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The estimate of the value added tax revenue loss

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Economic Analysis **25**

Abstract

This paper presents the estimate of the total tax loss and tax gap for value added tax. Although this tax represents one of the most significant sources of revenue for the general government, the increase in VAT revenue in recent years has not been commensurate to the growth of the macroeconomic base. In the absence of a comprehensive analysis in this area, the mismatch has been attributed to growing tax evasion and avoidance. For the purpose of this analysis, the tax gap is estimated using two methods: calculation based on the output tables and calculation based on nominal GDP net of the items not subject to VAT. The results of our quantification show that the total VAT loss in 2010 reached €2.3 billion, which represents 3.5% of GDP. From the total VAT loss, the tax administration is able to capture and identify less than 30%. The remaining 70% represents the tax gap, i.e., the tax liability which has not yet been identified. Almost half of the tax loss (1.6% of GDP) is attributable to lower effectiveness of tax collection compared to the EU average. In other words, if the effectiveness of tax collection were on par with the EU average, the basic VAT rate could be 4.7 p.p. lower (14.3% in 2009) to generate the current level of VAT revenue or, if maintained, it would increase revenue by 1.6% of GDP (€1.1 billion).

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Note:
This document presents the views of its authors and of the Institute for Financial Policy which do not necessarily reflect the official views of the Ministry of Finance of the Slovak Republic. The analyses prepared by the Institute for Financial Policy (IFP) are published to stimulate and enhance professional and general discussion on various economic topics. Therefore, any quotations of this text should refer to the IFP (and not the MFSR) as to the author of these views.

TABLE OF CONTENT

Summary

The total loss of VAT receipts consists of two components: the tax gap and the collection loss.

In simplified terms, the tax gap quantifies the scope of tax evasion and avoidance. The tax gap represents the difference between the tax actually paid and the tax that should have been paid had all individuals and companies reported their activities and transactions correctly in compliance with the letter and spirit of the law (theoretical tax). The tax gap estimate is net of the tax administrator's control activities.

There are two basic approaches to calculate the tax gap: one is based on macroeconomic data (top-down) while the other uses microeconomic data (bottom-up). This document contains calculations based on the macroeconomic approach. The "theoretical" VAT, calculated based on the data from the national accounts (input-output tables), is compared with the actual VAT revenue.

Summary of results for 2000-2010
- The total VAT loss in the years 2000-2005 remained stable at about 18% of the theoretical VAT. **From 2006, the VAT loss has been rising steadily and reached 35.9% in 2010**. In absolute terms, the 2010 loss of VAT receipts reached **€2.3 billion, which represents 3.5% of GDP**.

- **From the total VAT loss, the tax administration is able to capture and identify less than 30%. The remaining 70% represents the tax gap, i.e., the tax liability which has not yet been identified.**

- The effectiveness of the collection of taxes declared by taxpayers reaches approximately 98%. On the other hand, the tax administration is able to collect only about 5% of the taxes reassessed based on tax audits, **which can be considered an extremely low success rate of collection**.

- In international comparison, the effectiveness of VAT collection in Slovakia declined. **In 2009, the variance against the EU average reached 1.6% of GDP, which represents an increase by 1.2% of GDP compared to 2005**. In other words, if the effectiveness of tax collection were on par with the EU average, the basic VAT rate could be 4.7 p.p. lower (14.3% in 2009) to generate the current level of VAT revenue or, if maintained, it would increase revenue by 1.6% of GDP (€1.1 billion).

If the objective is to reduce the size of the tax loss, purely macroeconomic approaches without further micro-analyses do not practically provide any additional information that could be used for the identification of tax evasion and avoidance. For this reason, it is essential for the forthcoming analytical work to focus on individual data for individual taxpayers and identify discrepancies between the information reported (e.g. Corporate Income Tax Returns versus value added for the national accounts). This will require close cooperation and exchange of information between the Statistical Office, the Tax Administration and the MFSR (IFP).

Introduction

The main objective of the tax system is to ensure the collection of tax revenues for the general government budget. To this end, legislative and institutional frameworks (tax legislation and tax administration) have been put in place. While the tax legislation defines rules for the calculation of taxes, the tax administration is there to collect them. These two components complement and influence each other. Even well-designed tax legislation may be undermined by bureaucracy, inactivity or inadequate conduct by the tax administration in the collection and audit of taxes. And vice versa, even the most effective tax administration will not ensure proper tax collection if the underlying tax legislation is confusing or gives too much room for arbitrary interpretation. Inadequate design of either of the two tax system components prompts undesirable motivation on the part of taxpayers who are looking for ways to reduce their tax burden.

The difference between what the tax system expects to collect from those liable for tax and what has actually been paid can be defined as the tax gap. Depending on the nature of the flaws in the tax system, this may involve legal ways of reducing tax liability through legislative loopholes (tax avoidance) or illegal ways (tax evasion).

The objective of an analysis of this type is to document different approaches used to estimate the tax gap for the most important taxes. A Tax Gap Report for Slovakia should be prepared annually and serve as a basis for decisions to be taken in the area of taxation. This analysis also attempts to identify those unavailable data which, if available, could significantly refine the tax gap estimate.

The size of the tax gap needs to be identified for a number of reasons:

- Tax evasion and avoidance distort the economic environment because some entities gain a "competitive" advantage which, in the long run, may encourage also other entities (the "good" ones) to resort to similar practices even though it was not their original intention.

- The magnitude of tax evasion and avoidance reflects the effectiveness of the tax system. The knowledge of the structure of tax evasion and avoidance and the identification of specific tax evasion and avoidance schemes help identify weak links in the tax system and can be used for risk analysis. This typically prompts a revision of the tax legislation and/or adjustments to the way in which the tax is administered. Such a legislative revision is accepted by the general public because it is substantiated by the analysis of the problem, its magnitude and the underlying causes.

- Irrespective of the type of tax evasion or avoidance involved, the loss of tax receipts has a direct impact on the government's economic policy. If a country runs sizeable deficits and the share of taxes in GDP declines continually (without the impact of legislation), it is very difficult to reduce the deficit and, at the same time, maintain the same level of public services and social standards. From the fiscal policy perspective, the level of the overall tax burden (measured as a percentage of GDP) should ideally remain relatively stable over time. A stable share of taxes and social contributions in GDP increases the predictability of developments in public finances and facilitates their swifter consolidation. A long-term decline in the overall tax burden makes fiscal consolidation more challenging as it requires adoption of stricter consolidation measures on the expenditure side.

This document presents the estimate of the total tax loss for value added tax. Although this tax represents one of the most significant sources of revenue for the general government budget, the increase in VAT revenue in recent years has not been commensurate to the growth of the macroeconomic base. In the absence of a comprehensive analysis in this area, the mismatch was attributed to growing tax evasion and avoidance.

Since this is the first analysis, it does not sufficiently address all methodological issues and the results presented here should therefore be considered as rough estimates. The authors will be grateful for any suggestions aimed at improving the methodology of calculations.

1. The "tax gap" concept

More and more attention in recent years has been paid to tax-gap measurements. Nevertheless, the number of studies mapping the scope of the tax gap in a comprehensive manner remains relatively low. The United Kingdom, Sweden and Denmark can be mentioned as examples of those EU Member States which have a methodology in place and publish regular reports in this area. Outside the EU, the United States and Australia are particularly advanced on this front. Apart from estimating the size of their overall tax gaps from the macro level ("top-down" approach), all these countries are attempting to verify and allocate their tax gaps to various types of tax evasion and avoidance ("bottom-up" approach).

From among the EU countries mentioned above, the United Kingdom and Sweden seem to have advanced the most. The British HMRC[1] published its first report in 2009 on an experimental basis with very rough tax gap estimates due to the uncertainty of calculations. In 2010, the HMRC published a report with substantially improved methodology and data (Measuring Tax Gap 2010, September 2010) with 2008/2009 as the last analysed year[2]. The report captures almost all taxes administered by the HMRC.

Sweden (Swedish Tax Agency) also published its report "Tax Gap Map for Sweden" based on approximately the same methodology as the one used by the United Kingdom. The analysis also contains the "Tax Gap Map" which allocates the estimated tax gap to five different types of taxpayers[3] which, in turn, helps to assess the effectiveness of measures taken to combat tax evasion and avoidance.

In light of the experiences of these countries, the OECD published a number of documents (e.g., Managing Taxpayers' Compliance: A practical Guide Based on Revenue Body Experience, OECD-FTA 2008) describing **the methods used to monitor and evaluate the willingness to pay taxes.** However, rather than on estimating the overall tax gap itself, they focus on measuring the effectiveness of tax administration and on the risk analysis.

At EU level, particular emphasis is laid on value added tax for a number of reasons. The first reason is that VAT constitutes one of the EU budget's own resources. A large scope of tax evasion and avoidance automatically means higher rates for individual Member States. At the same time, if the scope of tax evasion and avoidance among individual Member States differs, some Member States end up paying relatively higher contributions than they should. The Commission therefore contracted the Reckon LLP consulting firm to calculate the tax gap for all EU Member States, including Slovakia, for the period of 2000-2006. The final report, "Study to quantify and analyse the VAT gap in the EU-25 Member States", was published in September 2009. Chapter 2.3 compares the results of the study with the IFP results.

In addition to the above-mentioned, under Commission Decision 98/527/EC on the treatment for national accounts purposes of VAT fraud, all EU Member States, including

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[1] HM Revenue & Customs – institutions responsible for the collection of taxes.
[2] In the UK, the fiscal year runs from April to March, therefore two calendar years are mentioned.
[3] Households and individuals; micro companies (self-employed); SMEs; large corporations; public sector, non-profit and charitable organisations.

Slovakia, are obliged to calculate the size of VAT evasions. The responsibility for the calculation of VAT evasions lies with the Statistical Office of the Slovak Republic[4].

1.1.   Tax gap definition

In very simplified terms, the tax gap quantifies the size of tax evasion and avoidance. It does not mean, however, that the tax gap reflects solely tax fraud. The tax gap also occurs because of the existence of various deficiencies in reporting and calculating the tax liability due to inability to interpret legal requirements and calculate the tax liability correctly (e.g. complicated legislation and tax return forms), ignorance of the law (I don't know that I am liable for tax) or because of the flaws in the system of tax administration. **Hence the tax gap may occur as a consequence of an intentional conduct designed to reduce tax liability or an unintentional conduct attributable to the lack of ability/knowledge to report one's tax liability.**

> *Tax gap definition:*
>
> *The tax gap represents a difference between the tax actually paid and the tax that should have been paid if all individuals and companies had declared their activities and transactions correctly, in compliance with the letter and intentions of the applicable law (referred to as "spirit of the law"). The tax gap is net of the tax administrator's control activities.*

Since the tax liability declared and the tax actually paid is evaluated annually, the tax gap is not static and changes from one year to another. In other words, there is no link between tax gaps identified in individual years. This is especially true when the quality of data used for the tax gap calculation is good. In all other situations, given the uncertainty about the quality of data, it is only possible to calculate the average annual tax gap. However, in these situations, calculations do not necessarily capture changes in the tax gap trend and, as such, provide no indicators to the tax administration.

*"Success of collection" and total loss of tax receipts*

A large majority of taxes is paid on time or with only a slight delay. However, a portion of taxes is not paid at all despite the measures taken by the tax administration. This gives rise to the "collection losses", i.e., inability to enforce the tax liability already declared.

If we base ourselves on the tax gap definition – the difference between what has actually been paid and what should have been paid had all those liable for tax declared what they should have declared – we are in a situation where the taxpayer did declare his liability in accordance with the law, but the tax has not been paid for various reasons.

The collection losses can be monitored separately because the available information is quite precise. Information on the tax gap is hidden as it is based on the presumption of undeclared tax liability. Since the sum of the two represents the total loss in tax receipts, it is necessary to

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[4] Statement of the Slovak Statistical Office (SSO) of 14 September 2011: "Presently, the SSO does not have the required data on VAT tax evasion for 2000–2010. The Statistical Office in cooperation with Infostat has so far performed only an experimental estimate of the amount of VAT evasions for 2003–2005. Commission Decision 98/527/EC is in the process of being implemented. The SSO is currently implementing a Norwegian software application SNA-NT which, in the process of balancing, will enable dynamic quantification of the theoretical VAT and will make the quantification of differences between the theoretical and accrual VAT more efficient."

monitor both components in order to assess the effectiveness of the tax system and tax administration.

Tax gap	Collection loss

Total loss of receipts
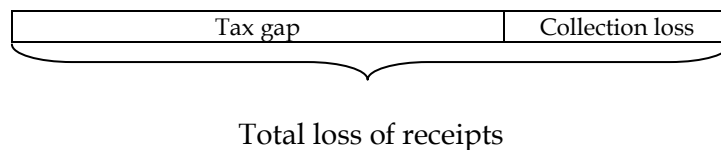
The chart below depicts the overall tax revenue structure. The total tax revenue consists of two main parts:

1. **Actual cash revenue – tax assessed and actually paid –** can be divided into four sub-groups depending on the reason why the tax has been paid:
   - The first part of the VAT revenue includes the revenue that would be received **even in the absence of a tax administrator**.

   - The second part is the revenue received thanks to the threat of audit activities performed by the tax administrator. Being aware of the threat of a tax audit and ensuing sanctions, taxpayers voluntarily declare their tax liability and pay the tax due. In other words, this revenue is received mainly thanks to the **preventive effect of the tax administrator's mere existence**. The first and second component of the revenue cannot be presently quantified and thus the chart is only illustrative.

   - The third component of the revenue is attributable to the **basic control activities by the tax administrator,** such as checking and correcting the formal aspects of tax returns and tax liability calculations, e.g., by checking the 'total' in the tax return forms. The absence of appropriate records in Slovakia makes the quantification of the contribution of the tax administrator's basic control activities equally difficult.

   - The fourth part of the revenue comes from the tax paid additionally as a result of **in-depth audits** performed by the tax administrator. Although the additional revenue derived from the tax administrator's audits is not particularly high, it has a preventive effect in that it encourages taxpayers to pay their taxes when and as due. This revenue component can be quantified because the records are detailed.

2. **Total loss of tax receipts – this is the tax which taxpayers should have declared and paid, but failed to do so for various reasons.** Also in this case, the total loss of tax receipts can be divided into two parts:

   - **Collection loss –** this is the tax identified (reassessed based on tax audits) but not paid.
   - **Tax gap –** this is the tax which the tax administrator has not yet identified and which, consequently, has not been paid.

Commission Decision 98/527/EC on the treatment for national accounts purposes of VAT fraud uses a different terminology, which is, nevertheless, consistent with the above breakdown:
   - **Evasion without complicity –** these evasions do not include the buyer's connivance (the buyer pays VAT to the seller, but the latter fails to remit it to the tax authority)

- **Evasion with complicity** – these evasions involve the buyer's connivance (the buyer does not pay VAT to the seller)

Theoretical structure of tax revenues
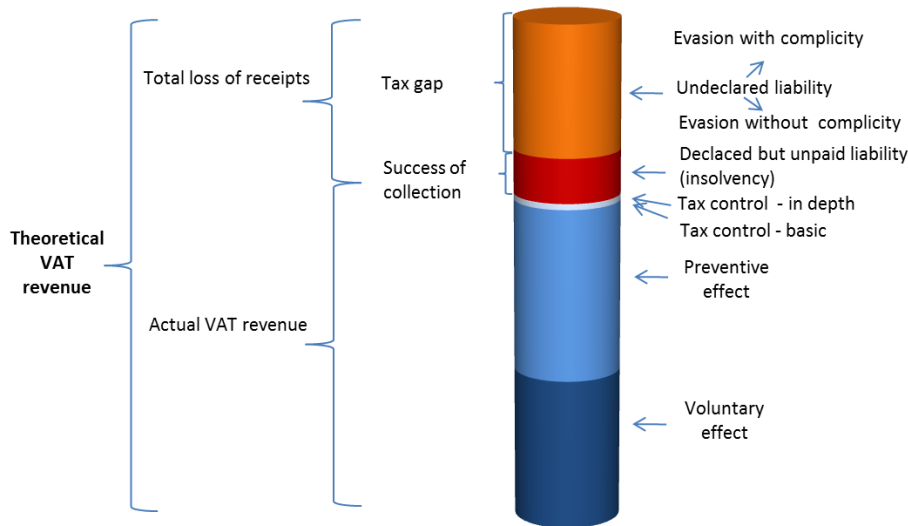
1.2. Approaches towards the tax gap estimation

The tax gap comprises a large number of activities and transactions which should have been taxed but which, for various reasons, have not been taxed. Since the tax gap is hidden by definition, there is no simple way of identifying it and going into its structure. For this reason, it is appropriate to estimate the size of the tax gap using several different methods for calculating undeclared tax liability. There are two basic approaches: one based on macroeconomic data (top-down) and the other based on microeconomic data (bottom-up). Both approaches have their advantages and disadvantages, as discussed in a greater detail in the following sub-chapters.

1.2.1. Macroeconomic approaches (top-down)

One of the ways of measuring the tax gap is to use macroeconomic methods (top-down). These methods are sometimes referred to as indirect methods since the tax gap calculation uses the data obtained otherwise than in connection with the filing of tax returns and is therefore largely independent of the taxation process. The "theoretical" tax thus calculated is then compared with the actual tax revenue. Subject to the availability of reliable data, these methods provide information on the overall tax gap which can then be divided (using other methods) into several groups determined by common characteristics.

The tax gap is often calculated using statistical discrepancies in the national accounts. One example is the discrepancy between the household consumption and income, which can subsequently be used for the calculation of hidden income. In the case of VAT, the data on

the flows of goods and services are used to calculate the theoretical tax liability, which is then compared with actual VAT receipts.

Nevertheless, the macro-data approach has certain drawbacks:

- As discussed above, macroeconomic approaches provide information on the overall tax gap. However, these methods cannot be used to determine the causes of the gap, i.e., assign them to individual tax entities (households, types of companies, etc.)

- The possibilities for estimating the size of the tax gap are directly dependent on the availability of detailed data. In the case of VAT, for example, the data need to be broken down by products so that the corresponding VAT rate can be correctly assigned. This is particularly important if there are several VAT rates.

- Even if such data are available, they must be of a sufficient quality. For example, the national accounts already contain estimates for the undeclared economy. An incorrect estimate by the Statistical Office has a direct impact on the estimates of the tax gap.

- Since the detail of macroeconomic data in itself is not always sufficient to estimate the gap, it is also necessary to use supplementary information beyond the macro-data framework.

1.2.2. Microeconomic approaches (bottom-up)

Another way of estimating the tax gap is the bottom-up approach which uses micro data for individuals and companies. The results thus obtained are then applied to the entire population or companies, or to groups of taxpayers with the same characteristics. The most commonly used microeconomic approaches include:

- **Selection of a random sample of taxpayers –** under this method, a random sample of taxpayers is selected, analysed and then extrapolated to the entire population.

- **Targeted audits based on risk analysis –** based on the analysis of specific characteristics, various groups of taxpayers or sectors can be identified. The results of such analysis cannot be fully extrapolated to all taxpayers or to the economy as a whole since their impact would most likely be overestimated. While a random sample can be considered representative, in this particular case the sample is not representative because it focuses on a selected group of taxpayers.

2. VAT gap estimate

The following part explains the method applied to estimate the VAT gap for 2000-2010 using the macroeconomic approach (top-down). In view of the still open methodological issues and the need to verify certain sets of the input data, the results of this analysis should be considered experimental and subject to a major revision in the next update.

The gap calculation involves three basic steps:

1. **Estimate of the theoretical VAT revenue** – estimate of the tax gap based on the calculation of "theoretical VAT", i.e., the VAT revenue that would be earned if all taxpayers fulfilled their duties in compliance with the law and the intentions of the legislator.

2. **Calculation of the VAT "collection loss"** – since a portion of the tax gap can be explained by the still unpaid, yet declared tax liability, or by the additionally assessed tax liability, these aspects must be considered in the tax gap estimation.

3. **Tax gap estimate** – the tax gap is then determined as a difference between the calculated theoretical VAT and the actual VAT revenue net of the "collection" loss.

2.1. Theoretical VAT revenue estimate

Two methods have been used to calculate the theoretical VAT revenue:

- **Method 1:** Calculation based on the **output tables** – this method is also used by other countries to calculate the tax gap based on the top-down approach.

- **Method 2:** Calculation based on **nominal GDP net of** the items not subject to VAT. The consumption method for GDP calculation is used.

Both methods are based on the same macroeconomic approach (top-down methods). However, **the first method** is more precise as it is based on detailed expenditures in the economy of those items that are subject to VAT. Since this method is quite demanding in terms of data availability, its application is limited to the output tables data. Only data until 2007 are currently available. Hence, this method cannot be applied to quantify the theoretical VAT revenue for 2008-2010.

The **second method** uses nominal GDP net of those components which are not subject to VAT. This is a simpler method using more aggregated data, which is why the data for calculation are available also for the previous calendar year.

Provided that the input data of sufficient quality are available, the first method can be considered suitable to determine the approximate size of theoretical VAT and, thereby, the tax gap. The second method – given its lesser degree of detail – can only be used to estimate the trend of the theoretical VAT development in the years for which detailed data for the first method are not available. The theoretical VAT estimate for such years is based on the historically demonstrated link between the two methods, which should exist as long as there has been no significant change in the structure of the economy and the share of the VAT-subject component to GDP remains unchanged.

2.1.1. Method 1: Estimate based on the output tables

Only the input-output tables for the years 2000-2007, except for 2002, were available.[5]. These tables are matrices broken down by branches and products, which describe in detail the domestic output processes and transactions in products in the national economy. For the purposes of this analysis, it was possible to identify the transactions in all products for all branches and sectors of the economy and define whether these transactions are relevant for VAT calculation purposes.

The following categories from the input-output tables have been used:

- **Final household consumption,**

- **Gross fixed capital formation,** broken down by individual institutional sectors: public administration, non-profit institutions serving households, financial corporations, non-financial corporations, and households,

- **Intermediate consumption,** broken down by individual institutional sectors: public administration, non-profit institutions serving households, financial corporations, non-financial corporations, and households.

The data for individual categories across all sectors have been disaggregated down to the four-digit production code level, which translates into about 510 commodities. This is the most detailed level of disaggregation available from the national accounts. Each commodity was assigned the corresponding VAT rate and then the theoretical tax revenue was calculated.

In the case of gross fixed capital formation and intermediate consumption, the calculation included only production without entitlement to VAT deduction and non-market production for the sectors "public administration" and "non-profit institutions serving households". These data were imported from the VAT reporting forms which are used for the calculation of the harmonised VAT own resource base[6]. The following table presents the results of the theoretical VAT revenue calculation:

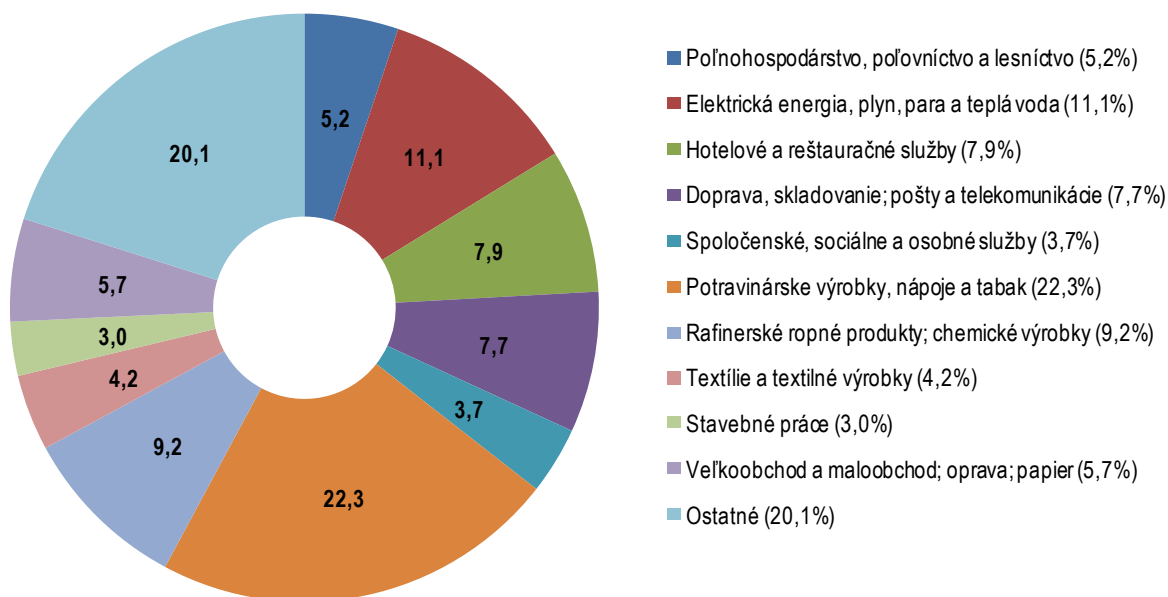| Theoretical VAT: Method 1 (in millions of EUR)							
	2000	2001	2003	2004	2005	2006	2007
VAT theoretical revenues	**2 879**	**2 779**	**3 574**	**4 435**	**4 741**	**5 485**	**5 885**
- final household consumption	1 986	2 102	2 596	3 317	3 561	3 926	4 341
- gross fixed capital formation	429	279	390	397	420	566	737
- intermediate consumption	464	398	588	721	760	993	807

Source: IFP

Final household consumption has the biggest share in the VAT revenue (approximately 70%), followed by intermediate consumption of the exempt sectors and gross fixed capital formation of the exempt sectors.

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[5] Tables provided by the Statistical Office of the SR, except for 2002. This is because the year 2002 was calculated based on technical and distribution coefficients applied to aggregates only and therefore the results in the structure required by the IFP are not available. Also, the data provided were not revised which explains the discrepancy between the actual national accounts. For this purpose, the IFP recalculated the tables to actual data values.

[6] VAT Report is compiled by the Statistical Office of the SR.

- Poľnohospodárstvo, poľovníctvo a lesníctvo (5,2%)
- Elektrická energia, plyn, para a teplá voda (11,1%)
- Hotelové a reštauračné služby (7,9%)
- Doprava, skladovanie; pošty a telekomunikácie (7,7%)
- Spoločenské, sociálne a osobné služby (3,7%)
- Potravinárske výrobky, nápoje a tabak (22,3%)
- Rafinerské ropné produkty; chemické výrobky (9,2%)
- Textílie a textilné výrobky (4,2%)
- Stavebné práce (3,0%)
- Veľkoobchod a maloobchod; oprava; papier (5,7%)
- Ostatné (20,1%)

Source: IFP

2.1.2. Method 2: Estimate based on nominal GDP net of items not subject to VAT

A logical starting point for the estimation of the VAT base is gross domestic product (GDP) at current prices. GDP, because this aggregate represents the total of value added of the goods and services produced in the economy. At current prices, because VAT is applied as a percentage of the current prices of goods. This means that the share of VAT in the current price of a product is constant in time as long as the VAT rate remains unchanged. Therefore, the basic starting point is the known identity of the national accounts which defines GDP in terms of its use at an aggregated level:

$$GDP = C + I + G + (X - M)$$

where GDP expenditure consists of final household consumption (C), capital investments (I), government consumption (G) and trade balance expressed as a difference between the goods exported (X) and imported (M). Under this approach, those components of final consumption which are not subject to VAT are gradually deducted from and those that are subject to VAT are gradually added to the basic GDP aggregate.

This theoretical VAT base, multiplied by the weighted average VAT rate, gives the theoretical VAT revenue. The weighted average VAT rate is calculated based on the data used under Method 1; for the period for which the data were unavailable (2008-2010) the weighted rate was calculated through weights in the household consumption basket.

The following table describes the VAT base estimate under this method:

Method 2 – estimate of theoretical VAT revenue (in millions of EUR)											
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
GDP (current prices, mil. Eur)	31 177	33 881	36 807	40 612	45 161	49 314	55 081	61 555	67 007	63 051	65 906
Adjustment 1. - current account of BOP (X-M)											
(-) export	21 964	24 636	26 176	30 802	33 665	37 603	46 471	53 373	55 793	44 506	53 292
(+) import	22 767	27 375	28 856	31 579	34 921	39 904	48 690	54 051	57 386	44 784	53 964
Adjustment 2. - gross capital formation (I)											
(-) GFCF	8 042	9 660	10 074	10 051	10 836	13 089	14 589	16 096	16 576	12 991	13 390
(-) changes in inventories*	58	359	631	-58	1 061	1 150	820	999	1 932	-670	1 864
(+) GFCF households	2 034	1 895	2 252	2 205	2 211	2 693	3 010	3 272	3 414	3 294	3 320
(+) GFCF general government	876	1 046	1 204	1 040	1 079	1 029	1 198	1 149	1 314	1 462	1 481
Adjustment 3. - general government consumption(G)											
(-) general government consumption	6 279	6 992	7 466	8 291	8 584	9 036	10 410	10 640	11 803	12 602	12 688
(+) intermediate consumption of general government	2 120	2 320	2 292	2 503	2 562	2 472	3 111	2 818	3 038	3 384	3 284
Adjustment 4. - household consumption(G)											
(-) final consumption of residents abroad	766	815	1 048	1 048	929	1 359	1 608	1 844	2 048	1 887	1 856
(+) final consumption of non-residents in Slovakia	979	1 374	1 432	1 190	1 011	1 438	1 702	1 860	2 042	1 777	1 746
(-) agric. production of goods for own final consum.	2 496	2 859	3 087	3 467	3 755	4 250	4 978	5 629	5 963	6 811	7 098
Theoretical VAT base	20 348	22 571	24 361	25 527	28 115	30 362	33 916	36 124	40 088	39 625	39 512
Weighted average VAT rate (%)	15.75	15.66	15.66	16.54	19.00	19.00	19.00	18.73	18.80	18.79	18.78
Theoretical VAT revenue	2 769	3 057	3 299	3 624	4 489	4 848	5 415	5 699	6 343	6 267	6 248

* In year 2010 including statistical discrepancy of EUR 524.7 million   *Source: SO SR, IFP*

2.2. Effectiveness of VAT collection

The effectiveness of VAT collection is, in this case, defined as the ability of the tax administration to enforce the tax liability declared by taxpayers, as well as the tax liability arising from the tax administration's control activities (reassessment of liability after tax audits).

In this phase, the analysis focuses solely on the Tax Directorate of the Slovak Republic because this institution administers a major part of the tax liability which, at the same time, runs the biggest risk of being unpaid. The Customs Administration administers VAT only on import; the enforceability of the tax assessed should be high by definition because the goods are released into circulation only once the tax has been paid.

The effectiveness of collection is monitored in two steps:
• Collection of the tax assessed based on the taxpayer's declaration,
• Collection of the tax assessed additionally based on the tax administrator's activity.

The difference between the total tax assessed and the tax actually paid represents the tax collection loss. Since the calculation should be based on the data of sufficient quality, it is appropriate to separate this loss of receipts from the yet-undeclared tax gap.

2.2.1. Success rate of collection of the tax liability declared by taxpayers

In the first step, the analysis focuses on the difference between the tax assessed based on the taxpayers' self-declaration of tax liability in their tax returns and the actually paid amount attributable to those tax returns, regardless of when the tax is actually paid[7].

VAT - comparison of tax liability assessed and declared between 2005 - 2010 (in millions of EUR)							
	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2005 - 2010**
A. Tax assessed	6 319	7 325	7 992	8 683	7 664	7 730	45 712
B. Tax paid	6 223	7 137	7 779	8 410	7 483	7 657	44 687
C. Difference (A-B)	96	189	213	273	181	73	1 025
Difference, % of tax assessed	1.5	2.6	2.7	3.1	2.4	0.9	2.2

Source: DR SR, IFP

In the period of 2005–2010, taxpayers failed to pay 2.2% of the cumulative tax liability declared in their tax returns. The differences between individual years are considerable. The share of the unpaid tax in the declared tax increased to 3.1% in 2008; the negative trend reverted in 2009 and the share contracted to 0.9% in 2010.

By way of a cross-check, the same comparison was also made for the fiscal (calendar) years, i.e., tax liability assessed and payable in a given year compared with the corresponding payments. The data were taken from the Government Receipts Register which also reflects data from financial statements. According to these data, in 2005-2010 taxpayers failed to pay 1.8% of their tax liability declared in their tax returns. Unlike in the first case, the development of this indicator is stable in time and spans between 1.7% to 1.9%, except for 2006 when it reached 1.4%.

| VAT - comparison of tax liability payable and declared between 2005 - 2010 (in millions of EUR)							
	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2005 - 2010**
A. Tax assessed	5 985	6 905	7 715	8 429	7 529	7 555	44 117
B. Tax paid	5 881	6 807	7 567	8 286	7 383	7 411	43 336
C. Difference (A-B)	104	98	148	142	146	144	782*
Difference, % of tax assessed	1.7	1.4	1.9	1.7	1.9	1.9	1.8

Source: DR SR, IFP

The comparison of both indicators shows that, on average, 1.8-2.2% of the assessed tax remained unpaid in the period of 2005-2010, which means that the collection success rate reaches approximately 98%.

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[7] Data provided by the Tax Directorate of the SR from its information system. They include regular tax returns and supplementary tax returns filed after formal compliance checks.

For future tax gap estimates, consideration is being given to applying calculations based on the tax periods of individual years because this methodology is identical with the ESA95 methodology for the national accounts.

Success of collection of declared tax liability in tax periods (ESA95) and years (cash); in % of tax assessed
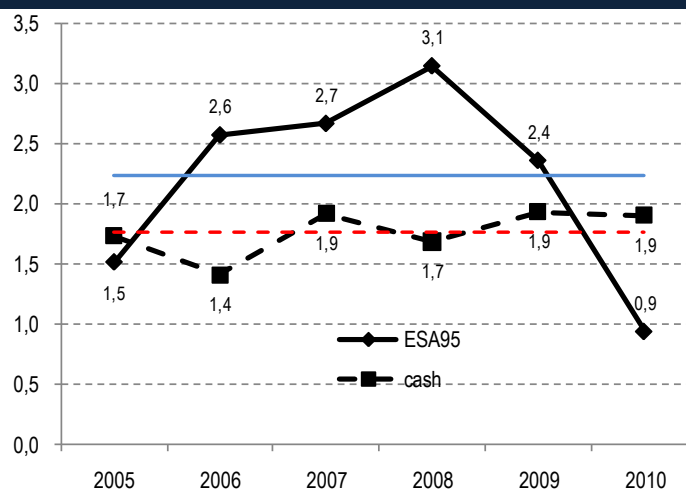
The success rate in the collection of taxes declared in tax returns is also influenced by the activities of the tax administrator performed to enforce the payment of tax arrears, i.e. overdue amounts. These activities include the issuance of a tax collection notice (notice), establishment of a tax lien, enforcement of tax arrears (e.g., in tax execution proceedings), netting of the excess input VAT refund claims against tax arrears or offsetting the excess input VAT refund claims against the tax due.

Statistics on enforced tax arrears are not kept by individual types of taxes, nor are they kept on an accrual basis. **From the total amount of taxes collected by the tax administration in a fiscal year, the tax administrator's activities led to the collection of 4.0% of taxes in 2008, 5.2% of taxes in 2009 and 5.5% of taxes in 2010.** Since the share of the enforced amount in VAT is higher compared to other taxes, in the case of VAT the above share is expected to be approximately 1 p.p. higher.

Tax liability actually paid in 2008 - 2010 (in millions of EUR)	2008	2009	2010
Receipts	8 286	7 383	7 411
of which voluntarily paid	7 872	6 925	6 929
of which paid as a result of enforcement	414	458	482
Tax paid as a result of enforcement as % of all receipts	5,0	6,2	6,5

2.2.2. Success rate in the collection of tax assessed additionally after tax audits

In the second step, the analyses focuses on the effectiveness of collection in respect of the taxes assessed additionally after tax audits. This is a tax liability which taxpayers did not

declare deliberately or the tax audit found an error in their books. **The total amount of the tax assessed additionally by tax authorities following tax audits carried out for the tax periods from 2005 to 2010 represents almost €1.1 billion. To date, taxpayers have only paid €48 million of the total amount, which represents a success rate in the collection of the additionally assessed tax of 4.6%.**

Of the total amount of the additionally assessed tax for the 2005-2010 tax periods, a total of €109 million, or 10.3%, has so far been written off with the underlying tax liability terminated. The additionally assessed tax may be written off and the underlying liability terminated (on the tax administrator's own initiative), for example, in the case of death of a tax debtor whose estate is escheated to the state, or whose tax arrears could not be satisfied from the inheritance; further, as at the date of dissolution of a taxpayer under a court resolution on the completion of restructuring, on the termination of bankruptcy proceedings following the final distribution of proceeds, on the discontinuance of bankruptcy proceedings due to deficiency of assets, etc.

VAT - comparison of tax liability assessed and paid after tax audit between 2005 - 2010 (in millions of EUR)							
	2005	2006	2007	2008	2009	2010	2005 - 2010
A. Tax assessed	151	213	226	275	150	41	1 055
B. Tax paid	15	14	9	7	3	1	48
C. Difference (A-B)	136	199	217	268	147	40	1 006
Difference, % of tax assessed	90,0	93,5	96,2	97,4	98,2	97,4	95,4

Source: DR SR, IFP

Compared to the previous situation, one would expect that the collection success rate will be considerably lower since, in most cases, the reassessed tax represents a tax which the taxpayers did deliberately not report. Therefore, their willingness to pay this tax is very low. **The actual collection success rate for the years 2005 to 2010 is at extremely low levels, which warrants a more in-depth analysis.**

The main causes behind the low success rate in the collection of reassessed taxes, given by the Tax Directorate of the Slovak Republic, include:

- tax audits performed on high-risk taxpayers - audits of taxpayers involved in the chain and carrousel fraud;
- taxpayers that cannot be contacted and do not communicate with the tax administrator - missing traders, or company executives are the so-called "cat's-paws" or "dummies";
- insufficient or absolutely no assets - no interim measures can be imposed;
- taxpayers' poor solvency;
- a shift from the regular tax audit procedure to the procedure of indirect determination of tax liability (does not apply to audits on excessive VAT deductions); i.e., when the taxpayer stops communicating with the tax administrator during the audit, stops fulfilling its statutory obligations (submitting the required documents, evidence, statements), the tax administrator shifts, with respect to the tax base assessment, from the tax audit procedure to the alternative procedure whereby it establishes tax liability indirectly, using the evidence obtained on its own or in cooperation with the taxpayer, e.g., documents submitted upon audit commencement.

The total unenforced portion of VAT presented below is the sum of unenforced VAT from the liability declared and the liability reassessed based on tax audit.

2.3.   Estimate of the tax gap and the total loss in VAT receipts in the years 2000-2010

The tax gap is defined as a difference between the theoretical VAT and the VAT actually paid, net of the collection loss:

- **Total loss of receipts -** includes, in addition to the undeclared tax, also the unpaid tax which has been declared by taxpayers themselves or assessed by the tax authorities.

- **Tax gap –** represents a gap arising as a consequence of undeclared tax liability, hence it is not captured by the tax administration. It does not include the loss of receipts due to the poor payment discipline in respect of the declared/assessed taxes. Hence, it represents the total amount of lost receipts, adjusted for the collection losses.

Due to the unavailability of the output tables, the total amount of lost receipts, calculated according to Method 1, is only available for the years 2000 to 2007. For the years 2008 to 2010, the tax gap was estimated using the correlation of the development in theoretical VAT calculated using the first and second method. However, due to possible changes in the structure of the VAT base, which Method 2 cannot capture, the estimates for the years 2008 to 2010 should be considered indicative. Since the Tax Directorate data on the success rate in the collection of assessed tax cover only the post-2005 period, the tax gap was calculated for the years 2005 to 2010.

The table below includes a summary of the estimates of the total loss in tax receipts for the years 2000-2010 and the tax gap estimate for the years 2005-2010. **The total tax loss amounted to 26.0% of the theoretical VAT on average, which represents an annual tax shortfall of 2.5% of GDP.** In terms of the VAT gap trend, the size of the tax loss expressed as percentage points of the theoretical VAT **has been steadily rising since 2005, reaching 35.9% (3.5% of GDP) in 2010.**

The uncollected tax assessments accounted for 28% of the total tax loss, while the remaining 72% represented undeclared tax liability - the tax gap[8]. **In 2010, the tax gap exceeded 34% of the theoretical VAT, which translates to more than €2.2 billion.** The increase in the total tax loss is rather considerable, driven mainly by the tax gap growth since 2006.

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[8] This applies to the years 2005-2008. The years 2009 and 2010 are affected by that fact that tax audits for this period are still ongoing.

Tax gap and total loss of revenue (millions of EUR)												
	2000	2001	2002*	2003	2004	2005	2006	2007	2008	2009	2010	2000-2010
A. Theoretical VAT revenue	2 879	2 779	3 213	3 574	4 435	4 741	5 485	5 885	6 549	6 534	6 520	52 594
B. Actual VAT revenue (ESA95)	2 168	2 454	2 582	3 031	3 507	3 880	4 104	4 147	4 621	4 221	4 182	38 897
C. Total loss of receipts (A-B)	711	325	632	543	928	861	1 381	1 738	1 927	2 313	2 338	13 697
VAT loss, in % of the theor. VAT rev.	24.7	11.7	19.7	15.2	20.9	18.2	25.2	29.5	29.4	35.4	35.9	26.0
VAT loss, in % of GDP	2.3	1.0	1.7	1.3	2.1	1.7	2.5	2.8	2.9	3.7	3.5	2.5
D. Unenforced liability (success of collection)						232	388	430	541	328	112***	2 031**
Unenf. liab., in % of the theor. VAT rev.						4.9	7.1	7.3	8.3	5.0	1.7***	5.7
Unenforced liability, in % of GDP						0.5	0.7	0.7	0.8	0.5	0.2***	0.6
E. Tax gap (C-D)						629	993	1 307	1 387	1 985	2 226***	8 527**
Tax gap, in % of the theor. VAT rev.						13.3	18.1	22.2	21.2	30.4	34.1***	23.9
Tax gap, in % of GDP						1.3	1.8	2.1	2.1	3.1	3.4***	2.4

* Estimate based on method 2 to calculate the theoretical gap
** Data for the tax gap and unenforced liability is calculated for the period 2005-2010   *Source: IFP*
*** Data for 2010 may not adequately capture maeasures taken by the tax office.

The losses in the years 2000 to 2004, or jumps between these years, could be affected by the size of the actual VAT revenue for the relevant tax period. The tax revenue under the ESA95 methodology for these years does not fully reflect the then applicable method of refunding the excess input VAT claims, but follows the currently applicable rules[9]. **For this reason, it is more appropriate to present the average tax loss for 2000-2004, which amounted to 18.6%. However, it is important to note that the total tax loss was relatively stable over those years and no change in trend has been observed. The tax loss increase became evident only from 2006.**

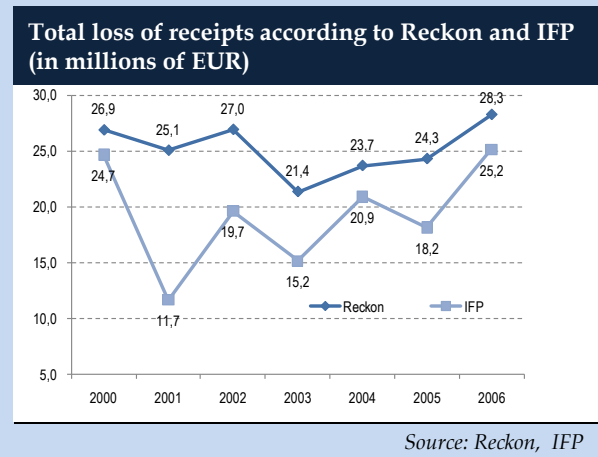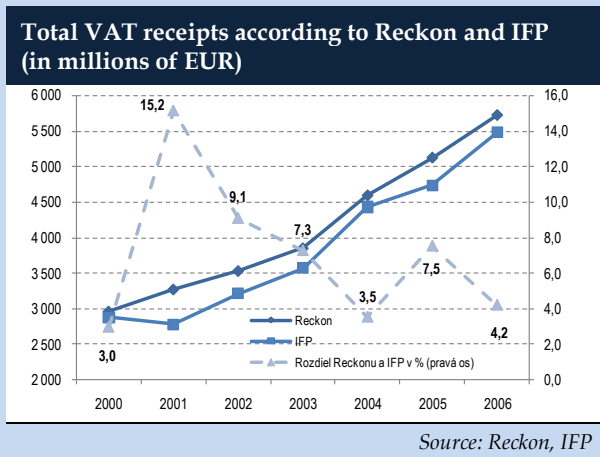**BOX 1: Comparison with the RECKON study results**

Reckon LLP prepared a study for the European Commission in 2009, in which it calculated the tax gap for all EU Member States over the 2000-2006 period. The calculations were based on the data from the use (output) tables for the years 2000 to 2004. The use tables for the 2005-2006 period were estimated by Reckon.

mil. eur	2000	2001	2002	2003	2004	2005	2006	2000-2006
Theoretical VAT - Reckon	2 966	3 276	3 535	3 855	4 597	5 128	5 725	29 083
Theoretical VAT - IFP	2 879	2 779	3 213	3 574	4 435	4 741	5 485	27 106
Difference Reckon – IFP	**88**	**497**	**322**	**281**	**162**	**387**	**241**	**1 977**
Total loss of receipts, % of theoretical VAT - Reckon	26.9	25.1	27.0	21.4	23.7	24.3	28.3	25.3
otal loss of receipts, % of theoretical VAT - IFP	24.7	11.7	19.7	15.2	20.9	18.2	25.2	19.9
Difference Reckon – IFP, p.p.	**2.2**	**13.4**	**7.3**	**6.2**	**2.8**	**6.2**	**3.1**	**5.4**

The theoretical VAT revenue calculated by the IFP is lower compared to that calculated by

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[9] In 2000, the excessive tax deductions were refunded within 30 days of the submission of a tax return; after 2003, taxpayers gradually deducted excessive deductions from their tax liabilities in the subsequent tax periods. Currently, taxpayers make deductions from their tax liabilities in the subsequent tax period; if they cannot do so, tax authorities refund excessive deductions within 30 days of the submission of a tax return for the tax period subsequent to the tax period in which an excessive deduction arose.

Reckon. The exact calculation method used by Reckon is not available to the IFP, but the IFP believe that the calculations were based on the data from the Statistical Office of the Slovak Republic and that they were based on the same assumption as the one used by the Statistical Office to calculate the harmonised VAT own resources base, that is, that the commodities in the passenger cars, parts, components and accessories for motor vehicles and their engines category, and in the assembly services of parts and accessories for motor vehicles category, have a positive impact on the VAT base. Of those items, the IFP took into account only the corresponding portion not entitled to VAT deduction on input, based on the assumption that these products are entitled to deduction.

Total VAT receipts according to Reckon and IFP (in millions of EUR)

Source: Reckon, IFP

Total loss of receipts according to Reckon and IFP (in millions of EUR)

Source: Reckon, IFP

BOX 2: Estimate of the tax gap and the total loss in VAT receipts in the years 2008-2010

Since the data from the use tables for the 2008-2010 period were not available when the analysis was prepared, the tax gap for this period had to be estimated using a different method. The calculation entailed a comparison of the total tax loss established using both methods of the theoretical VAT calculation discussed in the previous chapters. Based on the development, an assumption was formulated under which the share of the total tax loss in the tax loss according to Method 2 will be the same for the 2008-2010 period as in 2007 (108.4%).

Total loss of receipts based on method 1 and 2 (% of theoretical VAT)

Source: IFP
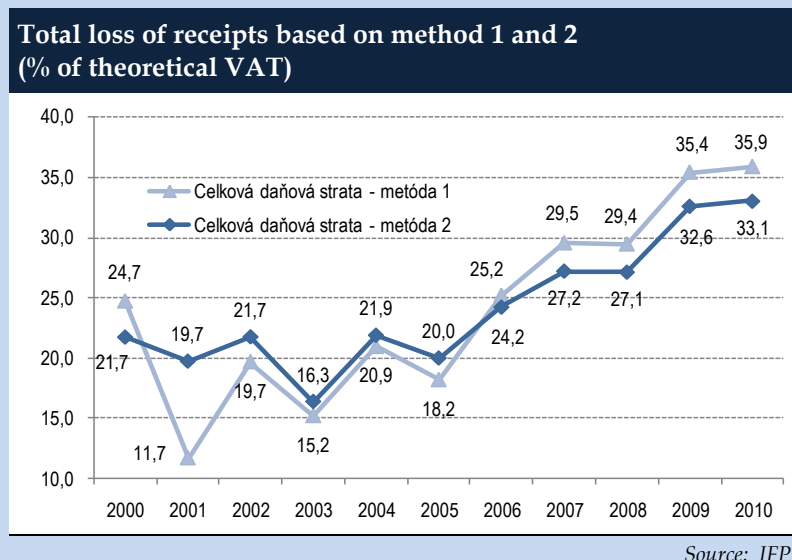
2.4.   International comparison

The existing literature does not allow for a comparison of the size of the tax loss across individual EU Member States based on detailed calculations using the input-output tables. The study prepared by Reckon on all EU Member States is the only exemption. Its drawback is that the latest data available for Slovakia are from the year 2004, while the figures for 2005 and 2006 are only estimates. None of the existing studies is regularly updated.

Therefore, the OECD and the European Commission seek to provide information, using simplified approaches at least, **as to whether there is a room in a given country to increase its VAT revenue without raising the basic VAT rate.** Calculations draw on a narrowly defined macroeconomic base, account is usually taken of household consumption only (the OECD also uses government consumption and NPISH final consumption) and reduced VAT rates are disregarded. The overall difference between the calculated theoretical VAT and the actual VAT can thus be attributed to two factors:
   1.   tax evasion and avoidance (including low collection success rate)
   2.   a large number of goods and services to which reduced VAT rates apply or which are exempt from VAT.

Since these approaches do not make it possible to identify the VAT lost due to tax evasion and avoidance, the results must be interpreted with extreme caution. A low revenue, compared to the theoretical revenue, does not necessarily have to indicate tax evasion, it may simply reflect the way in which the legislative framework is setup.

However, if information about the legislative framework in individual countries is available, it is possible to draw certain conclusions. For example, a broad tax base is assumed for Slovakia, with almost uniform tax rate of 19%. The legislative framework would thus indicate a higher tax revenue compared to the majority of EU Member States where the number of goods and services falling under reduced VAT rates is relatively higher. If it is not so, the likely cause may include a higher extent of tax evasion and avoidance.

> **BOX 3: Indicators calculated by the European Commission and OECD**
>
> **The European Commission** measures the "VAT reduced rate and base indicator" as a difference between the standard VAT rate applied in the country (irrespective of any reduced rates) and the VAT component representing the implicit tax rate on consumption (the share of VAT revenue in the final household consumption).
>
> A low value of this indicator implies that the VAT base is very close to private consumption; hence, the reduced VAT rates and exemptions are of minimum importance in the system. On the other hand, the greater the indicator, the greater the difference between the final consumption and the tax base (a major part of private consumption is outside the VAT base), or the larger the incidence of tax evasion and avoidance.
>
> In 2009, the value of this indicator ranged from 11 p.p. in Latvia to -1 p.p. in Luxembourg. Slovakia had 8 p.p., the tenth highest value of this indicator.

VAT reduced rate and base indicator 2009 (p.p.)
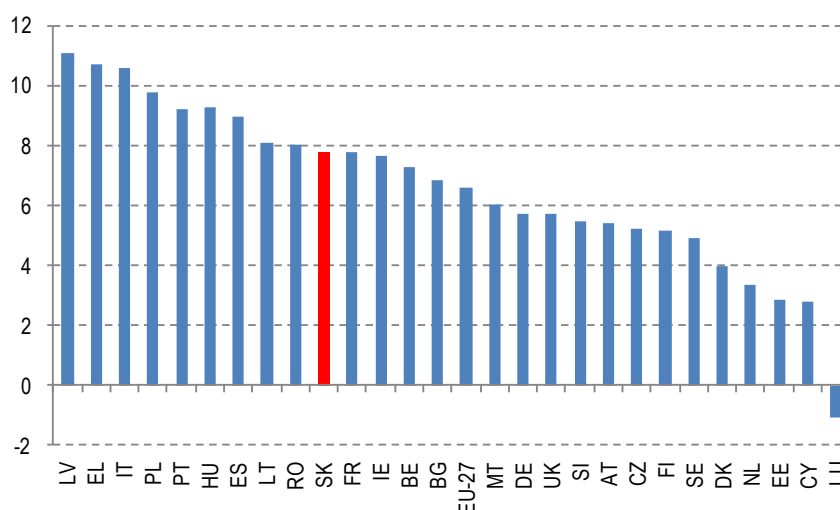
The **OECD** employs a very similar approach, calculating theoretical VAT as a VAT base rate applied to a defined macroeconomic base. The ratio of actual VAT revenue to theoretical VAT revenue is then compared for individual countries. The higher the ratio, the more effectively the VAT collection system is set.

For the sake of quantifying tax evasions only, thus removing the shortcomings of the methods applied by the Commission and the OECD, two factors had to be improved:

- **The tax base had to be defined more precisely -** the tax base is calculated on the basis of Method 2 for the calculation of theoretical VAT revenue, as described in part 2.1.2; i.e., using the top-down macroeconomic approach. All the necessary data were available from the Eurostat for the years 2005 and 2009[10].

- **The setup of the legislative framework in individual countries had to be captured** - weighted average VAT rates of individual countries were used in the calculation. They were obtained from VAT reports for the calculation of the harmonised VAT own resources base. The rates are calculated on the basis of the applicable legislation (i.e., inclusive of reduced VAT rates and exemptions), but on the output (use) tables from two years ago. Since there is no reason to assume any major changes in the structure of demand in the economy over two years, the calculated rates should be very close to the actual figures for a given year.

The comparison then focused on the ratio of the actual VAT revenue in individual EU Member States to their theoretical VAT revenue. In 2005, Slovakia's indicator was 7.9 p.p.

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[10] Due to the incomplete data, the following adjustments were made:
- Household GFCF for Bulgaria - the figures for the year 2008 and 2009 were added based on the 2007 data (as a share in GDP);
- the data on household GFCF for Denmark, Germany, Ireland, Malta, Sweden and the UK were added as an average of remaining countries;
- a weighted tax rate for 2005 for Denmark was added on the basis of the 2008 value.

worse than the EU average (exclusive of Slovakia), the result being the eighth worst among EU Member States. In 2009, the negative difference in this indicator between Slovak and the EU average increased to 15.4 p.p., ranking Slovakia the fifth worst among EU Member States.

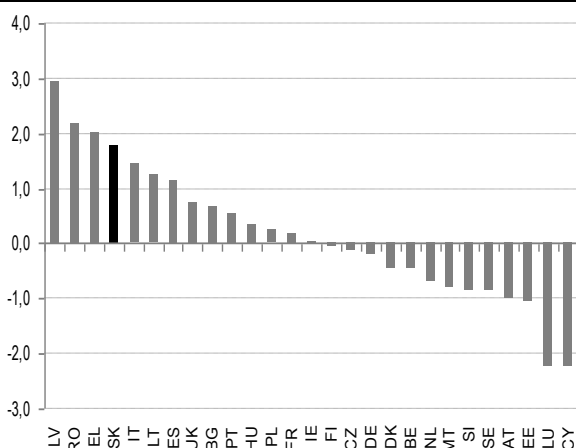| Share of total VAT receipts on theoretical in EÚ-27, 2005 (in %)	Share of actual VAT receipts on theoretical in EÚ-27, 2005 (in %)
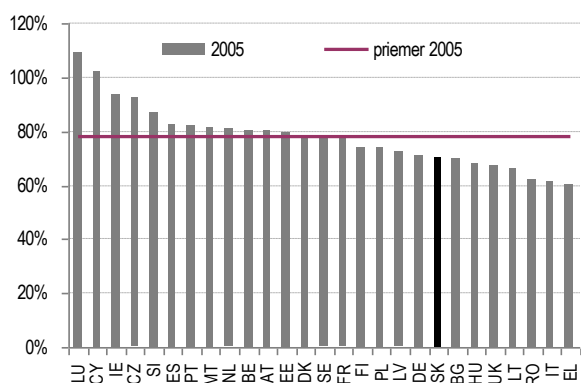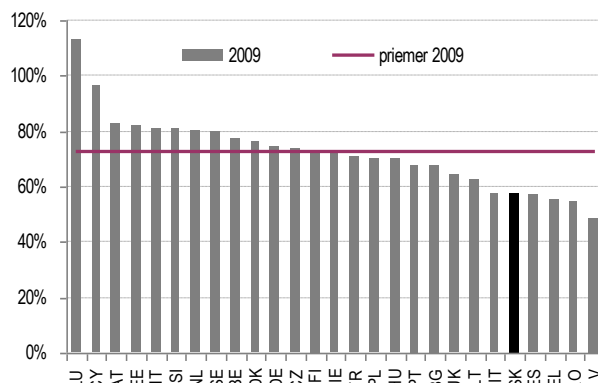
Source: Eurostat, IFP   *Source: Eurostat, IFP*

In order for Slovakia to reach the EU average ratio (exclusive of Slovakia)of the actual VAT revenue to the theoretical VAT revenue in 2009, the VAT revenue would have had to increase by 1.8% of GDP; this is by 0.9 p.p. more than it would have been necessary in 2005 in order to reach the EU average for 2005.

Change in actual VAT receipts needed to achieve average share of actual VAT receipts on theoretical VAT in EÚ-27, 2009 (in % of GDP)	Difference in change between 2009 and 2005 (in p.p.)
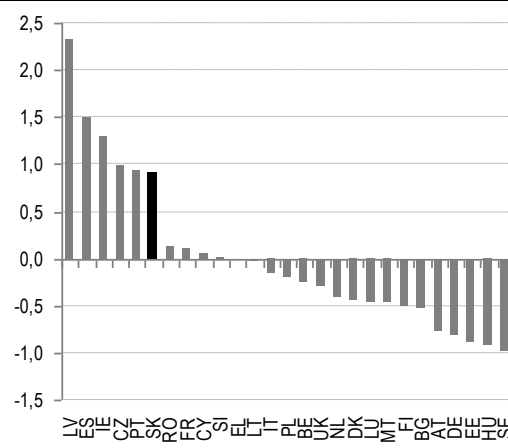
Source: Eurostat, IFP   *Source: Eurostat, IFP*

The foregoing calculations are based on the assumption that VAT revenue increases in direct proportion to the increase in VAT rates. This assumption is correct from a theoretical point of view since there is no reason why it should not be so. Any potential deviation in the actual revenue is therefore attributed to tax evasion and avoidance.

However, if we want to find out by how much the existing tax loss may be reduced, taking into consideration the actual effectiveness of VAT collection in other countries, it is also

advisable to take account of the fact that with the varying amount of the average VAT rate the actual ability to collect VAT also varies. It is generally assumed that with the increasing average VAT rate, the VAT revenue is likely to drop to 1 p.p. of the rate.
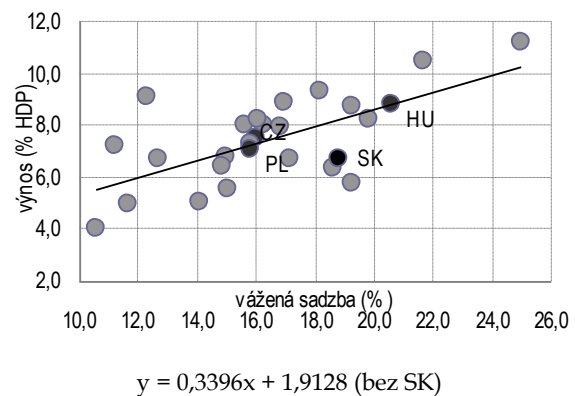
The graphs displayed below show the relation between the weighted average VAT rate in the EU Member States and the adjusted actual VAT revenue. The adjusted actual VAT revenue is the actual revenue published by Eurostat adjusted to the same size of the VAT base as a proportion of GDP (adjusted to Slovakia's level). This step removed distortions stemming from the different size of the VAT base as a percentage of GDP in individual countries, which enabled us to make the following comparison.

Weighted VAT rate and receipts in EÚ-27, 2005 (equal base, % of GDP)	**Weighted VAT rate and receipts in EÚ-27, 2009 (equal base, % of GDP)**
y = 0,2789x + 2,9796 (bez SK)	y = 0,3396x + 1,9128 (bez SK)
Source: Eurostat, IFP	*Source: Eurostat, IFP*
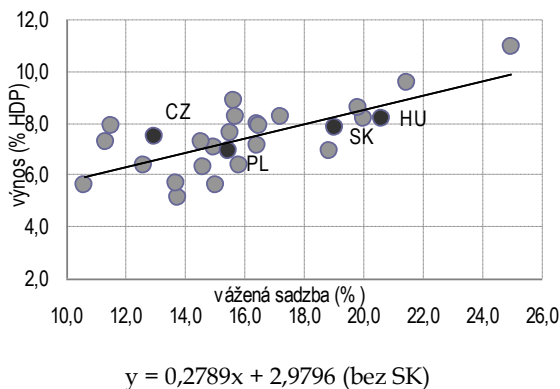
In 2005, the VAT revenue in Slovakia was 0.4 p.p. lower than the average, which was the eighth worst result from among EU Member States. In 2009, the negative difference between the actual revenue and the average level of theoretical revenue increased to 1.6 p.p., with Slovakia ending fourth from the bottom.
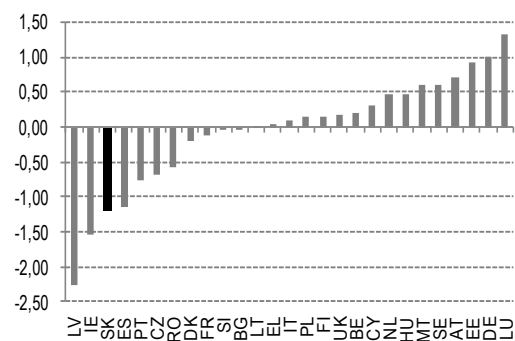
Between 2005 and 2009, the difference between Slovakia's VAT revenue and the average EU revenue dropped by 1.2 p.p., which made Slovakia one of the countries where the effectiveness of VAT collection deteriorated most significantly compared to other EU Member States.

Difference in receipts vs trend in 2009 (p.p.)	**Change in difference in receipts vs trend in 2005-2009 (p.p.)**
Source: IFP	*Source: IFP*
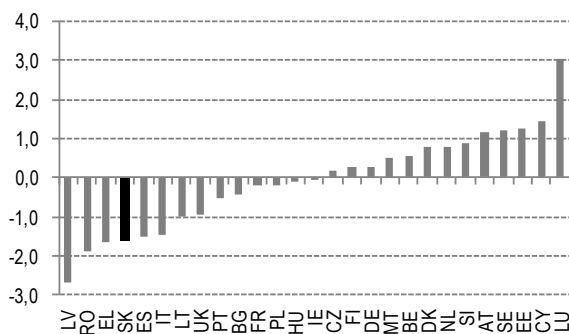
BOX 4: Relationship between the average VAT rate and actual revenue

The following graph shows the relationship between the average VAT rate and the actual VAT revenue. It shows the amount of VAT revenue as a percentage of GDP derived from one percentage point of the applicable VAT rate. In other words, while one percentage point can yield a VAT revenue of up to 0.6% of GDP with the VAT rate set at 7%, if the VAT rate increases to 26% the yield derived from one percentage point is only 0.4% of GDP (according to the 2009 data). Hence, the actual VAT collection decreases as the average weighted VAT rate increases.

VAT revenue per 1 pp of VAT rate (% of GDP, 2005 and 2009)
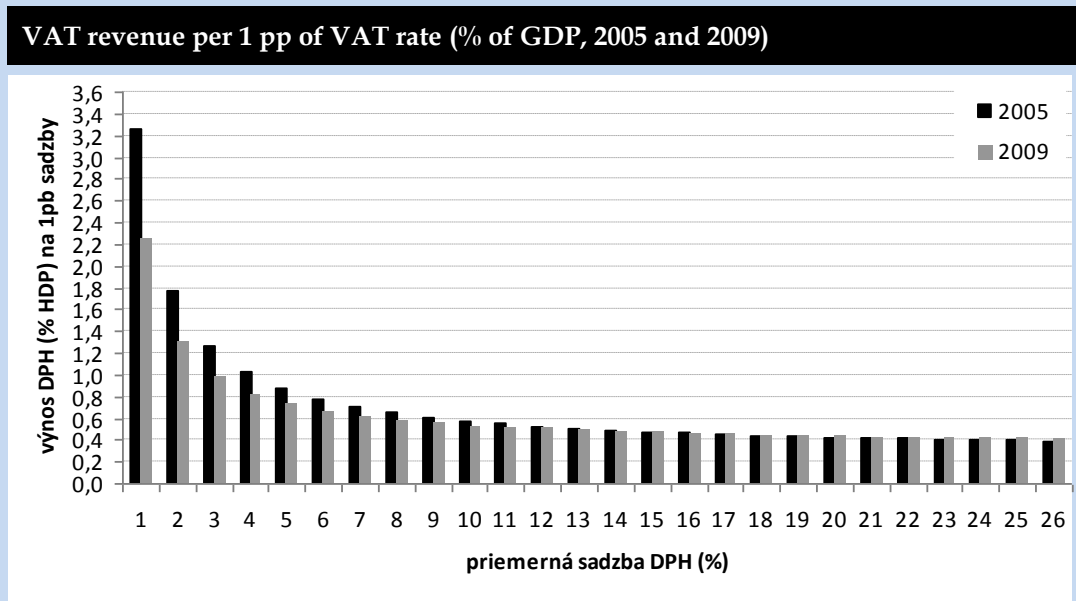
Source: IFP

When interpreting the approaches employed by the Commission and the OECD, a country with an above-average VAT rate cannot in fact achieve the same level of VAT collection as the EU average, which is currently primarily influenced by the countries applying a lower average VAT rate. In other words, the effectiveness of VAT collection in these countries is most likely to decrease should they increase their VAT rates[11].

## 2.5.   Summary of the results for 2000-2010

Based on the previous chapters, a number of conclusions can be drawn with respect to the amount of the total tax loss in VAT receipts, the tax gap, and the effectiveness of tax authorities:

- The total tax loss in the years 2000-2005 remained stable at about 18% of the theoretical VAT. From 2006, the VAT loss has been rising steadily and reached 35.9% in 2010.

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[11] This conclusion follows from results of the analysis. However, the question is whether the said decline in VAT collection would occur if all EU Member States applied uniform VAT rates. It is possible that the VAT revenue would be allocated differently among the countries, depending on the causes of the existing differences in the effectiveness of VAT collection.

- In absolute terms, the 2010 loss of VAT receipts reached €2.3 billion, which represents 3.5% of GDP.

- From the total tax loss, the tax administration is able to capture and identify less than 30%. The remaining 70% represents the tax gap, i.e., the tax liability which has not yet been identified.

- The effectiveness of collection of the tax liability declared by taxpayers themselves reaches approximately 98%. On the other hand, the tax administration is able to collect only about 5% of the tax liability reassessed based on tax audits, which can be considered an extremely low success rate of collection.

- International comparisons show declining effectiveness of VAT collection in Slovakia. **In 2009, the variance against the EU average reached 1.6% of GDP, which represents an increase by 1.2% of GDP compared to 2005.** In other words, if the effectiveness of tax collection were on par with the EU average, the basic VAT rate could be 4.7 p.p. lower (14.3% in 2009) to generate the current level of VAT revenue.

- **The total tax loss of 3.5% of GDP in 2010 can possibly be reduced by at least 1.6% of GDP (€1.1 billion) to 1.9% of GDP through various measures, which would correspond to the average effectiveness of VAT collection in EU Member States and V-3 countries for 2009. The total tax loss would thus be reduced by as much as 45%.**

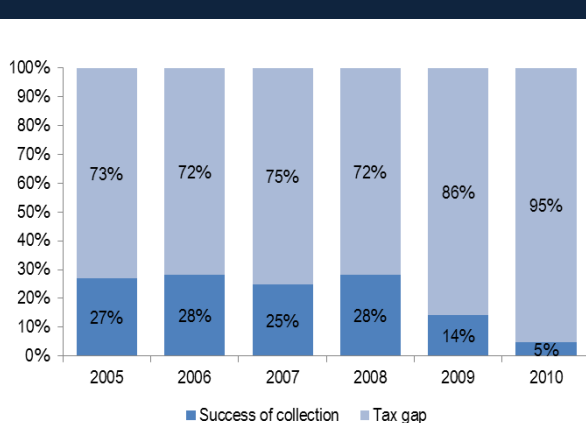**Total loss of receipts (in millions of EUR)**
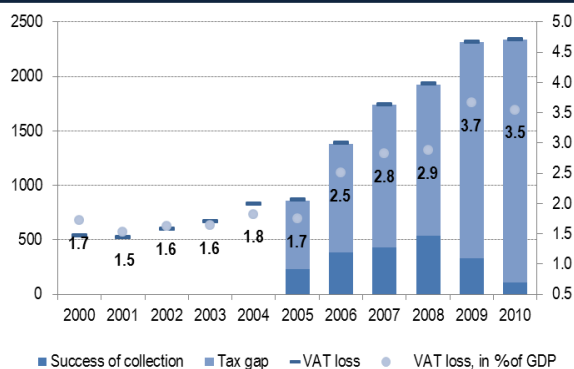
Source: DR SR, IFP

Total loss of receipts (% of theoretical VAT)

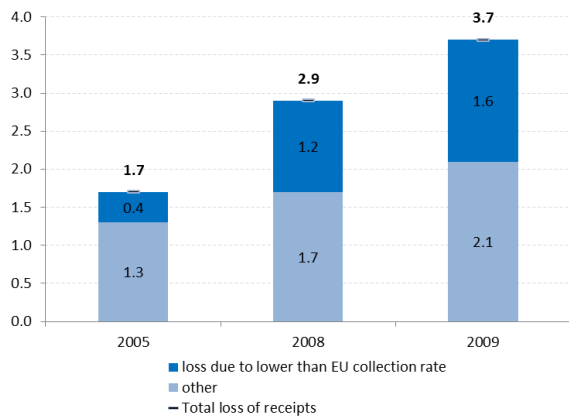*Source: DR SR, IFP*

Structure of total loss (in %)

Source: DR SR, IFP

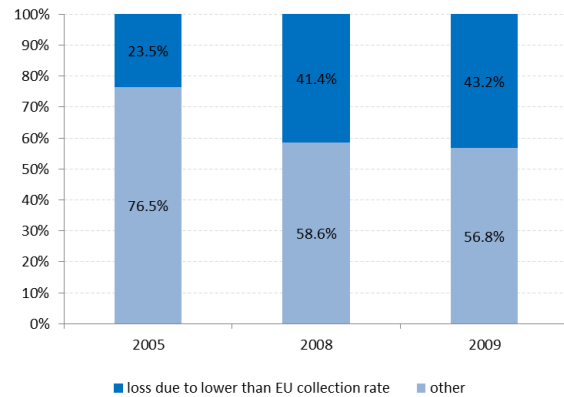**Success of collection of assessed liability (in % of tax assessed)**

Source: DR SR, IFP

Legend:
- loss due to lower than EU collection rate
- other
- Total loss of receipts

Source: IFP

Legend:
- loss due to lower than EU collection rate
- other

Source: IFP

Legend:
- Gap as a result of lower than EU collection rate - in terms of VAT rate
- Basic VAT rate (excluding the effects of lower than EU collection rate)
- Statutory basic VAT rate

Source: IFP

Legend:
- nižšia efektívnosť voči EÚ (v mil. eur)
- nižšia efektívnosť voči EÚ, pravá os (v % HDP)

Source: IFP

27
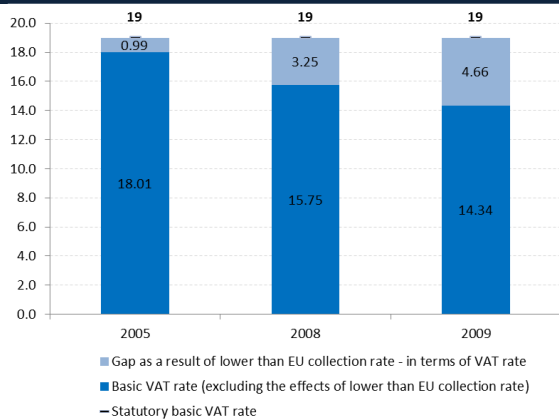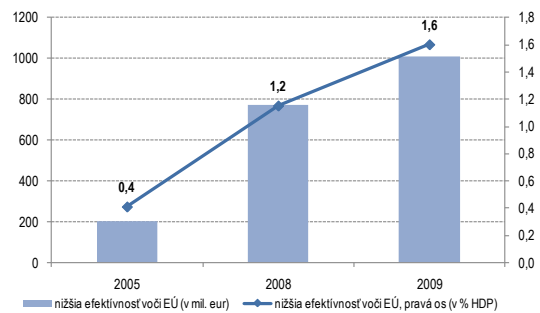
3. Conclusions and recommendations

The quantification of the tax gap presented in this document is based on the macroeconomic approach which, apart from its benefits, has also several drawbacks. The accuracy of the estimate fully depends on the quality of data available from the national accounts, which are often extrapolated using various statistical methods. Moreover, the results of this analysis only confirm what has already been evident from a standard comparison of the VAT revenue development and a simplified macro base (household consumption), while additional information obtained from the analysis is the quantification of the total tax loss and the tax gap.

If the objective is to reduce the size of the tax loss, purely macroeconomic approaches without further micro-analyses do not practically provide any additional information that could be used for the identification of tax evasion and avoidance. For this reason, it is essential for the forthcoming analytical work to focus on individual data for individual taxpayers and identify the discrepancies between the information reported (e.g. Corporate Income Tax Returns versus value added for the national accounts).

Regular reporting on the results attained should be commonplace in order to assess the effectiveness of approaches and measures applied. At this junction, it is also necessary to make clear who bears responsibility for individual activities.

Under Commission Decision 98/527/EC on the treatment for national accounts purposes of VAT fraud, all EU Member States, including Slovakia, are obliged to calculate the size of VAT evasions. The responsibility for the calculation of VAT evasions lies with the Statistical Office of the Slovak Republic which should closely cooperate with the MFSR and the Tax Directorate of the Slovak Republic.

The Tax Directorate and the Customs Directorate of the Slovak Republic posses an enormous number of individual data, which are already now used to identify risky taxpayers, sectors, etc. Linking this data with the data reported under surveys conducted by the Statistical Office would help broaden and, at the same time, more accurately identify risky taxpayers. Close cooperation and exchange of information are required in this regard between the Statistical Office, the Tax Administration and the MFSR (IFP).

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