administration, what makes difficult to estimate the size of the phenomenon. Heterogeneous data sources, various calculation methods for particular components of VAT gap estimations based on a number of simplifying assumptions, make impossible to determine the measurement error [Poniatowski 2016].

It must be noted, that the transmission of Eurostat national accounts from the ESA95 to the ESA10 and new information obtained every year from member countries have led to substantial data revision in 2013 for some of them (fig. 2). It caused extremely high increase in VAT gap estimates for Lithuania (from EUR 158m to EUR 1642m, i.e. by 939%), Hungary (from EUR 293m to EUR 2595m, i.e. by 786%) and Netherlands (from EUR 1852m to EUR 5307m, i.e. by 187%).

**Figure 2. The difference in the estimate of the VAT gap in the EU\* countries for 2013 due the transmission of Eurostat national accounts from the ESA95 to the ESA10 and annual data revision (%)**



\* the chart does not include Lithuania, Hungary, Netherlands (to not flatten the chart) and Croatia, Cyprus (no data)

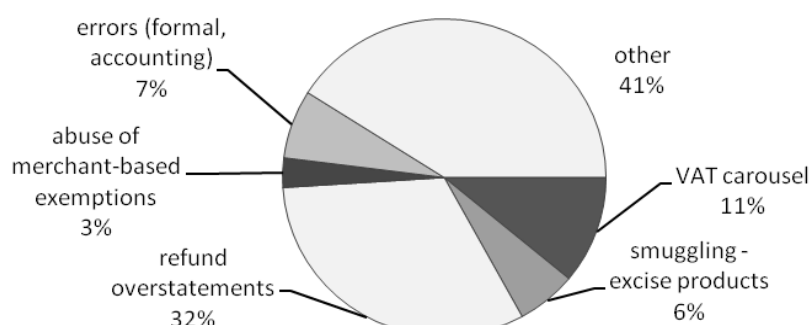
Source: self-reported data on the basis of European Commission 2016a.

The following are the main drivers of VAT gap in Poland:

1. Criminal activity and fraud – consisting mainly of business liquidation for the purpose of VAT avoidance through the final buyer (missing trader intra community – MTIC). In order to impede identification, an intra-community purchase operation is performed (zero VAT rate) and a few other transactions with multiple entities participating in those. Smuggling of objects subject to excise duty (tobacco products, spirits and diesel fuel).
2. Tax evasion which is a criminal act of not registering income or overstatement of costs by issuing fictional invoices. This activity is against the law as it is treated as fraud of misinforming the tax authority and, consequently, illegal elimination or reduction of the tax burden.
3. Tax avoidance, which is activities within the scope of tax regulations which enable the use of legal regulations to minimize tax burdens or spread them over time (the so-called tax optimization),
4. Errors and omissions, which are the result of lack of knowledge or due diligence and also complicated regulations; these actions do not have a purposeful character.
5. Natural bankruptcies causing discontinuation of tax payment [Poniatowski 2016].

In accordance with the analysis conducted by Poniowski 2016, almost 1/3 of the VAT gap in Poland (32% in 2013) is a direct consequence of the overstatement of the VAT return which confirms the commonness of this phenomenon (with relatively low unit value). Carousel frauds are responsible for around 11% of the VAT gap, and around 6% of lost revenue from VAT might be assigned to transactions in the context of excise goods (fig. 3). A relatively high percentage of lost budget revenue due to errors (7%) is also worth noting.

**Figure 3. Breakdown of the VAT gap in Poland (%; 2013)**



Source: Poniowski 2016.

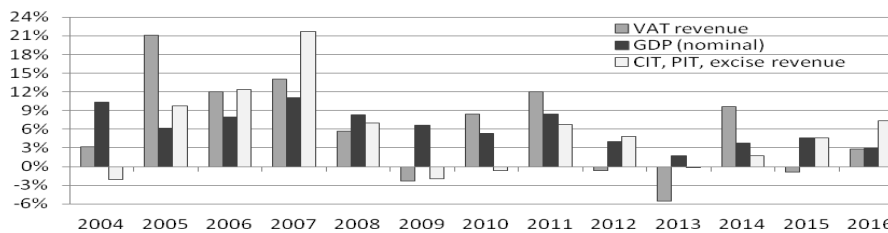
The above estimates consider only 59% of the VAT gap in Poland (PLN 42.5bn in 2013). The remaining 41% of the VAT gap is generated by other practices of shadow economy (for example unregistered economic activity and micro-enterprises' reductions of revenues) or genuine bankruptcy. These were, however, impossible to estimate.

An exceptionally strong increase of the VAT gap due to overstatement of the VAT return within the last few years is worth noticing: 253% in the years 2009–2013 (whereas other components of the VAT gap had an increase of 20–60%) [Poniowski 2016]. It is consistent with the current account deficit decrease in the Polish balance of payments (and the presence of surplus in the trade balance of 2015 and 2016) [see Redo, Siemiątkowski 2017].

The issue of the increasing VAT gap is also visible in the context of the VAT revenue decrease since 2012 – fig. 4, and to be specific in its nominal decrease in 2012, 2013 and 2015 (in contrast to the previous year) despite a few percent of GDP's nominal growth. It must be noted that nominal VAT revenue in

Poland in the years 2005-2007 and 2010-2011 increased more than nominal GDP (fig. 4).

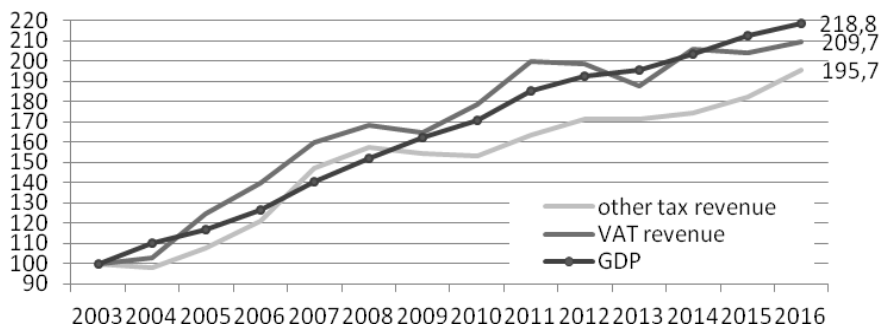
**Figure 4. Annual changes in VAT revenue, other central taxes revenue (i.e. CIT, PIT and excise) and nominal GDP in Poland in the years 2004–2016 (%)**



Source: self-reported data on the basis of Ministerstwo Finansów 2003–2016 and GUS 2017.

The growing issue of tax collection after the crisis of 2008 is well reflected in fig. 5 which presents deceleration of the VAT revenue already in 2008. What is interesting, after a recovery period in the years 2010–2011, they have stopped increasing since 2012.

**Figure 5. Nominal changes in VAT revenues, other central taxes revenue (i.e. CIT, PIT and excise) and nominal GDP in Poland in the years 2003–2016 (2003=100)**



Source: self-reported data on the basis of Ministerstwo Finansów 2003–2016 and GUS 2017.

Although reasons for this particular situation are difficult to identify, it might be concluded that it is connected with greater tolerance of international opinion towards actions that are to alleviate the crisis; this greater tolerance might be a result of lack of conventional tools for economy stimulation and the need to use radical solutions, for example reduction of interest rates to a historically low level and quantitative easing (QE) with the simultaneous

significant increase of public debt. Apparently, enterprises also took great measures to rationalize and improve their resistance to global downturn after the crisis which has been intensified in Europe by the escalation of fiscal crisis and Greece's bankruptcy.

Unfortunately, the issue in Poland does not only include the deceleration of VAT revenue, which is the increase of the so-called VAT gap. As diagram 5 indicates, the growth of other tax revenue into the state budget has decreased greatly (excise, PIT and CIT) in comparison to the nominal GDP growth rate. Hence, the CIT gap has been more and more discussed recently. It is confirmed by the lowest Pearson's correlation coefficient (0.7963) for the dependency between the level of CIT revenue and the level of GDP in Poland in the years 2003-2016 (tab. 2), what indicates that the CIT gap increases even more than the VAT one.

**Table 2. Pearson's correlation coefficient for the dependency between the level of GDP and the level of tax revenue in Poland in the years 2003-2016 and for the dependency between nominal GDP changes and nominal tax revenue changes in Poland in the years 2003-2016 (chain base indices)**

	Dependency between the level of GDP and the level of tax revenue	Dependency between nominal GDP changes and nominal tax revenue changes (chain base indices)
budget revenue	0.9557	0.5442
tax revenue	0.9753	0.5020
VAT revenue	0.9692	0.4714
CIT revenue	0.7963	0.4510
PIT revenue	0.9506	0.1263
excise revenue	0.9907	0.7728

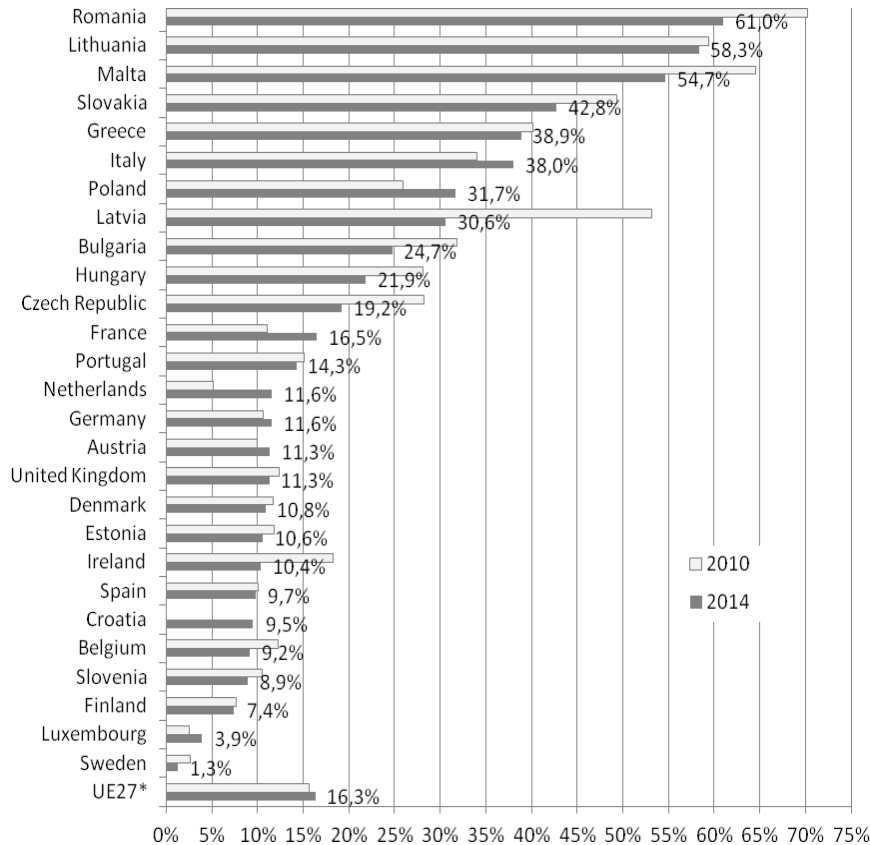
Source: own calculations.

## The VAT gap in the European Union countries

The issue of VAT gap does not only concern Poland but almost all EU member states. The total VAT gap in the EU was estimated in 2014 at EUR 159.5bn<sup>3</sup>. It must be stressed that the scale of this phenomenon is diverse and that half of the EU member states have a significant difficulty with tax collection (fig. 6).

<sup>3</sup> In 2010 amounted to EUR 135bn.

**Figure 6. The VAT gap as a percentage of actually collected VAT revenue (% , 2014 and 2010)**



Source: self-reported data on the basis of European Commission 2016a.

Poland is among those countries. According to the European Commission's data, Romania had the highest VAT gap in 2014, which amounted to 61% of actual collected VAT revenue<sup>4</sup>. A slightly smaller gap was reported in Lithuania (58.3% of VAT revenue) and Malta (54.7%). The gap in Slovakia, Greece and Italy reached 40% of collected VAT revenue, whereas in Poland<sup>5</sup>

<sup>4</sup> The author's opinion is that there is greater value in presenting the amount of VAT gap in relations to the actual VAT revenue in a given country than to an estimate hypothetical amount of potential VAT revenue (VTTL) used in the analyses of EC or CASE (performed also for EC). This is also the view presented in this overview.

<sup>5</sup> Assuming that the VAT gap in Poland still amounts to around 32% of VAT revenue, it means that VAT revenue which amounted in 2016 to PLN 126.6bn could have been higher by

and Latvia of around 30%. The VAT gap in Bulgaria, Hungary, Czech Republic, France and Portugal is estimated at 14-25% of the VAT revenue.

As diagram 6 shows, other EU member states have less difficulty with VAT collection – the VAT gap in the next 14 countries does not exceed 12% of actual VAT revenue. Sweden and Luxembourg are two exceptions where the VAT gap is estimated at around 3-4% of the VAT revenue.

It is worth noting that the VAT gap in Poland (31.7% of VAT revenue in 2014) ranks as 7th among EU countries when it comes to the VAT gap size in relation to VAT revenue. It is also three times higher than in the half of the EU member states and two times higher than the EU's average for 2014 (16.3%; fig. 6).

The VAT gap in relation to VAT revenue was reduced in the years 2010-2014 in the majority of the EU member states (19 out of 26). Its increase was noted only in Netherlands (by 6.5 percentage points), Poland (by 5.7 percentage points), France (by 5.5 percentage points), Italy (by 4.0 percentage points), Luxembourg and Austria (by 1.4 percentage points) and Germany (by 0.9 percentage points) – fig. 6. It is worth noting that the increase of the VAT gap in Poland was at that time among the most significant ones, both nominally (as mentioned above by 5.7 percentage points) and relatively (by 22%) in the years 2010–2014.

It must be noted that the analysis of correlation between the standard VAT rate and the VAT gap size (in relations to VAT budget revenue) in 2014 reflected no relations between these two rates for both the entire EU (Cyprus excluded) and also individually for countries of EU15 and Central and Eastern Europe. The Pearson's and Spearman's correlation coefficients are very weak – tab. 3.

The differences in the average VAT gap rate and its distribution among EU15 and CEE must be identified. The VAT gap is definitely higher in CEE (tab. 4): the average rate (29% of VAT revenue; 2014) is in this case two times higher than in EU15 (13.7%). The median is also two times higher: 24.7% with 11.3% from VAT revenue. The significant difference of the third quartile is also worth noting: it is three times higher in the case of CEE (37.3%) than EU15 (12.9%). What is more, in 2010 this difference was almost four times higher: 52.2% and 13.7%.

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PLN 40bn. This would have meant that the budget deficit would be amounted to about PLN 6bn (and in 2014 the state budget would end with a surplus, similarly to 2011-2012).

**Table 3. The Pearson's and Spearman's correlation coefficients for the dependency between the level of standard VAT rate and the level of VAT gap (% of actual VAT revenue) in the EU countries in 2014**

	PEARSON	SPEARMAN
EU 27*	-0.0295	-0.0842
CEE 11	-0.0724	-0.0727
EU 15	0.1385	-0.0830

\* Cyprus excluded

Source: own calculations.

**Table 4. The comparison of the average level of VAT gap (% VAT revenue) in 2010 and 2014 in EU, EU 15 and CEE 11 countries**

	2014			2010		
	EU 27 <sup>1</sup>	CEE 11	EU 15	EU 26 <sup>2</sup>	CEE 10 <sup>3</sup>	EU 15
$\bar{x}$	21.5	29.0	13.7	24.5	36.9	13.6
M	11.6	24.7	11.3	13.7	30.0	11.0
Q1	10.1	14.9	9.5	10.6	26.5	8.8
Q3	31.2	37.3	12.9	33.5	52.2	13.7
$x_{\min}$	1.3	8.9	1.3	2.6	10.5	2.6
$x_{\max}$	61.0	61.0	38.9	70.3	70.3	40.2
Poland	31.7			26.0		

<sup>1</sup> Cyprus excluded

<sup>2</sup> Cyprus and Croatia excluded

<sup>3</sup> Croatia excluded

Source: own calculations.

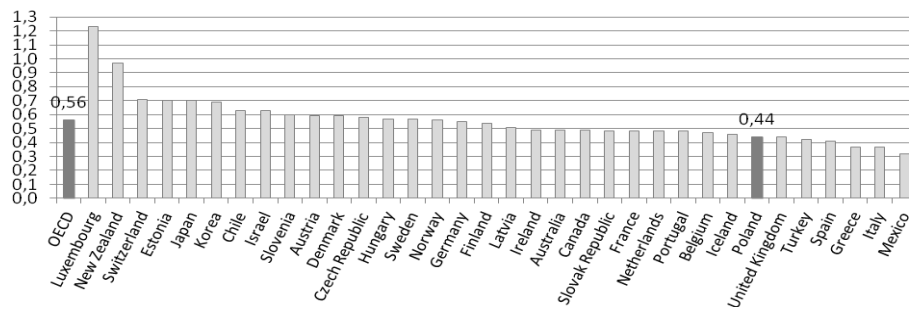
Data from 2014 and 2010 are worth comparing. As in the case of EU15 the above statistics are without any significant changes (although diagram 6 shows a significant increase in the VAT gap in the Netherlands, France, Italy and the decrease of it in Ireland), then in the case of the CEE all set measures of central tendency decreased – tab. 4. But they are still on a relatively higher level than in the context of EU15. It must be noted that Poland is the only CEE country where the VAT gap rate (in relations to VAT revenue) was increased in contrast to 2010 (fig. 6).

The above estimates from the EC's reports confirm the statistics of OECD evaluating the rate of actual VAT revenue with the use of the VRR indicator



(VAT Revenue Ratio; OECD 2016), which reflects the relations of the actual collected VAT revenue to the one that would theoretically be raised if a unified standard VAT rate was applied to all final consumption – fig. 7.

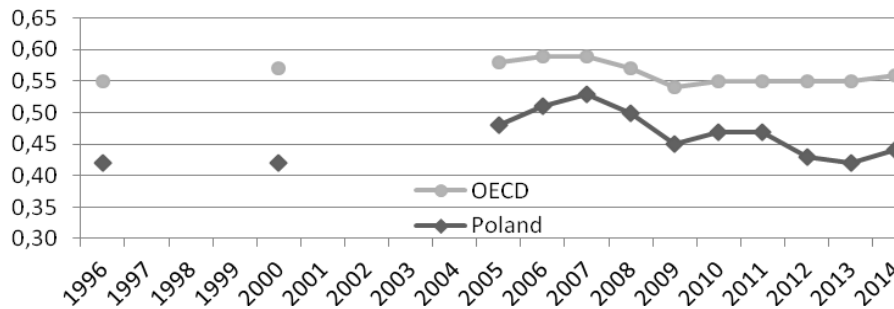
**Figure 7. The VAT Revenue Ratio in OECD countries in 2014**



Source: self-reported data on the basis of OECD 2016.

The above data confirm that a significant part of potential VAT revenue in OECD countries is not collected (56% on average in 2014), there are preferential VAT rates used on a larger scale and there is a difficulty with collecting VAT. It must be stressed that Poland has one of the lowest VAT revenue ratio (VRR) among OECD countries. In 2014 it was estimated at 0.44 and was significantly lower than the average for all OECD countries (0.56). What is more, this indicator has been constantly decreasing since 2007 (fig. 8) when it reached 0.53 which means VRR decrease of 17% in the years 2007-2014. What is more, the discrepancy between the VRR for Poland and the average for OECD has been increasing. In 2007 the difference amounted to only 0.07, then in the period 2012-2014 it was estimated at an almost doubled rate (of 0.12-0.13) which confirmed the increase in difficulty of collecting VAT and the size of VAT gap in Poland (fig. 6, 5 and 4).

**Figure 8. The average VAT Revenue Ratio for OECD countries and for Poland in the years 1996–2014**



Source: self-reported data on the basis of OECD 2016.

It must be noted that among countries with the lowest VRR (fig. 7) there are those with the highest VAT gap included in diagram 6, i.e. Italy, Greece and Poland.

The above conclusions are in line with the results of the Keen 2013 study which indicated that changes in VAT revenues have been mainly driven by changes in *C-efficiency*, i.e. an indicator of the departure of the VAT from a perfectly enforced tax levied at a uniform rate on all consumption (it means by existence and differentiation of reduced VAT rates and exemptions, and much less by changes in the standard VAT rate; Keen 2013). The study also concluded that *C-efficiency* usually moves in the opposite direction from the standard VAT rate which shows greater stability of VAT revenue (and fiscal policy) in countries with lower basic VAT rate; it also shows stronger susceptibility to fraud and changes in the main source of budget revenue in the EU countries with higher standard VAT rate, for example in Poland (which is proven by the above data analysis).

It must be added that VAT revenue is also an important revenue source for the European Union budget (in 2015 it was 12.3% of all the EU's revenue budget and amounts to EUR 18.1bn) which is the key source for investment in less developed EU regions – Poland included, as it has been the biggest nominal net beneficiary of the EU's budget since 2009 [Redo 2011]. The growing issue of the VAT gap is causing also the decrease in financial independence of the EU as it increases the weight of the largest EU budget's revenue based on GNI (the so called 4th source), dependent on national policy through annually enacted states' budgets [Dynus 2007]. It must be noted that

15 years ago (2000), the VAT revenue amounted to 38% of the EU's budget revenue (and in 1990 it was almost 60%), whereas in 2013 it was only 9.4% [European Commission 2016b]. Similarly, the weight of the 4th source of the EU's budget revenue was previously significantly lower: 40.5% in 2000, whereas in 2015 – 68.8%. Even though it is obvious that is mostly the result of conscious effort to include more countries' wealth in financing of the EU, that is the reduction of VAT rate flowing into the EU's budget and simultaneous increase in the 4th source based on GNI. Nonetheless, the issue of big and/or growing VAT gap in some of the EU member states forces setting a higher GNI call rate (the GNI percentage that a member state pays in the form of the EU budget's fourth source of financing) and causing the increase in expenditures from the state budget (decreasing its balance or forcing savings in financing public expenditures) as well as the increase of uncertainty in both financing of the EU's budget and national economic policies.

### **Threats connected to tighten up the tax systems**

In the times of globalization and internationalization of enterprises, the construction of VAT has proven to be very susceptible to abuse, thus inefficient. The growing need for solutions to optimize public levies turned tax consulting into a high profitable business on a massive scale; tightening up of the tax system paradoxically enhances its growth and makes tax consulting even more available. That is why the introduction of tightened new solutions seems to lack purpose as it strengthens economic instability, premium for risk investment, capital cost [cf. Redo 2017a] and shortens planning perspectives, limits enterprise development and lowers investment [cf. Redo 2017b, Redo 2017c]. These actions are generating greater and greater cost and time, causing ineffective allocation of public expenditures and serve adversaries who offer better salaries to tax officers. Anti-tax business has been thus gaining trained specialists with knowledge on office methods, efficiency of those methods and weak points of some legal solutions. It might be argued that legislators formulate changes so that these become suitable for big enterprises and they consciously leave the door open for new anti-tax constructions without recognizing potential losses for the state's budget due to the complicated nature of the matter. Quite often it is related to significant financial benefits. It can be easily calculated that if in 28 EU countries it is EUR 160bn of VAT annually, the amount of these benefits is attractive for a lot of people,

especially in those poorer countries of the EU. Additionally, one must remember about the CIT gap.

It can not be argued that new regulations forbidding, eliminating or imposing new responsibilities or penalties [see, e.g., Tratkiewicz 2016] have been the right direction. They limit freedom of economic activity and make it more complicated, thus limit development of greatly needed entrepreneurship in Europe. Of course, it does not mean allowance for functioning of faulty tax and legal solutions or tolerance for criminal activities. There is a need for shared, international activities leading to the strengthening of taxing patriotism [Poniatowski 2016]. A greater financial and economic awareness of the society and the change of its morale is needed, as well as reeducation from the early stages of life. One of the barriers seems to be also the differences and tax preferences in Europe which will always provoke taxpayers to lower the fiscal burden. Thus, it seems unlikely that the issue of tax evasion and avoidance could be overcome, despite the observed decrease in acceptance for tax abuse or initiatives of the EC which appointed a special *Tax Gap Project Group*, and in January 2016 it introduced solutions to fight tax avoidance [*Anti Tax Avoidance Package*; Ramotowski 2016]; especially that, as a result of many scandals exposing lack of tax solidarity and honesty, faith in the efficiency of the EC's actions is currently decreased. It is common knowledge that Austria, Luxembourg, the Czech Republic or Slovakia have been secretly attracting holdings through dumping tax incentives [Gajewski 2017]. Even though there have been a few suggestions to modify VAT (e.g. CVAT<sup>6</sup> or VIVAT<sup>7</sup>), it seems that relative efficiency could be achieved by unification of tax rates in the EU and elimination of preferences in this regard, or creation of a fiscal union – this, however, requires much more maturity.

A deep reflection on the future of sources of financing public expenditures and a radical reconstruction of tax system in the situation of devaluation of current solutions is needed. Maybe it is the time to withdraw from VAT and replace it with a new construction (as it happened with turnover tax) or replace it with a new tax – for example global financial tax (GFT) which is redistributed among all countries and make it the main source of public revenue. That would require international solidarity in taxation of financial markets which are fueled by trillions of USD, EUR, JPY, GBP, SEK, or DKK as a result of quantitative easing and CHF as a result of strong demand for it, or RMB as

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<sup>6</sup> Proposed by Varsano 1999 and further developed by McLure 2000.

<sup>7</sup> Proposed by Keen, Smith 1996 and Keen, Smith 2000.

a result of long export expansion. Thus these financial markets nowadays possess potential even greater than before the crisis of 2008, capability of generating profits even during the times of crises or bear markets, and, what is the most important, debt to taxpayers for helping them during the crisis of 2008.

VAT gap in Poland is one of the biggest in the EU and is still growing which, in the situation of permanent budget deficits and dynamically growing public debt in Poland increases already high investment risk. It increases instability of sources for public expenditures and it has an effect on estimating Polish economy's credibility, thus market cost of capital, i.e. future investment level, entities' creditworthiness, consumption level and the rate of debt growth. Without a doubt, it is necessary to tighten the tax system up and track illegal activities. But it must be noted that constant changes in business rules create additional uncertainty and new solutions complicate the entrepreneurs' situation in Poland which already is complicated. Paradoxically, it all discourages people from establishing and developing enterprises, as it also encourages them to look for simpler and more profitable solutions in other countries which is easier thanks to international legal environment and globalization.

## Conclusions

The above conducted analysis seems to confirm the European Commission's estimates that Poland has one of the highest VAT gap among the EU countries. The VAT gap is generally definitely higher in CEE11 countries than in EU15 – this is confirmed by all central tendency measures. The average VAT gap rate in 2014 (29% of VAT revenue) was in CEE11 two times higher than in EU15 (13.7%). Poland had in 2014 the seventh biggest VAT gap in the EU28, which amounted to PLN 40bn, i.e. 31.7% of actual collected VAT revenue. And the VAT gap in Poland increased in contrast to 2010 data (by almost 1/4). These estimates are in line with the deceleration of the VAT revenue growth in Poland since 2008 (in contrast to nominal GDP growth) and moderate Pearson's correlation coefficient for the dependency between nominal GDP changes and nominal VAT revenue changes in Poland in the years 2003–2016 (chain base indices;  $r=0.47$ ). These results are also confirmed by OECD's VRR indicator – that a significant part of potential VAT revenue in OECD countries is not collected (56% on average in 2014). It must be stressed that Poland has one of the lowest VAT revenue ratio among OECD countries (0.44 in 2014) and

this indicator has been constantly decreasing since 2007 (by 17% in the years 2007–2014), what confirmed the increase in difficulty of collecting VAT and the size of VAT gap in Poland.

The problem with tax collection effectiveness in the most EU countries is a special one in the Europe, because VAT revenues are the main source of public expenditures in all EU countries, so they decide about the economic policy effectiveness in stimulating economic growth and mitigating crises. These in turn decide about the investment risk, attractiveness to investors, economic prospects and the ability to catch up. That is why the VAT gap problem in Poland is further complicated by the threats that are connected with the constant changes introduced to tighten up the tax system create additional uncertainty and complicate the situation in already complicated business environment.

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