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Study to quantify and analyse the VAT Gap in the EU member states

2015 Report

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This report is one of the last research works of Luca Barbone, former CASE President and CASE Fellow, who passed away unexpectedly on 1 September 2015

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List of Acronyms and Abbreviations

CASE	Center for Social and Economic Research (Warsaw)
CPA	Statistical Classification of Products by Activity in accordance with Regulation (EC) No 451/2008 of the European Parliament and of the Council of 23 April 2008 establishing a new statistical classification of products by activity
CPB	Netherlands Bureau for Economic Policy Analysis (Central Planning Bureau)
ESA95	European System of Accounts 1995 in accordance with Council Regulation (EC) No 2223/96 of 25 June 1996 on the European system of national and regional accounts in the Community
ESA10	European System of Accounts 2010 in accordance with Regulation (EU) No 549/2013 of the European Parliament and of the Council of 21 May 2013 on the European system of national and regional accounts in the European Union
EU-26	Current Member States of the European Union except for Croatia and Cyprus
EU-28	Current Member States of the European Union
GDP	Gross Domestic Product
GFCF	Gross Fixed Capital Formation
HMRC	Her Majesty's Revenue and Customs
MS	Member States
NACE Rev. 2	Statistical Classification of Economic Activities in the European Community in accordance with Regulation (EC) No 1893/2006 of the European Parliament and of the Council of 20 December 2006 establishing the statistical classification of economic activities NACE Revision 2 (also referred to as NACE-2 or NACE2)
NPISH	Non-Profit Institutions Serving Households
OECD	Organisation for Economic Cooperation and Development
o/w	Of which
TAXUD	Taxation and Customs Union Directorate-General of the European Commission
UK	United Kingdom
VAT	Value Added Tax
VTTL	VAT Total Tax Liability
VTL	VAT Tax Liability
VRR	VAT Revenue Ratio

The authors

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Executive summary

This report provides estimates of the VAT Gap for 26 EU Member States for 2013, as well as revised estimates for the period 2009-2012. It is a follow-up to the report “Study to quantify and analyse the VAT Gap in the EU-27 Member States”¹, published in September 2013 (hereafter: 2013 Report), and to the report “2012 Update Report to the Study to Quantify and Analyse the VAT Gap in the EU-27 Member States”², published in October 2014 (hereafter: 2014 Report). As in previous reports, it was not possible to include estimates for Croatia and Cyprus, due to as-yet-incomplete national account statistics for the two countries.

The VAT Gap is an indicator of the effectiveness of VAT enforcement and compliance measures, as it provides an estimate of revenue loss due to fraud and evasion, tax avoidance, bankruptcies, financial insolvencies as well as miscalculations. As the VAT Gap in this study is based on a top-down approach, it does not readily lend itself to be deconstructed according to industrial sectors or other criteria (territorial, professional), and can be best used as a diagnostic tool in the context of its evolution over time.

As discussed in previous reports, the VAT Gap is defined as the difference between the amount of VAT actually collected and the VAT Total Tax Liability (VTTL), in absolute or percentage terms. The VTTL is an estimated amount of VAT that is theoretically collectable based on the VAT legislation and ancillary regulations. This report calculates, for each country the VTTL on the basis of national accounts, by mapping information on standard, reduced rates and exemptions onto data available on final and intermediate consumption, as well as gross fixed capital formation, from national accounts and use tables. Thus, the quality of the VAT Gap estimates depends on the accuracy and completeness of national accounts data and use tables.

The year 2013 saw a continuing overall unfavourable economic environment, as the GDP of the European Union was nearly stagnant. This contributed to a slowdown of nominal final consumption and of other economic aggregates that form the basis of the Value Added Tax.

Six countries applied changes to standard or reduced rates in 2013, marking a relatively stable policy environment.

During 2013, the overall VAT Total Tax Liability (VTTL) for the EU-26 Member States grew by about 1.2 percent, while collected VAT revenues rose by 1.1 percent. As a result, the overall VAT Gap in the EU-26 saw an increase in absolute values of about Euro 2.8 billion, to reach Euro 168 billion³. As a percentage, the overall VAT Gap stayed constant at 15.2 percent. The median VAT Gap rose by 1.6

¹ http://ec.europa.eu/taxation_customs/resources/documents/common/publications/studies/vat-gap.pdf

² http://ec.europa.eu/taxation_customs/resources/documents/common/publications/studies/vat_gap2012.pdf

³ The 2009-2012 estimates were revised from those in the 2014 Report, as discussed in Box 2.2.

percentage point, to reach 13.9 percent.⁴

In 2013, Member States' estimated VAT Gaps ranged from the low of 4 percent in Finland, the Netherlands and Sweden, to the high of 41 percent in Romania. Overall, 15 Member States decreased their VAT Gap, with the largest improvements noted in Latvia, Malta and Slovakia. 11 Member States saw an increase in the VAT Gap, generally of small magnitudes, with the largest deteriorations in Estonia and Italy.

This report also provides new and expanded evidence on the Policy Gap for the EU-26. The Policy Gap is an indicator of the additional VAT revenue that a Member State could theoretically collect if it applied standard rate to all consumption of goods and services supplied for consideration. We provide here estimates of the Policy Gap adjusted to take into account items that could not easily be taxed even in an "ideal" system (imputed rents, public goods, financial services). The results moderate views of the relative importance of reduced rates and exemptions in reducing the revenue potential of VAT, and suggest that better enforcement remains a key component of any strategy of improvement of the VAT system.

The results of this report and the underlying data were presented to Member States in advance of publication and discussed on several occasions with the representatives of Member States. Deviating approaches and views of Member States are noted in the relevant country section in Chapter 3. The authors are grateful for the constructive cooperation and helpful input of Member States.

⁴ For 2012, the VAT Gap in absolute terms is estimated at Euro 165 billion against Euro 177 billion in the 2014 Report, and in percentage terms, at 15.2 percent in contrast to 16 percent. The reasons for the revisions in the estimates are discussed in Box 2.2.

1. Background: Economic and Policy Context in 2013

1.1. Introduction

Studies have shown that the behaviour of the VAT Gap (the difference between the VAT revenues theoretically established by legislation, or VTTL, and actual collections) is influenced by a number of economic variables as well as by policy actions, through the influence that these factors have on both the growth of the theoretical VAT revenue on the one hand, and the capacity and willingness to pay by taxpayers on the other hand. The VAT Gap is sensitive to the economic cycle (as declines in real GDP make it more difficult for some taxpayers to pay VAT obligations), to growth of nominal consumption (which is the most important base of the VAT), as well as to rate changes (which correspondingly change the VTTL, but may also affect incentives not to pay) and other parameters (such as changes in exemptions or shifts in the applicability of reduced rates). These elements are briefly discussed in this Chapter.

1.2. Economic Conditions in the EU during 2013

During 2013, the European Union (EU-28) experienced a minimal growth rate in GDP (0.1 percent), with a much differentiated performance across countries (see Figure 1.1 and Table 1.1).

Seventeen Member States saw negative GDP growth, while the rest saw a positive but sometimes sharply reduced rate of growth. As was the case in 2012, Latvia registered the highest growth rate in the EU, at 4.2 percent, while Cyprus marked the sharpest decline in GDP, at -5.4 percent.

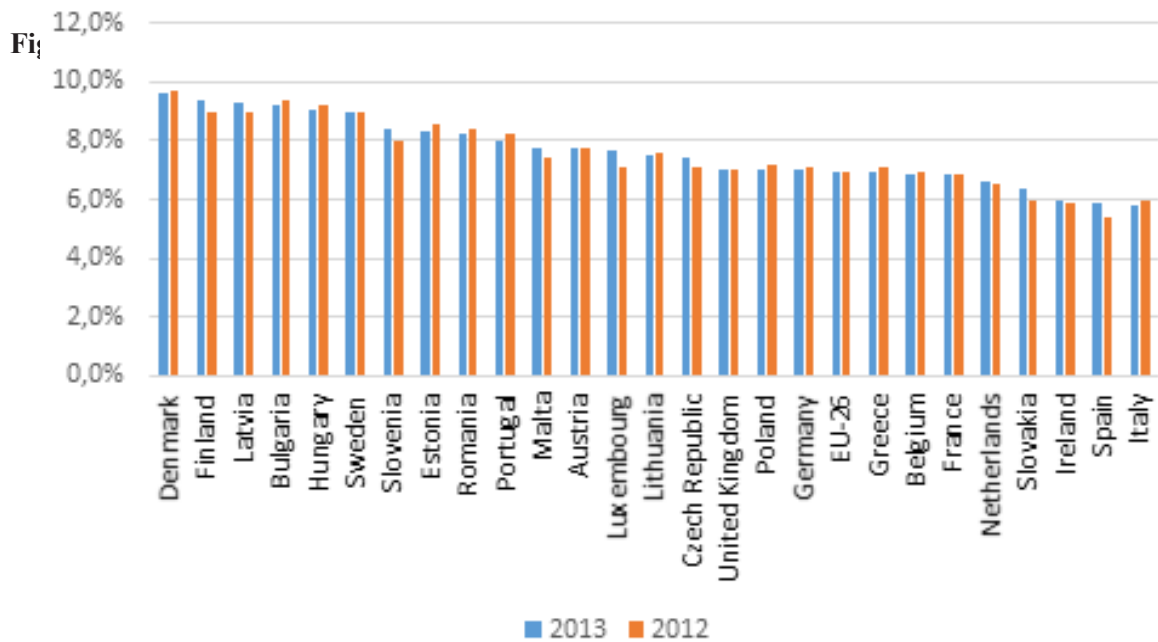
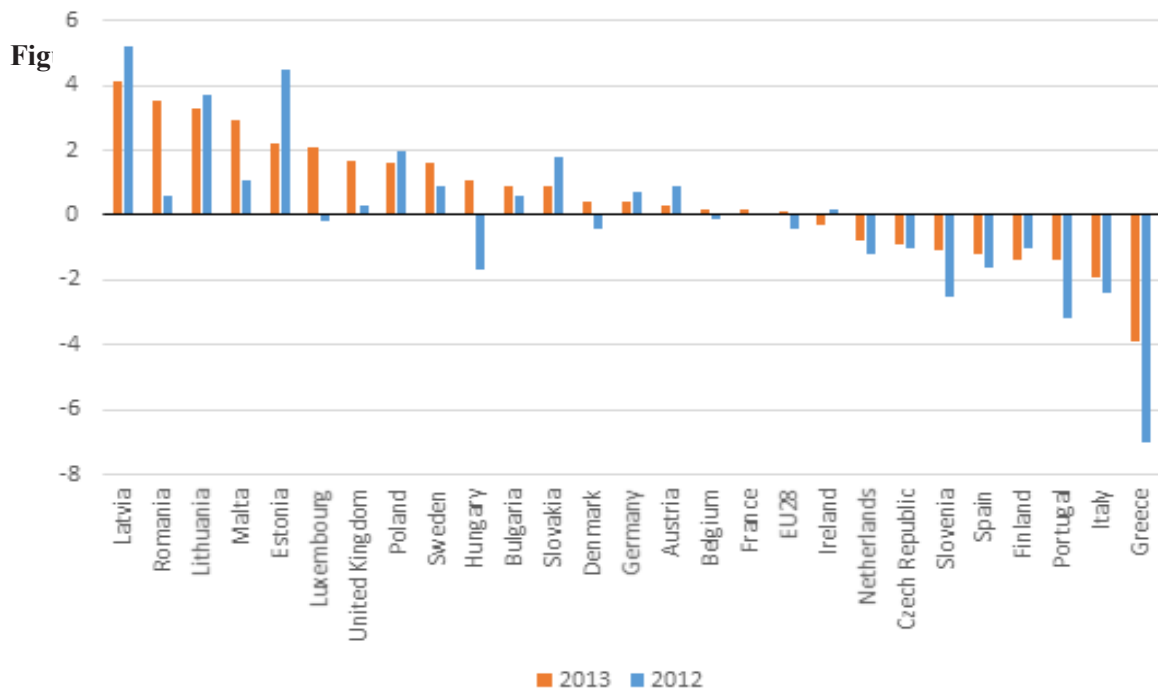
Growth of nominal final consumption was positive in most countries, except for Bulgaria, Cyprus, Greece, Italy, Portugal, Slovenia, and Spain (see Table 1.1). For these countries this development tended to result in lower estimated VAT liability, when not counteracted by policy changes, as discussed in Section 1.3 below and in Chapter 3.

Overall, VAT revenues as a percentage of GDP remained virtually constant, at 7 percent of GDP for the EU-26. However, the behavior of this ratio was split evenly, with half of the countries experiencing an increase and half a decline (see Figure 1.2). For the EU-26 in this report, the VAT/GDP ratio in 2013 ranged from 9.6 percent in Denmark to 5.8 percent in Italy and Spain.

Table 1.1. Real and Nominal Growth in the EU-28 in 2013

	Real GDP Growth (%)	Nominal Growth (%)			
		GDP	Final Consumption	GFCF (Total)	Intermediate Consumption
Austria	0.2	1.7	2.2	0.04	1.0
Belgium	0.3	1.8	2.3	-1.1	0.0
Bulgaria	1.1	0.3	-1.6	-0.8	-3.3
Croatia	-0.9	-0.9	0.4	-2.4	-1.0
Cyprus	-5.4	-6.7	-6.8	-17.4	-7.0
Czech Republic	-0.7	-2.3	1.4	-6.5	-3.7
Denmark	-0.5	0.9	1.1	1.0	0.7
Estonia	1.6	6.3	8.3	7.3	7.1
Finland	-1.3	1.1	1.5	-4.0	-1.1
France	0.3	1.1	1.3	-0.6	0.7
Germany	0.1	2.2	2.7	0.8	0.4
Greece	-3.9	-6.1	-7.4	-10.1	-6.2
Hungary	1.5	1.9	2.6	6.2	0.5
Ireland	0.1	1.2	2.0	-1.8	0.8
Italy	-1.7	-0.4	-1.2	-5.3	-3.1
Latvia	4.2	4.7	5.7	-3.2	2.9
Lithuania	3.3	4.9	4.7	10.1	-1.0
Luxembourg	2.1	3.4	4.3	-3.9	10.3
Malta	2.8	4.8	3.0	4.8	1.8
Netherlands	-0.8	0.3	0.0	-3.9	-1.2
Poland	1.7	2.6	2.0	-0.7	0.4
Portugal	-1.6	0.6	-0.1	-7.4	0.9
Romania	3.4	7.8	5.7	-6.8	1.5
Slovakia	1.4	2.0	1.6	-2.3	-1.3
Slovenia	-1.0	0.4	-2.0	2.9	-1.6
Spain	-1.2	-0.6	-0.8	-6.7	-3.2
Sweden	1.3	3.1	3.4	0.6	3.2
United Kingdom	1.7	-1.2	3.6	0.2	-1.3
EU-28	0.1	0.7	0.6	-1.7	0.7

Source: Eurostat. For Ireland, Croatia, Portugal, Sweden and UK, the growth of Intermediate Consumption is estimated through the growth in gross value added.



1.3. VAT Regime Changes

The year 2013 saw very limited changes to the VAT rates of Member States, with six of the 28 Member States implementing changes to the VAT rates: Croatia, Cyprus, Czech Republic, Finland, Italy and Slovenia (see Table 1.2). Luxembourg remains the Member State with the lowest standard rate (15 percent), and Hungary the highest at 27 percent. The median standard rate is 21 percent.

Table 1.2. VAT Rate Structure as of 31 December 2013, and Changes during 2013

EU Member State	Standard Rate (SR)	Reduced Rate(s) (RR)	Super Reduced Rate	Parking Rate	Changes during 2012
Austria	20	10	-	12	..
Belgium	21	6 / 12	-	12	..
Bulgaria	20	9	-	-	..
Croatia	25	5/10			RR 0/10 to 5/10
Cyprus	18	5 / 8	-	-	SR 17 to 18
Czech Republic	21	15	-	-	SR 20 to 21, RR 14 to 15
Denmark	25	-	-	-	..
Estonia	20	9	-	-	..
Finland	24	10 / 14	-	-	SR 23 to 24, RRs 9/13 to 10/14
France	19.6	5.5 / 7	2.1	-	..
Germany	19	7	-	-	..
Greece	23	6.5 / 13	-	-	..
Hungary	27	5 / 18	-	-	..
Ireland	23	9 / 13.5	4.8	13.5	..
Italy	22	10	4	-	SR 21 to 22
Latvia	20	12	-	-	..
Lithuania	21	5 / 9	-	-	..
Luxembourg	15	6 / 12	3	12	..
Malta	18	5 / 7	-	-	..
Netherlands	21	6	-	-	..
Poland	23	5 / 8	-	-	..
Portugal	23	6 / 13	-	13	..
Romania	24	5 / 9	-	-	..
Slovakia	20	10	-	-	..
Slovenia	22	9.5	-	-	SR 21 to 22, RR 8.5 to 9.5
Spain	21	10	4	-	..
Sweden	25	6 / 12	-	-	..
United Kingdom	20	5	-	-	..

Source: TAXUD 2014.

2. The VAT Gap in 2013

2.1. Methodological Observations

As discussed in previous reports, the VAT Gap is defined as the difference between the amount of VAT actually collected and the VAT Total Tax Liability (VTTL), in absolute or percentage terms. The VTTL is an estimated amount of VAT that is theoretically collectable based on the VAT legislation and ancillary regulations. The VTTL is calculated with a “top-down” methodology, based on national accounting. It maps information on standard, reduced rates and exemptions onto data available on final and intermediate consumption, as well as gross fixed capital formation, from national accounts and use tables. In Box 2.1 we review a number of methodological objections that have been voiced in recent past with regard to the top-down approach utilized in our calculations.

The “top-down” approach underlying the calculations of the VTTL is sometimes contrasted with (or complemented by) the so-called “bottom-up” approach, which is based on detailed examination of individual tax returns and audits, to ascertain the extent of non-compliance. This approach, which can have tremendous diagnostic value for the tax administration, is much more time- and resources-consuming, and is not immune from shortcomings (for instance, dealing with unregistered taxpayers). Ideally, both approaches could be used to complement each-other’s indications.

For more details on the methodology, see the 2013 Report and the 2014 Report.

During 2014, EU Member States began the transition of their national accounts to ESA10 standards (see Eurostat 2013). The transition is ongoing, and it will result in several changes to estimates of consumption, investment and GDP for most or all EU countries. As the transition is not yet complete, and Use tables according to ESA10 standards have not yet been produced for most Member States, this update used the ESA95-based national accounts published by Eurostat. Publication of ESA95 data is to be discontinued starting with 2014 data, and hence any future updates will need to reconcile the ESA95 and ESA10 databases.

Box 2.1. Methodological Objections to the Top-down Approach

A number of methodological objections have been voiced with regards to the Top-down approach methodology used in this report and elsewhere. Their common root stems from the fact that National accounts data are not produced for tax monitoring purposes, and hence a degree of approximation is necessary to calculate the VTTL. Here we review three objections: (i) the size of the informal economy and its impact on the estimated liability; (ii) certain kinds of National Accounts conventions vs tax laws, particularly in the construction sector; (iii) the accuracy of estimates of accrued VAT revenues as reported by Eurostat.

Informal Economy. Conceptually, the non-observed economy, which must be included in GDP estimates in the European Union, is composed of four distinct categories: underground, informal (including those undertaken by households for their own final use), illegal, and other activities omitted due to deficiencies in the basic data collection programme. Underground activities are legal but conceived in order to avoid taxation (including VAT). Informal activities are legal but of small scale and mostly involving little capital. Illegal activities are those explicitly prohibited by the law (and will be incorporated in national accounts under ESA2010). Other activities omitted are “unknown unknowns”, the results of deficiencies in sampling methods and procedures. All EU Member States adjust their National Account statistics to capture some elements of the informal economy, and with the adoption of ESA 2010 standards currently underway, illegal activities will also be included in statistics. However, the methodology followed by each Member State varies depending on the estimation procedures used in each country, so it is not possible to strictly ensure that all countries capture all informal activities in equal proportions. This might affect the comparability of VAT Gap estimates. While this issue cannot be solved empirically at present, we tend to regard the criticism as unfounded, as it would imply that countries with the lowest VAT Gaps somehow systematically underestimate the informal economy, and the opposite for countries with the highest VAT Gaps. Inspection of the results in this and other reports does not seem to support such a contention.

Accounting conventions. Because tax laws and statistical conventions are not necessarily harmonized, there may be (important) discrepancies in the recording of sales of goods or services to particular time periods, leading to bias in the estimation of the liability. This appears to have been the case, for instance, in Spain with regards to the construction industry, where the taxable moment for VAT purposes is different from the time at which construction is recorded in the national accounts. In normal times, these differences would even themselves out over time, but for instance during the post-2008 construction collapse, important differences remained as stocks of unsold housing continued as such over time. We have adjusted Spain’s estimates, given the availability of accurate corrections. We cannot exclude that this might apply to other countries, and to other items possibly of importance.

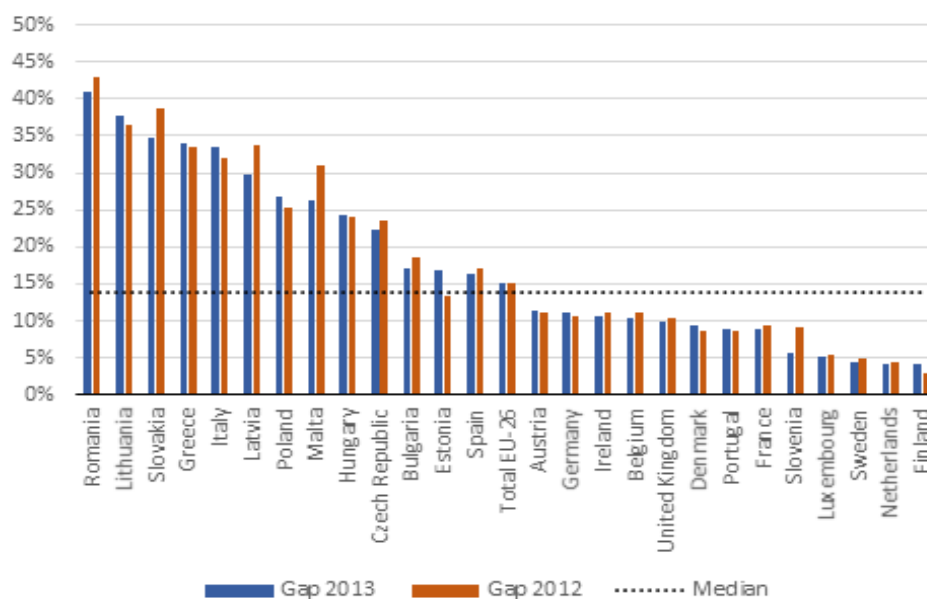
Accrued Revenues. Eurostat conventions correct net VAT cash collections with a lag of about 2 months in order to approximate accrued revenues, the relevant concept for national accounting purposes. Yet, this method is very crude, and several countries have made efforts to construct better data series that more closely approximate accrued revenues. The net effect of these corrections over time is generally very small or zero, but the allocation of revenues across years may be changed, leading to possibly different time profiles of VAT gap estimates. In this update, we have provided alternative estimates for Italy and Spain, for which the phenomenon has been particularly relevant.

2.2 VAT Gap: Overall Results for 2013

During 2013, the overall VAT Total Tax Liability (VTTL) for the EU-26 Member States grew by about 1.2 percent, while collected VAT revenues rose by 1.1 percent. As a result, the overall VAT Gap in the EU-26 saw an increase in absolute values of about Euro 2.8 billion, to reach Euro 168 billion. As a percentage, the overall VAT Gap stayed constant at 15.2 percent. The median VAT Gap rose by 1.6 percentage point and was 13.9 percent.

These overall developments were in line with general economic conditions. As mentioned in Chapter 1, the EU economy was essentially stagnant in 2013, while nominal final consumption rose marginally by 0.6 percent. In the absence of policy (and enforcement practices) changes, revenues and VTTL tend to follow the nominal growth of the economic base, although revenues reflect a greater sensitivity to the business cycle (real GDP growth), as discussed in the 2013 Report.

Figure 2.1. VAT Gap in the EU-26 countries, 2012-2013



In 2013, the VAT Gap in individual Member States ranged from the low of 4 percent of Finland, the Netherlands and Sweden, to the high of 41 percent in Romania. Fig. 2.1 and Table 2.1 provide an overview of the results of the VAT Gap estimates for 2012 and 2013.

Overall, 15 Member States decreased their VAT Gap, with the largest improvements noted in Latvia, Malta and Slovakia. Eleven Member States saw an increase in the VAT Gap, generally of small magnitudes, with the highest deteriorations in Estonia and Italy.

The trend of the VAT Gap over the period 2009-2013 is shown in Fig. 2.2. Member States have tended to slightly reduce their gap compared to the beginning of the period (at the depth of the Great

Recession). For the EU-26 as a whole, the Gap declined by 4 percentage points, from 19 to 15 percent. Figure 2.2 shows the behaviour of the VAT Gap in the EU-26 countries over this period, and more detailed information is to be found in Chapter 3, where the individual country sections are presented.

Box 2.2 – Sources of Revisions of Gap Estimates, 2009-2012

The estimates for various components of the VTTL and consequently of the VAT Gap for the years 2009-2012 have been revised (compared to the 2014 Report) on account of a number of factors. The most important factor is a substantial downward revision of the VTTL for France, which has led to a decrease in the estimated VAT Gap of some Euro 10 billion for 2012, and comparable amounts for earlier years. The revision was necessitated because of new official, but unpublished information received from the authorities on the applicability of reduced and super-reduced rates for both household and government final consumption. The most important information concerned the rates applicable to pharmaceuticals, but also involved several other categories of goods and services as well as GFCF. The second factor derives from the need to estimate the VAT liability on GFCF of exempt sectors, which is only available with a 2-year lag. Every additional year of statistical information thus leads to two years of “backwards” revisions for all countries. These revisions are generally but not always relatively minor. Finally, a number of countries have revised their historical national accounts, and in particular data on consumption and on VAT revenues, and this leads to changes in estimates of the VTTL and the VAT Gap.

For the year 2012, the difference between the original (2014 Report) and the revised estimates of the VAT Gap is approximately Euro 12 billion. The VAT Gap in absolute numbers is estimated at Euro 165 billion against Euro 177 billion in the 2014 Report. In percentage terms, the VAT Gap is estimated 0.9 percentage points lower, at 15.2 percent in contrast to 16.1 percent in the 2014 Report.

Figure 2.2. VAT Gap in the EU-26 countries, 2009-2013

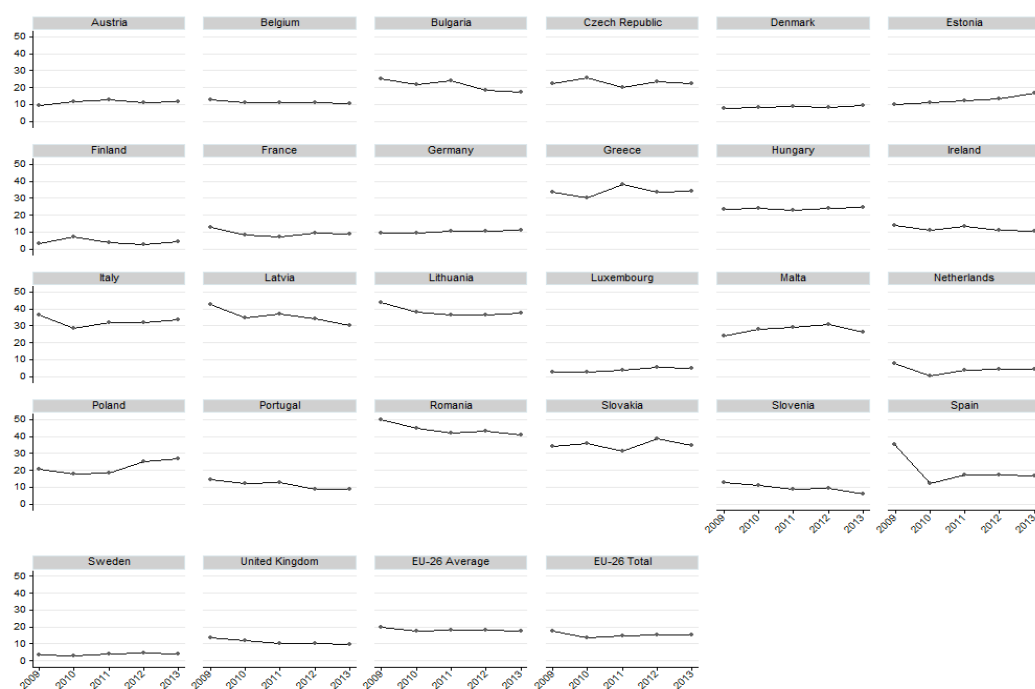


Table 2.1. VAT Gap Estimates, 2012-2013 (million Euros)

Country	2012				2013			
	Revenues	VTTL	VAT Gap	VAT Gap %	Revenues	VTTL	VAT Gap	VAT Gap %
Austria	24,563	27,629	3,066	11.1%	24,953	28,170	3,217	11.4%
Belgium	26,896	30,272	3,376	11.2%	27,226	30,412	3,186	10.5%
Bulgaria	3,828	4,697	869	18.5%	3,775	4,560	785	17.2%
Czech Republic	11,377	14,883	3,506	23.6%	11,694	15,070	3,375	22.4%
Denmark	24,296	26,563	2,267	8.5%	24,360	26,850	2,489	9.3%
Estonia	1,508	1,740	232	13.3%	1,558	1,873	315	16.8%
Finland	17,987	18,524	537	2.9%	18,848	19,660	812	4.1%
France	142,526	157,360	14,834	9.4%	144,414	158,510	14,096	8.9%
Germany	194,034	216,984	22,950	10.6%	197,005	221,878	24,873	11.2%
Greece	13,712	20,595	6,883	33.4%	12,593	19,090	6,497	34.0%
Hungary	9,084	11,963	2,879	24.1%	9,073	12,003	2,930	24.4%
Ireland	10,219	11,508	1,289	11.2%	10,371	11,596	1,225	10.6%
Italy	96,170	141,332	45,162	32.0%	93,921	141,437	47,516	33.6%
Latvia	1,583	2,391	808	33.8%	1,693	2,414	721	29.9%
Lithuania	2,521	3,971	1,450	36.5%	2,611	4,192	1,580	37.7%
Luxembourg	3,093	3,269	176	5.4%	3,485	3,672	187	5.1%
Malta	536	777	241	31.0%	586	796	210	26.4%
Netherlands	41,699	43,598	1,899	4.4%	42,424	44,276	1,852	4.2%
Poland	27,783	37,175	9,391	25.3%	27,780	37,911	10,131	26.7%
Portugal	13,995	15,330	1,335	8.7%	13,710	15,068	1,358	9.0%
Romania	11,212	19,634	8,422	42.9%	11,913	20,209	8,296	41.1%
Slovakia	4,328	7,054	2,726	38.6%	4,696	7,209	2,513	34.9%
Slovenia	2,889	3,180	291	9.1%	3,045	3,232	186	5.8%
Spain	56,652	68,262	11,610	17.0%	61,350	73,444	12,094	16.5%
Sweden	37,834	39,762	1,928	4.8%	39,091	40,867	1,776	4.3%
United Kingdom	142,943	159,695	16,752	10.5%	141,668	157,099	15,431	9.8%
Total EU-26	923,269	1,088,147	164,879	15.2%	933,843	1,101,498	167,654	15.2%
Median				12.3%				13.9%

Sources: Eurostat (revenues); Own calculations. Figures in million Euros unless otherwise indicated. National currency figures for countries not using the Euro converted at the average Euro exchange rate (source: Eurostat).

Explaining Changes in VTTL

Table 2.2 presents further details on changes in the VTTL in 2013, which are useful to understand the performance of individual countries discussed in Chapter 3. The change in VTTL is decomposed into the change in its base (final consumption and other components) and the change in the “effective rate”, i.e. the weighted average VAT rate by commodity group. The latter can represent modifications

in the classification of goods and services for the purposes of the applicable VAT rate (e.g., reclassification from standard to reduced rate, or vice-versa), or shift in consumption patterns across sub-categories. Finally, for those countries where a rate change was implemented (either in 2013 or during 2012), the last column captures the effect of such statutory changes on the VTTL.

Table 2.2. Decomposition of Changes in VTTL

	Change in VTTL	Change in Base	Change in Effective Rate	Change in Statutory Rates
Austria	2.3%	2.0%	0.2%	..
Belgium	2.1%	1.7%	0.4%	..
Bulgaria	-2.9%	-1.5%	-1.4%	..
Czech Republic	4.6%	0.4%	0.1%	4.0%
Denmark	1.3%	1.2%	0.1%	..
Estonia	7.7%	8.1%	-0.4%	..
Finland	5.9%	0.7%	0.7%	4.4%
France	0.7%	1.2%	-0.5%	..
Germany	2.3%	2.8%	-0.5%	..
Greece	-7.4%	-7.6%	0.2%	..
Hungary	3.4%	2.9%	0.4%	..
Ireland	0.9%	0.0%	0.8%	..
Italy	0.1%	-1.3%	0.3%	1.2%
Latvia	1.6%	5.0%	-1.6%	-1.6%
Lithuania	5.5%	3.8%	1.6%	..
Luxembourg	3.5%	4.9%	-1.4%	..
Malta	2.3%	2.2%	0.1%	..
Netherlands	1.6%	-0.7%	-2.3%	4.7%
Poland	2.4%	1.3%	1.0%	..
Portugal	-1.6%	-0.4%	-1.2%	..
Romania	2.7%	4.6%	-1.8%	..
Slovakia	2.3%	1.1%	1.2%	..
Slovenia	1.8%	-1.8%	-0.3%	4.0%
Spain	9.2%	-1.6%	1.2%	9.7%
Sweden	2.1%	2.9%	-0.7%	..
United Kingdom	3.2%	2.2%	1.0%	..

Source: Own Calculations.

As can be seen from the table, the largest component of the change in the VTTL is generally represented by the change in the base. In some cases, however, changes within the commodity classification have resulted in noticeable decreases in liability, for instance in the cases of the Netherlands, Romania, Latvia, Bulgaria and Luxembourg, and, in the opposite direction, Lithuania, Slovakia and Spain. Statutory rate changes have of course a powerful effect on liability (but not necessarily on collections), as shown in the last column, and the magnitude of the effect depends among other things on the timing

of the change in rate(s). Thus for instance in the case of Spain, which implemented substantial increases in standard and reduced rates in late 2012 (from 18 to 21 percent for the standard rate, and from 4/8 to 4/10 for the reduced rates), and whose effect carried over to 2013, leading to an increase in liability of more than 9 percent. At the other end of the spectrum, Latvia implemented a reduction of the VAT rates in July 2012, and the full effect was felt in 2013, leading to a reduction of the liability by 1.6 percent.

2.3 Policy Gap

In this section we present a new series of estimates of the Policy Gap for the EU-26, which modifies and extends the work done in the 2013 Report and the 2014 Report.

As discussed in the above mentioned reports and elsewhere in the literature, the Policy Gap tries to capture the effects of discretionary decisions regarding multiple rates and exemptions on the revenue that could be generated by a given VAT system. The Policy Gap is defined as the ratio between the VTTL and an “ideal” VAT Revenue, in turn defined and estimated by applying, for each country, the standard rate of VAT to final consumption (thereby eliminating the effects of reduced rates and exemptions). Thus, the Policy Gap is an indicator of the additional VAT revenue that a Member State could theoretically collect if it applied uniform taxation to all consumption of goods and services. The concept is a static one, since it does not take into account what would be consumer reactions to changes in prices brought upon by VAT increases, but it is one that has been popularized in the literature.

Rate Gap, Exemption Gap and “Actionable Exemption Gap”

The Policy Gap as defined above can in turn be decomposed into two separable effects, namely the Rate Gap and the Exemption Gap. As the terminology suggests, the Rate Gap represents the potential revenue loss due to the existence of reduced rates, whereas the Exemptions Gap represents the potential revenue loss due to the existence of exempted supplies of goods and services (see Box 2.3 for a brief discussion of EU rules on VAT rates, exemptions and right to deduct input VAT). Using our database of rates and exempt goods and services, we are able to provide a fully decomposable definition of the Exemption and Rate Gaps as summing to the Policy Gap (see Appendix A for the methodology).

We also address the issue of the extent to which the “ideal base”, and consequently the “ideal VAT revenue”, is a relevant concept for policymakers. We note that in the national accounting of final consumption, “imputed rents” (the notional value of home occupancy by homeowners) amount to a considerable portion of final consumption (typically 10 percent or more). It seems unlikely that even in an ideal world a workable method could be found to assess and collect VAT on such items, as they do not involve any monetary transaction (let alone the political feasibility of such a measure). Similarly, the provision of public goods or free goods on the part of government also presents a great

problem, since any attempt to impose VAT on, say, police services would be impractical, and attempts to tax services such as primary education which are currently free would require changing the nature of the public provision of the service itself, or EU directives (e.g., art. 132 of the VAT Directive). Finally, with respect to financial sector services the imposition of VAT may be both impractical and/or beyond the control of national authorities, as many aspect of taxation in this area are beyond national legislation purview (art. 135 of the VAT Directive).

In order to provide an estimate of the Policy Gap and its components that takes into account the practical problems relating to the exemptions for imputed rents, public goods and financial services just discussed, we have thus produced a new index, called the index of “Actionable Exemption Gap”, which is more likely to represent actual policy choices that could be seized by the legislator if it chose to do so. This index is obtained by calculating separate exemption gaps for the three sectors concerned, and subtracting them from the overall Exemption Gap. An “Actionable Policy Gap” is then obtained by adding to the Rate Gap the “Actionable Exemption Gap”. In formulas:

$$\text{Policy Gap} = \text{Rate Gap} + \text{Exemptions Gap}$$

$$\text{Exemptions Gap} = \text{Imputed Rents Gap} + \text{Public Goods Gap} + \text{Financial Services Gap} + \text{“Actionable Exemption Gap”}$$

$$\text{“Actionable” Policy Gap} = \text{Rate Gap} + \text{“Actionable” Exemption Gap}$$

Box 2.3 – Summary of EU legislation on rates, exemptions, and rights to deduct

In this Box we briefly recall essential elements of the EU legislation with regard to VAT rates, exempted goods or services, and right of deductibility of VAT on inputs. For more information, see http://europa.eu/legislation_summaries/taxation/131057_en.htm

Rates of VAT

Taxable transactions are taxed at the rates and under the conditions set by the EU country where they take place. The standard rate of VAT is set as a percentage of the taxable amount which, until 31 December 2015, may not be less than 15%.

EU countries may apply one or two reduced rates of not less than 5 %. The reduced rates may only be applied to supplies of goods and services in the categories listed in Annex III to the VAT Directive (as last amended by Directive 2009/47/EC).

The EU countries may also, after consultation of the VAT Committee, apply a reduced rate to supplies of natural gas, electricity and district heating.

Finally, by way of derogation from the normal rules, certain EU countries have been authorised to maintain reduced rates, including those lower than the minimum, or zero rates, in certain areas.

Some of these derogations provided for in the act of accession of the ten countries which joined the EU on 1 May 2004 only applied until 31 December 2010. Others have been extended or incorporated into the general rules by Directive 2009/47/EC.

Exemptions

Goods and services which are exempt from VAT are sold to the final consumer without VAT applying to the sale. However, where the supply of goods or services is exempt, the supplier may not deduct the VAT on purchases. Such exemption without a right to deduct means that 'hidden' VAT remains included in the price paid by the consumer. This exemption should be clearly distinguished from a zero rate of VAT which certain EU countries have a derogation to retain and which means that the final price to the consumer includes no residual VAT.

There are also exemptions with a right to deduct whose main aim is to take into account the place where the goods or services are deemed to have been consumed and so taxed: these transactions are relieved of all VAT in their EU country of origin because they will be taxed in the country of destination.

Exemptions without a right to deduct

For socio-economic reasons, the following are exempted:

- certain activities of general interest (such as hospital and medical care, goods and services linked to welfare and social security work, school and university education and certain cultural services);
- certain transactions including insurance, the granting of credit, certain banking services, supplies of postage stamps, lotteries and gambling and certain supplies of immovable property.

To facilitate trade, certain importations of goods from outside the EU are exempt. These include the final importation of goods the supply of which is exempt in the EU country of importation and goods the final importation of which is governed by Directives 2007/74/EC (goods carried in travellers' luggage), 2009/132/EC (goods imported for non-commercial purposes) and 2006/79/EC (small consignments of goods of a non-commercial character).

Exemptions with a right to deduct

To take account of the place where goods and services are deemed to have been consumed and hence taxed, the following transactions are exempt with a right to deduct:

- intra-EU supplies of goods, including new means of transport and products subject to excise duty dispatched from one EU country to another;
- exports of goods from the EU to a third territory or a non-EU country;
- certain transactions relating to international transport or treated as exports;
- supplies of services by intermediaries when they take part in transactions relating to exports;
- certain transactions relating to international trade, such as those concerning customs warehouses and other warehouses.

Source: TAXUD website.

Results for 2013

The results of the estimates for the various gaps just discussed are shown in Table 2.3 for the year 2013. As can be seen, Column B displays the Policy Gap calculated according to the classic definition. As customary, the Policy Gap is generally higher than the VAT Gap, a result well-established

in the literature. For the year 2013, the Policy Gap ranges from the low of 27 percent in Slovakia and Bulgaria, to the high of 54 percent for Spain and Belgium. The EU-26 average Policy Gap is 42 percent, the median 43 percent.

The Policy Gap, in turn, is decomposed into the Rate Gap and the Exemption Gap (Columns C and D). The latter, in all countries, is the larger of the two, ranging from the high of 43 percent for Finland, to the low of 22 percent for Lithuania. The EU-26 average Exemption Gap is 33 percent, as is the median. The Rate Gap, on the other hand, ranges from the low of 1 percent in the case of Denmark, to the high of 19 percent in Portugal. The average is 10 percent, and the median is 11 percent.

From these results, it could be argued that the largest revenue losses induced by the legislation, compared to a single-rate, non-exemption regime, are attributable in all countries to exemption rather than multiple rates.

Table 2.3. Policy Gap, Rate Gap, Exemption Gap (2013)

	A	B	C	D	E	F	G	H	I
	VAT Gap	Policy Gap	Rate Gap	Exemption Gap	o/w Imputed Rents	o/w Financial Services	o/w Public Goods	"Actionable" Exemption Gap (D-E-F-G)	"Actionable" Policy Gap (C+H)
Austria	11.4%	40.7%	12.0%	28.7%	7.6%	1.8%	18.0%	1.4%	13.4%
Belgium	10.5%	53.8%	11.7%	42.1%	8.8%	2.5%	29.5%	1.3%	13.0%
Bulgaria	17.2%	26.7%	1.9%	24.8%	9.0%	-0.2%	13.8%	2.2%	4.1%
Czech Republic	22.4%	33.0%	6.3%	26.8%	9.3%	0.5%	17.8%	-0.9%	5.4%
Denmark	9.3%	42.7%	0.6%	42.0%	7.9%	3.3%	29.7%	1.2%	1.8%
Estonia	16.8%	30.5%	2.7%	27.8%	8.6%	1.3%	15.2%	2.7%	5.3%
Finland	4.1%	50.2%	7.7%	42.5%	9.5%	1.3%	26.1%	5.6%	13.4%
France	8.9%	53.4%	14.2%	39.2%	9.9%	1.2%	24.1%	3.9%	18.1%
Germany	11.2%	42.6%	8.4%	34.2%	6.7%	2.0%	22.3%	3.2%	11.6%
Greece	34.0%	50.8%	13.6%	37.1%	10.6%	1.2%	19.0%	6.3%	19.9%
Hungary	24.4%	36.2%	5.2%	31.0%	8.5%	2.1%	17.6%	2.8%	8.0%
Ireland	10.6%	52.5%	16.9%	35.6%	8.6%	1.0%	23.0%	2.9%	19.8%
Italy	33.7%	45.6%	13.3%	32.3%	10.5%	-0.8%	19.3%	3.4%	16.7%
Latvia	29.9%	33.3%	3.4%	29.8%	10.8%	0.6%	17.3%	1.2%	4.6%
Lithuania	37.7%	25.5%	3.3%	22.2%	5.2%	0.8%	14.5%	1.7%	5.0%
Luxembourg	5.1%	53.2%	12.5%	40.8%	10.2%	2.5%	23.9%	4.1%	16.6%
Malta	26.4%	41.5%	18.0%	23.6%	5.0%	-0.5%	18.0%	1.2%	19.1%
Netherlands	4.2%	52.0%	11.0%	41.1%	5.5%	2.8%	29.0%	3.8%	14.8%
Poland	26.7%	43.1%	18.5%	24.6%	4.4%	2.8%	14.1%	3.3%	21.7%
Portugal	9.0%	51.9%	19.0%	32.9%	6.5%	2.6%	21.4%	2.3%	21.3%
Romania	41.1%	17.0%	4.0%	13.0%	10.8%	-0.9%	9.4%	-6.4%	-2.4%
Slovakia	34.9%	27.3%	1.8%	25.5%	5.4%	3.0%	15.9%	1.2%	3.0%
Slovenia	5.8%	43.3%	11.7%	31.6%	8.2%	2.0%	18.8%	2.6%	14.3%
Spain	16.5%	53.9%	15.7%	38.2%	8.9%	1.8%	20.4%	7.0%	22.7%
Sweden	4.3%	48.8%	7.8%	40.9%	6.2%	1.4%	28.1%	5.3%	13.1%
United Kingdom	9.8%	51.4%	12.8%	38.6%	11.1%	1.4%	20.8%	5.3%	18.1%
Average	18.5%	42.3%	9.8%	32.6%	8.2%	1.4%	20.3%	2.6%	12.4%
Median	13.9%	43.2%	11.3%	32.6%	8.6%	1.4%	19.2%	2.7%	13.4%

However, if we deduct from the Exemption Gap three elements that either might not belong in an “Ideal” VAT system, or that would be extremely hard to tax (public goods, financial services, and imputed rents, as displayed in columns E, G and F), we can observe an interesting reversal:

- The individual “Exemption Gaps” for imputed rents, public goods and financial services have a similar ordering across countries, with public goods being the largest item (ranging from 29.5 percent in Belgium to 10 percent in Romania), followed by imputed rents and then financial services.
- The “actionable” Exemption Gap (the Exemption Gap net of imputed rents, financial services and public goods; Column H) is consequently of a much smaller magnitude than the original Exemption Gap, reflecting the importance of the three items in final consumption, particularly imputed rents and public goods. In some cases (Czech Republic and Romania⁵), this measure is actually negative, as the sum of the “non-actionable” sectors is greater than the gap itself. The “actionable” Exemption Gap can be less than zero if the “non-actionable” sectors have a sufficiently large share of GFCF. Due to the large share of non-deductible VAT on GFCF expenditures in the exempt sectors in that particular year, removing the exemptions would lead to a revenue loss for the Treasury if the GFCF expenditures are larger than the value added by the sector (i.e. VAT on GFCF expenditures would become deductible)⁶.
- Consequently, the “actionable” Policy gap (defined as the sum of the Rate gap and the “actionable” Exemption Gap; Column I) is actually, in a number of cases, smaller than the VAT Gap. Thus, the “actionable” Policy Gap ranges from the negative 2 percent for Romania (again, negative because the negative “actionable” Exemption Gap is greater than the Rate Gap), to 3 percent in the case of Slovakia, to 23 percent in the case of Spain, and it is lower than the VAT in the cases of Bulgaria, Czech Republic, Denmark, Estonia, Greece, Hungary, Italy, Latvia, Lithuania, Malta, Poland, Romania and Slovakia.

The above results should not of course be interpreted as an indication that the scope for increased revenues from less distortive VAT systems is insignificant, but rather that, in the balance of considerations, for most of the EU-26 countries a better-functioning collection system has to remain a priority for public action.

⁵ In the case of Romania, the financial sector also had an overall negative value added.

⁶ See Appendix A for a formal discussion.

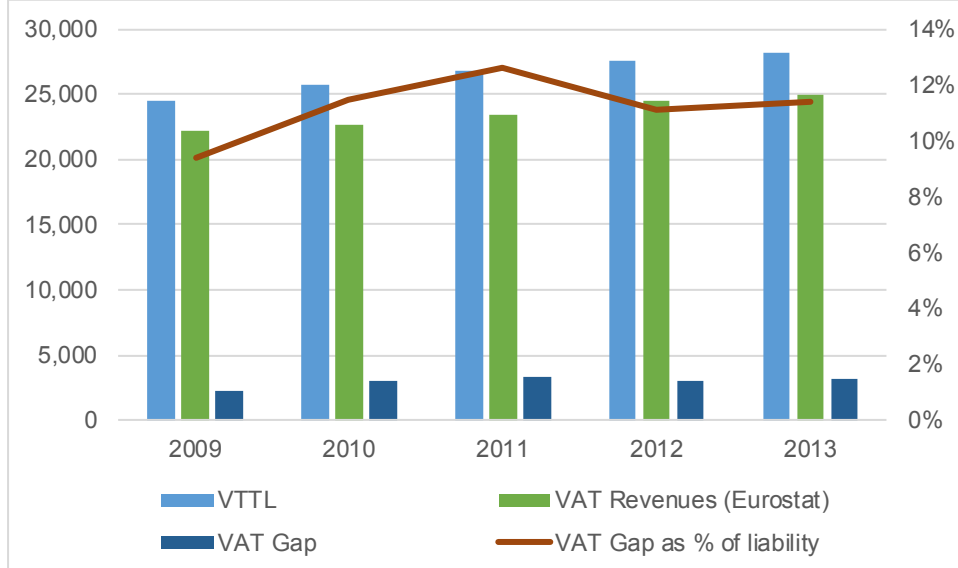
3. Individual Country Results

This chapter reviews in detail the results for each EU-26 Member State for which this study has produced updates of the VAT Gap for 2013. For the general country features the reader is referred to the 2013 Report.

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Table 3.1 Austria: VAT receipts, VTTL, composition of VTTL and Gap, 2009–2013 (EUR million)

	2009	2010	2011	2012	2013
VTTL	24,447	25,681	26,838	27,629	28,170
Liability on Household Consumption	16,280	17,230	17,980	18,524	18,986
Unrecoverable input liability on Intermediate consumption, Government and NPISH	4,751	4,795	4,900	5,067	5,184
Unrecoverable input liability on GFCF of exempt industries	2,191	2,387	2,477	2,568	2,586
Net Adjustments	1,225	1,269	1,481	1,469	1,414
VAT Revenues (Eurostat)	22,158	22,735	23,447	24,563	24,953
VAT Gap	2,289	2,945	3,392	3,066	3,217
VAT Gap as % of liability	9%	11%	13%	11%	11%

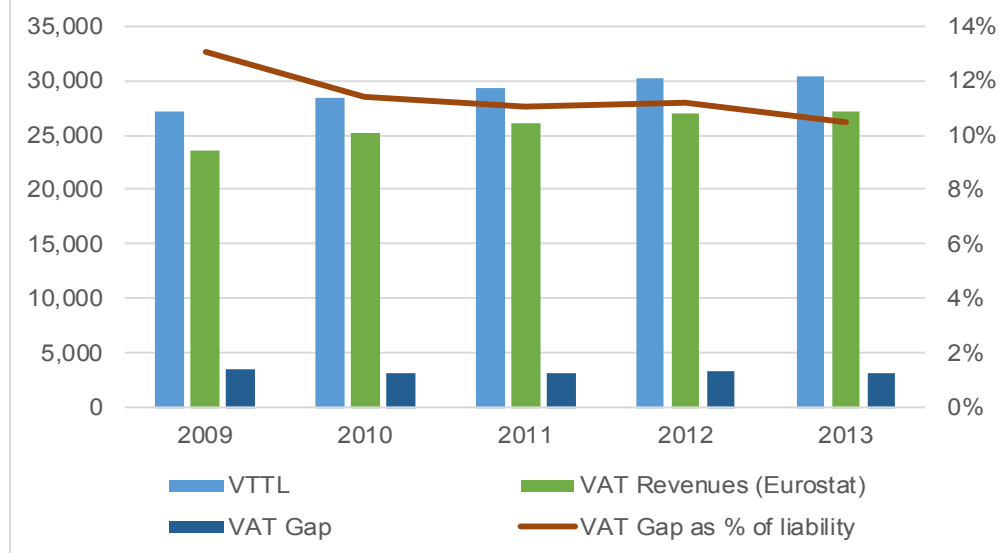
**Highlights for 2013**

The VAT Gap in Austria was virtually stationary during 2013, compared to the previous year. With the economy experiencing virtually no growth in real GDP, and with nominal final consumption advancing barely by 2 percent, the VTTL rose by slightly less than 2 percent, just slightly ahead of the 1.6 percent growth in VAT revenues. As a ratio to total liability, the gap remained at 11 percent.

No significant changes were made to the VAT system during the year.

Table 3.2 Belgium: VAT receipts, VTTL, composition of VTTL and Gap, 2009–2013 (EUR million)

	2009	2010	2011	2012	2013
VTTL	27,150	28,473	29,255	30,272	30,412
Liability on Household Consumption	15,763	16,281	16,847	17,240	17,656
Unrecoverable input liability on Intermediate consumption, Government and NPISH	6,057	6,593	7,053	7,198	7,467
Unrecoverable input liability on GFCF of exempt industries	4,039	4,126	4,007	4,262	4,173
Net Adjustments	1,290	1,473	1,348	1,572	1,116
VAT Revenues (Eurostat)	23,600	25,230	26,019	26,896	27,226
VAT Gap	3,549	3,243	3,236	3,376	3,186
VAT Gap as % of liability	13%	11%	11%	11%	10%

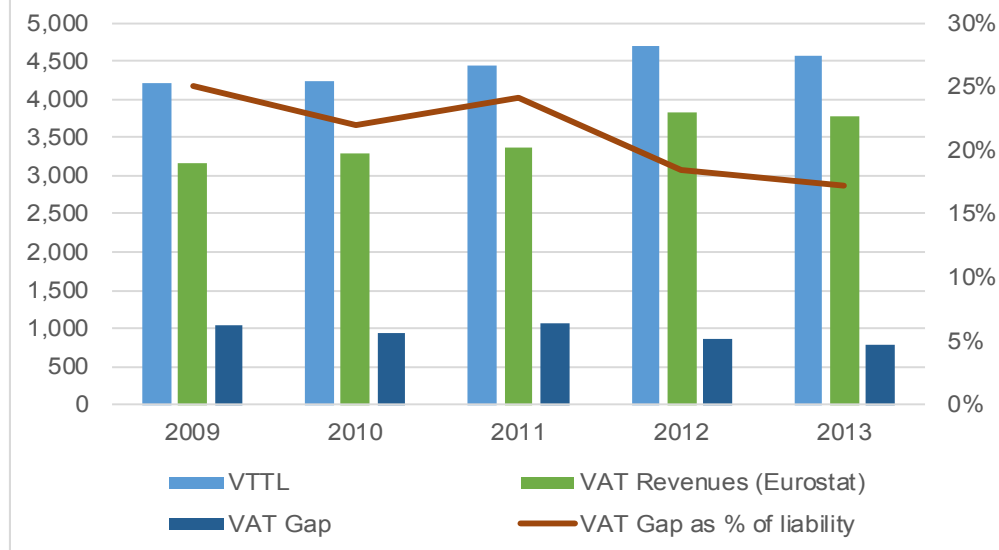
**Highlights for 2013**

Belgium's total VAT liability (VTTL) rose very slightly in 2013, reflecting the sluggish behavior of the economy (real GDP growth: 0.1 percent, final consumption nominal growth: 2.3 percent). Revenues increased a modest 1.2 percent, thus overall leading to a decreased estimated VAT gap (Euro 3.2 billion, or 10 percent of liability, down from 11 percent in 2012).

No systemic changes were introduced to the VAT system parameters.

Table 3.3 Bulgaria: VAT receipts, VTTL, composition of VTTL and Gap, 2009–2013 (EUR million)

	2009	2010	2011	2012	2013
VTTL	4,208	4,229	4,434	4,697	4,560
Liability on Household Consumption	3,016	3,177	3,351	3,664	3,529
Unrecoverable input liability on Intermediate consumption, Government and NPISH	652	579	613	575	588
Unrecoverable input liability on GFCF of exempt industries	459	422	399	397	384
Net Adjustments	80	51	70	61	59
VAT Revenues (Eurostat)	3,156	3,299	3,362	3,828	3,775
VAT Gap	1,052	930	1,072	869	785
VAT Gap as % of liability	25%	22%	24%	18%	17%

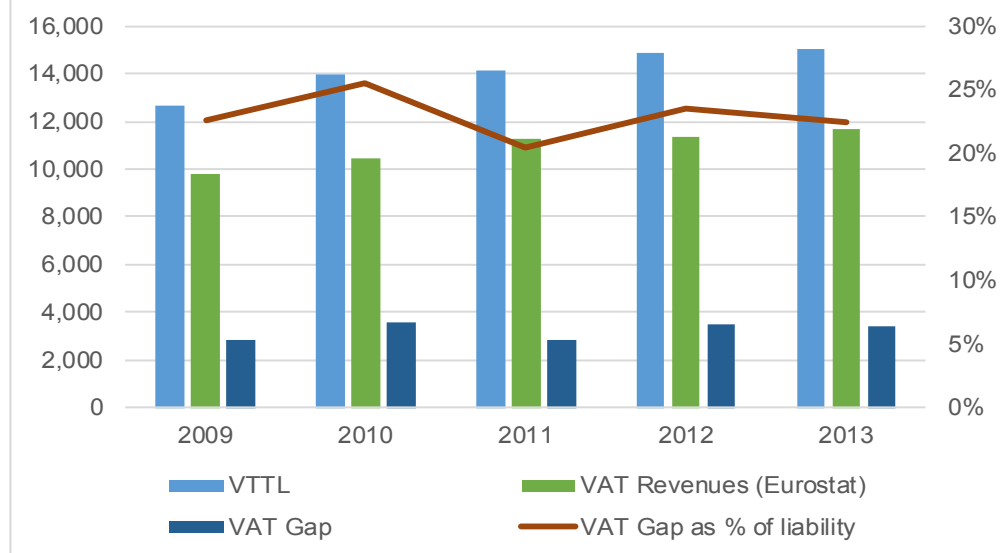
**Highlights for 2013**

Bulgaria's VAT gap continued in a welcome downward trajectory already remarked in 2012. Despite registering an overall slight increase in real GDP, nominal final consumption declined in absolute terms, and this contributed to an almost 3 percent reduction in the VTTL. Revenues, on the other hand, were virtually unchanged after the substantial increase registered in 2012, and this allowed the gap to decline to 17 percent, a 1/3 improvement over the 2009 high.

No changes were introduced to the VAT system in 2013.

Table 3.4 Czech Republic: VAT receipts, VTTL, composition of VTTL and Gap, 2009–2013 (EUR million)

	2009	2010	2011	2012	2013
VTTL	12,636	13,991	14,122	14,883	15,070
Liability on Household Consumption	7,509	8,428	8,659	9,304	9,531
Unrecoverable input liability on Intermediate consumption, Government and NPISH	3,246	3,692	3,809	3,869	3,954
Unrecoverable input liability on GFCF of exempt industries	1,654	1,793	1,574	1,632	1,502
Net Adjustments	226	78	79	77	83
VAT Revenues (Eurostat)	9,784	10,420	11,246	11,377	11,694
VAT Gap	2,852	3,571	2,876	3,506	3,375
VAT Gap as % of liability	23%	26%	20%	24%	22%

**Highlights for 2013**

The VAT Gap for the Czech Republic registered a small decline in 2013 compared to 2012, although at 22 percent it placed the country in the top tier in the EU-26 Member States.

The VTTL rose by a robust 4.6 percent, outpacing nominal final consumption growth on account of an increase in both the Standard and the Reduced rates (from 20 to 21 percent, and 14 to 15 percent, respectively). Revenue collection growth was even more pronounced, thus resulting in the small decline in the gap.

Table 3.5 Denmark: VAT receipts, VTTL, composition of VTTL and Gap, 2009–2013 (EUR million)

	2009	2010	2011	2012	2013
VTTL	24,390	25,107	25,916	26,563	26,850
Liability on Household Consumption	13,716	14,271	14,549	14,961	15,108
Unrecoverable input liability on Intermediate consumption, Government and NPISH	6,861	7,117	7,310	7,620	7,745
Unrecoverable input liability on GFCF of exempt industries	3,139	3,022	3,293	3,178	3,179
Net Adjustments	674	697	765	804	818
VAT Revenues (Eurostat)	22,499	23,040	23,682	24,296	24,360
VAT Gap	1,892	2,067	2,234	2,267	2,489
VAT Gap as % of liability	8%	8%	9%	9%	9%

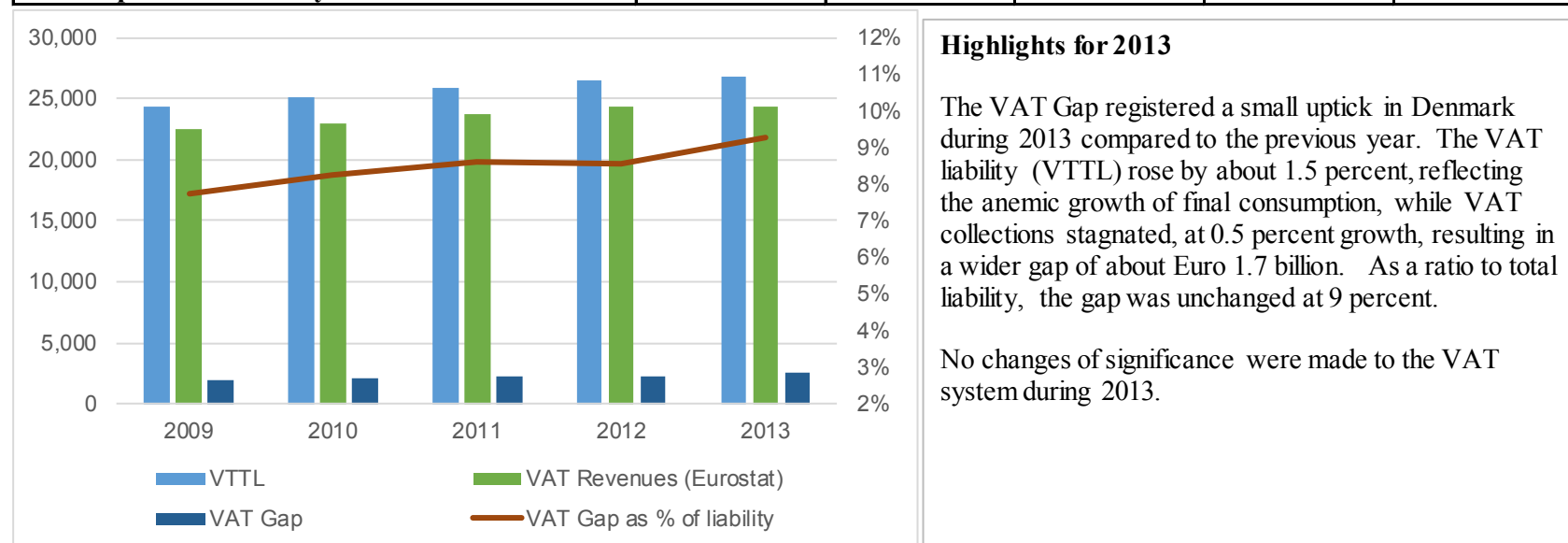
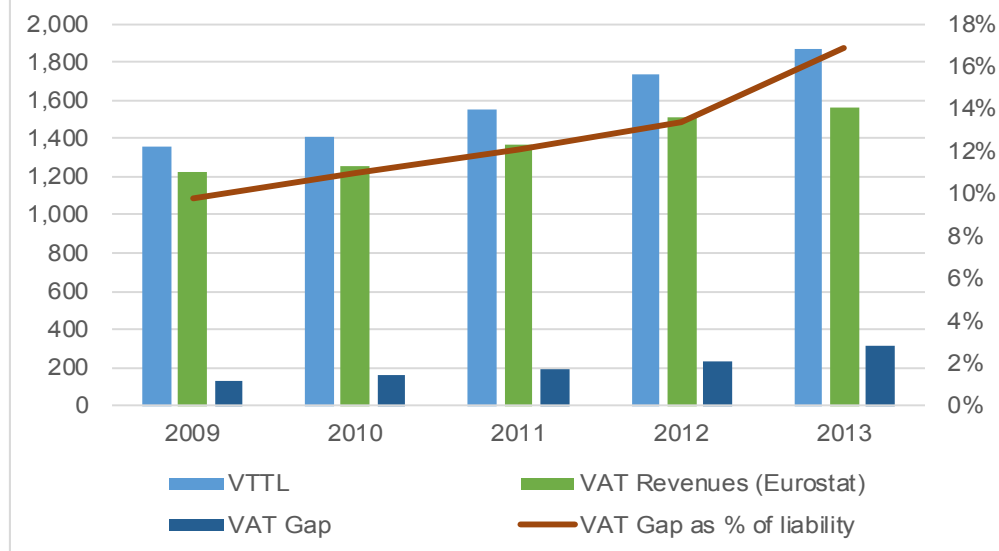


Table 3.6 Estonia: VAT receipts, VTTL, composition of VTTL and Gap, 2009–2013 (EUR million)

	2009	2010	2011	2012	2013
VTTL	1,357	1,413	1,550	1,740	1,873
Liability on Household Consumption	925	989	1,067	1,163	1,257
Unrecoverable input liability on Intermediate consumption, Government and NPISH	215	230	258	287	308
Unrecoverable input liability on GFCF of exempt industries	208	186	214	280	299
Net Adjustments	8	8	11	10	10
VAT Revenues (Eurostat)	1,224	1,257	1,363	1,508	1,558
VAT Gap	133	156	187	232	315
VAT Gap as % of liability	10%	11%	12%	13%	17%

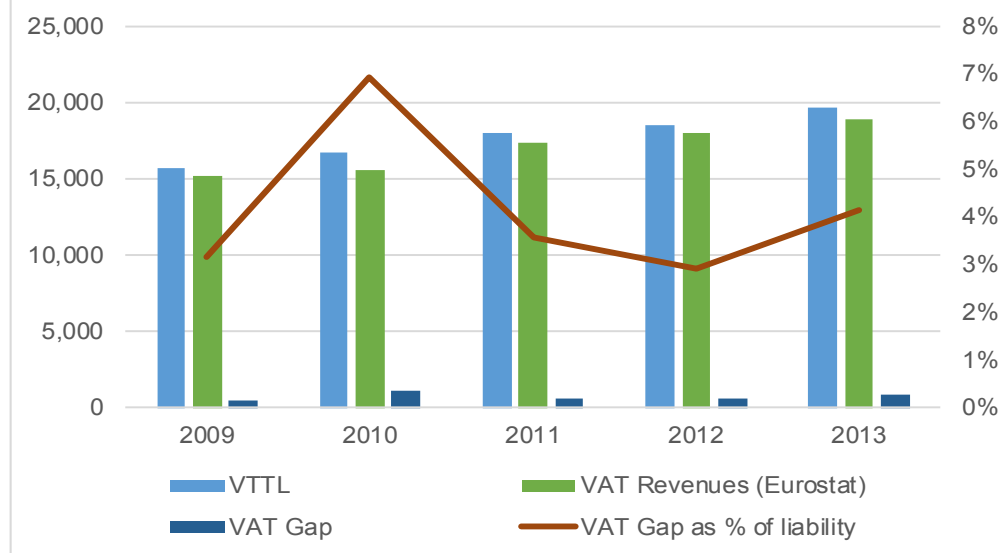
**Highlights for 2013**

The VAT gap for Estonia marked a noticeable increase in 2013 over 2012, as a result of the continuing erosion in collections relative to VTTL, which has led to the doubling of the Gap in Euro terms since 2009. Despite modest real GDP growth recorded for the year (1.6 percent), nominal final consumption rose instead by 8 percent, and overall VTTL by 7.6 percent. Revenue growth was a more modest 3.3 percent, hence the increase in the Gap to 17 percent.

No systemic changes were made to the VAT system in the course of the year.

Table 3.7 Finland: VAT receipts, VTTL, composition of VTTL and Gap, 2009–2013 (EUR million)

	2009	2010	2011	2012	2013
VTTL	15,673	16,691	17,955	18,524	19,660
Liability on Household Consumption	8,961	9,243	9,859	10,265	10,953
Unrecoverable input liability on Intermediate consumption, Government and NPISH	3,987	4,198	4,514	4,730	4,991
Unrecoverable input liability on GFCF of exempt industries	2,251	2,729	3,037	3,063	3,175
Net Adjustments	474	521	545	466	542
VAT Revenues (Eurostat)	15,176	15,533	17,315	17,987	18,848
VAT Gap	497	1,158	640	537	812
VAT Gap as % of liability	3%	7%	4%	3%	4%

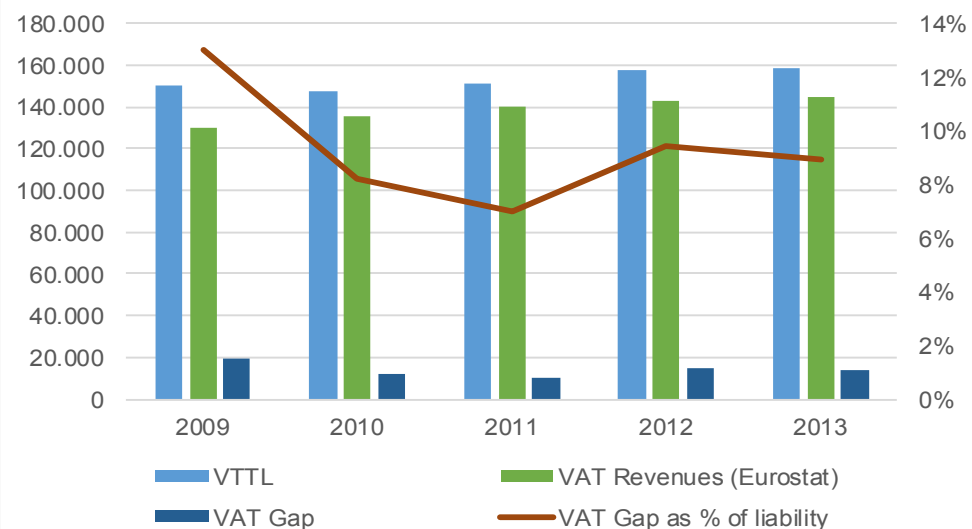
**Highlights for 2013**

Finland continues to have one of the EU-26 Member States lowest VAT Gap, despite a slight increase in its value in 2013. During the year, the overall economy experienced a slight recession, and the growth of nominal final consumption was an anemic 1.5 percent.

A rate increase by 1 percentage point in both the Standard and the Reduced rates resulted in a VTTL surge of 6.2 percent, but revenue growth lagged, at 4.7 percent. Hence the increase in the overall VAR gap from 3 to 4 percent of liability.

Table 3.8 France: VAT receipts, VTTL, composition of VTTL and Gap, 2009–2013 (EUR million)

	2009	2010	2011	2012	2013
VTTL	149.824	147.739	151.118	157.360	158.510
Liability on Household Consumption	90.889	92.700	95.147	98.891	99.718
Unrecoverable input liability on Intermediate consumption, Government and NPISH	25.204	25.863	25.692	26.859	27.234
Unrecoverable input liability on GFCF of exempt industries	30.186	25.142	26.577	27.772	27.636
Net Adjustments	3.546	4.035	3.702	3.839	3.922
VAT Revenues (Eurostat)	130.303	135.578	140.552	142.526	144.414
VAT Gap	19.521	12.161	10.566	14.834	14.096
VAT Gap as % of liability	13%	8%	7%	9%	9%

**Highlights for 2013**

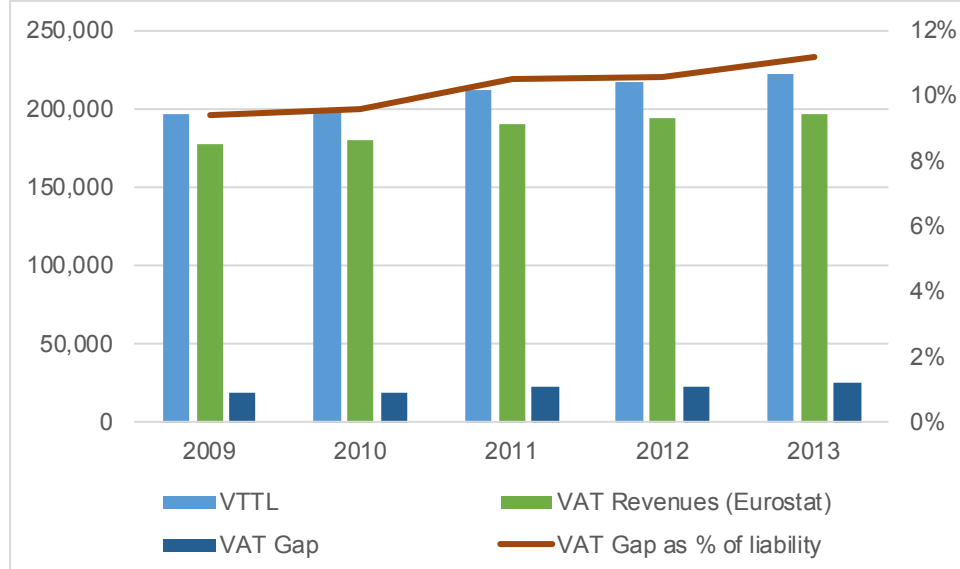
The VAT Gap for France declined marginally during 2013. Given the stagnant economy, and very low growth of nominal final consumption, the VTTL rose by less than one percent. Revenues were slightly more resilient, and as a result, the Gap declined somewhat, in absolute terms, and remained unchanged at 9 percent of the VTTL.

No changes were made to the VAT regime during this period of time.

The estimates for 2009-2012 have been substantially revised on account of new official, but unpublished information received from the authorities on the applicability of reduced and super-reduced rates for both household and government final consumption. The most important information concerned the rates applicable to pharmaceuticals, but also involved several other categories of goods and services, as well as better information on GFCF liability.

Table 3.9 Germany: VAT receipts, VTTL, composition of VTTL and Gap, 2009–2013 (EUR million)

	2009	2010	2011	2012	2013
VTTL	196,095	199,283	212,245	216,984	221,878
Liability on Household Consumption	124,984	124,549	132,667	135,841	139,315
Unrecoverable input liability on Intermediate consumption, Government and NPISH	42,269	43,786	45,569	46,789	47,971
Unrecoverable input liability on GFCF of exempt industries	27,413	29,400	32,277	32,602	32,830
Net Adjustments	1,429	1,548	1,731	1,752	1,763
VAT Revenues (Eurostat)	177,701	180,213	189,910	194,034	197,005
VAT Gap	18,394	19,070	22,335	22,950	24,873
VAT Gap as % of liability	9%	10%	11%	11%	11%

**Highlights for 2013**

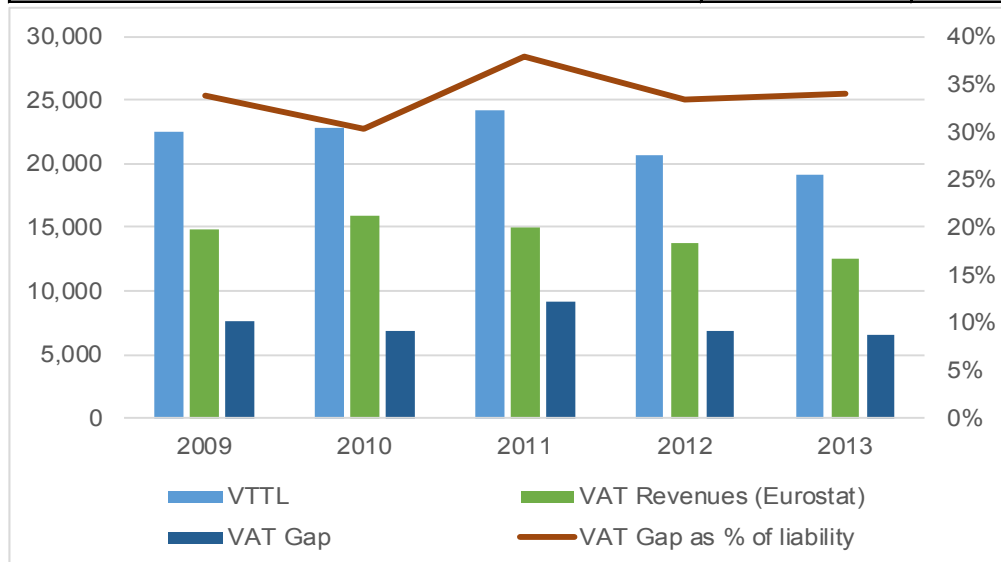
The VAT Gap for Germany for 2013, while increasing in absolute terms by almost Euro 2 billion, remained at the level of 11 percent of liability, as in 2012.

The underlying reasons for these developments are the slightly diverging behaviour of the VTTL and revenues. The former grew by some 2.6 percent, in line with final consumption nominal growth. The latter grew by a more restrained 1.5 percent, despite an overall modest GDP growth of 0.4 percent.

No changes to the VAT system were registered during the period.

Table 3.10 Greece: VAT receipts, VTTL, composition of VTTL and Gap, 2009–2013 (EUR million)

	2009	2010	2011	2012	2013
VTTL	22,453	22,885	24,181	20,595	19,090
Liability on Household Consumption	14,763	16,033	18,031	15,607	14,571
Unrecoverable input liability on Intermediate consumption, Government and NPISH	2,570	2,379	2,113	1,868	1,761
Unrecoverable input liability on GFCF of exempt industries	4,745	4,058	3,494	2,717	2,358
Net Adjustments	376	416	543	403	400
VAT Revenues (Eurostat)	14,876	15,958	15,021	13,712	12,593
VAT Gap	7,577	6,927	9,160	6,883	6,497
VAT Gap as % of liability	34%	30%	38%	33%	34%

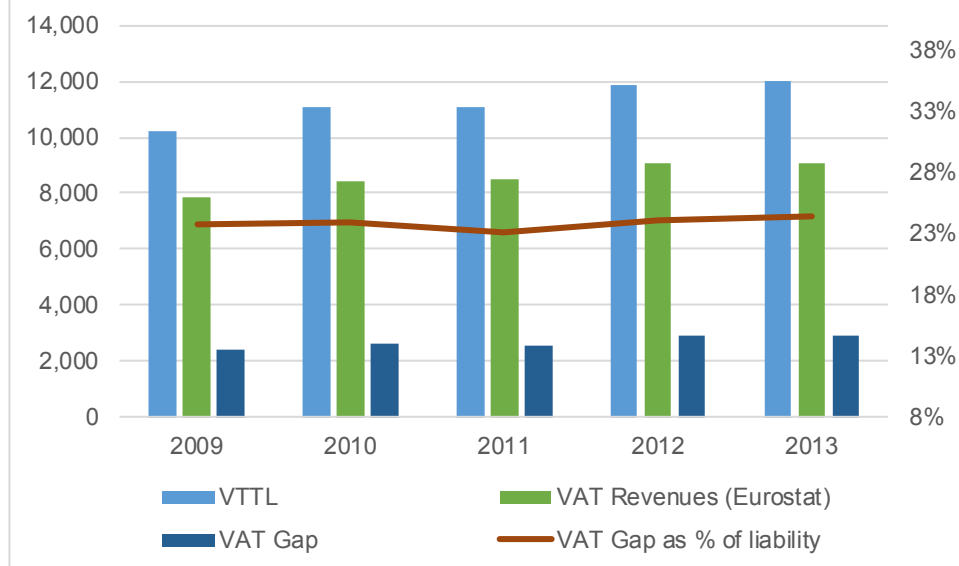
**Highlights for 2013**

The VAT Gap in Greece increased slightly during 2013, as a percent of VTTL. In an economic environment showing continuing albeit slowing decline, and with strong compression of final consumption, the VTTL declined by little more than 7 percent, but revenues took an even steeper fall, by over 8 percent, this leading to the increase in the percentage Gap to 34 percent.

Greece did not modify the VAT regime during 2013.

Table 3.11 Hungary: VAT receipts, VTTL, composition of VTTL and Gap, 2009–2013 (EUR million)

	2009	2010	2011	2012	2013
VTTL	10,244	11,102	11,066	11,866	12,003
Liability on Household Consumption	6,834	7,468	7,676	8,180	8,127
Unrecoverable input liability on Intermediate consumption, Government and NPISH	2,075	2,263	2,220	2,279	2,283
Unrecoverable input liability on GFCF of exempt industries	1,278	1,292	1,074	1,269	1,410
Net Adjustments	57	78	97	235	183
VAT Revenues (Eurostat)	7,820	8,442	8,516	9,084	9,073
VAT Gap	2,424	2,660	2,550	2,879	2,930
VAT Gap as % of liability	24%	24%	23%	24%	24%

**Highlights for 2013**

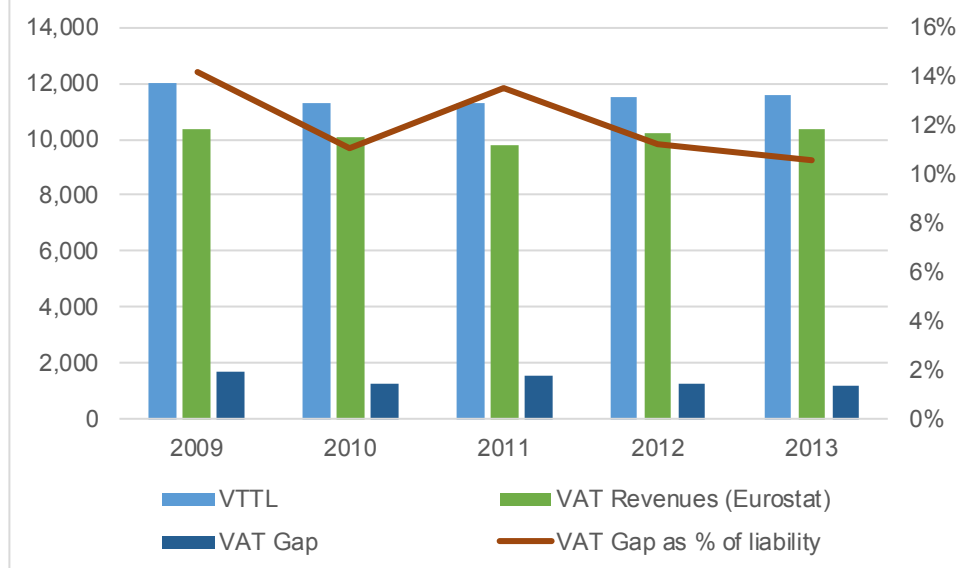
The VAT Gap in Hungary in 2013 was virtually unchanged from the 2012 value.

The VTTL rose by about 3 percent in Forint terms, along the lines of nominal final consumption, but was virtually unchanged in Euro terms. Revenue growth was similar, at 2.6 percent in forint and zero in Euro, hence the virtually unchanged VAT Gap, equivalent to 24 percent of VAT liability.

No changes were made to the VAT regime during the period under consideration.

Table 3.12 Ireland: VAT receipts, VTTL, composition of VTTL and Gap, 2009–2013 (EUR million)

	2009	2010	2011	2012	2013
VTTL	12,034	11,324	11,276	11,521	11,596
Liability on Household Consumption	7,026	6,922	6,923	7,266	7,294
Unrecoverable input liability on Intermediate consumption, Government and NPISH	2,710	2,654	2,641	2,719	2,787
Unrecoverable input liability on GFCF of exempt industries	2,045	1,518	1,471	1,279	1,279
Net Adjustments	253	230	242	244	236
VAT Revenues (Eurostat)	10,325	10,067	9,755	10,219	10,371
VAT Gap	1,709	1,256	1,521	1,289	1,225
VAT Gap as % of liability	14%	11%	13%	11%	11%

**Highlights for 2013**

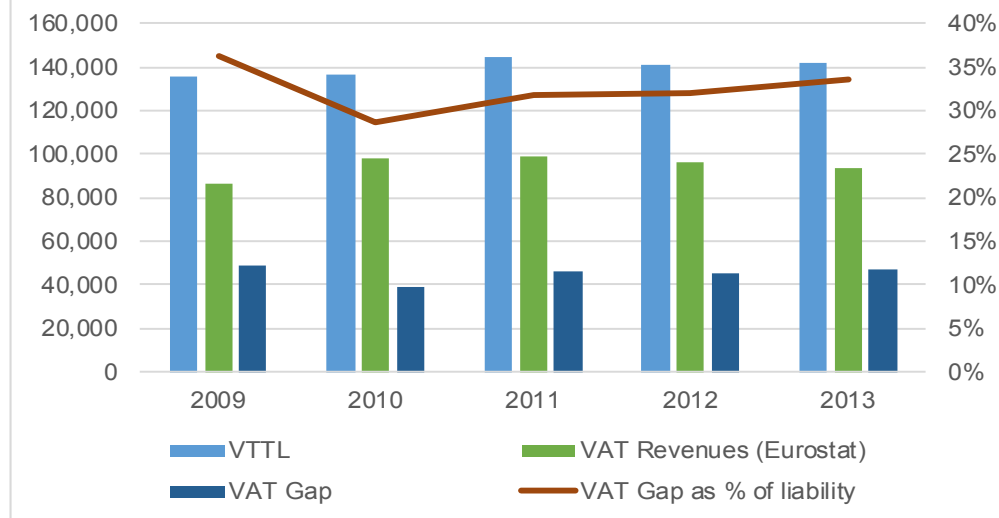
The VAT Gap in Ireland stayed virtually constant in 2013 compared to 2012.

A stagnating economy, with slightly negative real GDP growth and minimal growth of nominal final consumption, resulted in a flat VTTL (+0.8 percent) and equally minimal growth of VAT revenues (+1.5 percent). As a consequence, the VAT Gap in percent of liability remained at 11 percent, a value however below the EU-26 median.

The VAT Regime was not changed in the period in question.

Table 3.13 Italy: VAT receipts, VTTL, composition of VTTL and Gap, 2009–2013 (EUR million)

	2009	2010	2011	2012	2013
VTTL	135,805	136,817	144,425	141,332	141,437
Liability on Household Consumption	93,213	95,191	101,338	100,141	99,750
Unrecoverable input liability on Intermediate consumption, Government and NPISH	22,824	22,827	23,291	22,546	23,144
Unrecoverable input liability on GFCF of exempt industries	15,790	15,173	15,035	14,204	14,186
Net Adjustments	3,977	3,626	4,761	4,441	4,357
VAT Revenues (Eurostat)	86,544	97,586	98,650	96,170	93,921
VAT Gap	49,261	39,231	45,775	45,162	47,516
VAT Gap as % of liability	36%	29%	32%	32%	34%
Pro-Memoria: VAT Gap Including Net Refunds	42,993	40,137	46,673	43,338	43,902
Pro-Memoria: VAT Gap Including Net Refunds, %	32%	29%	32%	31%	31%

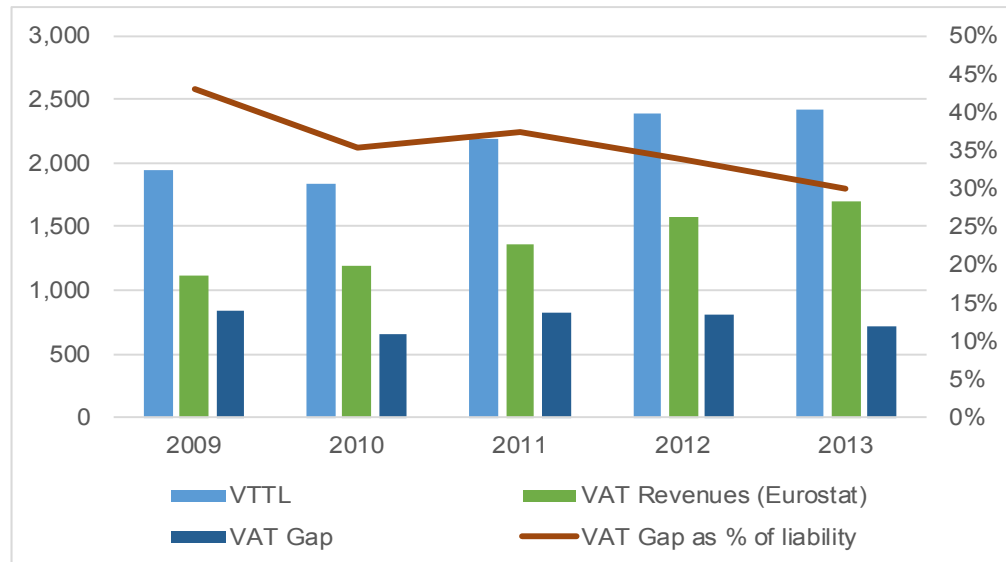
**Highlights for 2013**

Italy's VAT Gap rose somewhat during 2013, and remains at a very high level among the EU-26. As the country experienced another year of recession, and growth of nominal final consumption was also negative, the total VTTL rose marginally on account of a VAT rate increase (see table 2.2). Despite the rate increase, Eurostat revenues declined, thus leading to an increase of the gap to 34 percent.

Adjusting Eurostat-reported revenues for the changes in outstanding stocks of net reimbursement claims (to better approximate accrued revenues, as discussed in Box 2.1) yields a somewhat more stable picture. As taxpayers have accelerated requests for reimbursements, that has impacted revenue collection. Purging this element yields a substantially unchanged Gap at 31 percent.

Table 3.14 Latvia: VAT receipts, VTTL, composition of VTTL and Gap, 2009–2013 (EUR million)

	2009	2010	2011	2012	2013
VTTL	1,946	1,841	2,189	2,391	2,414
Liability on Household Consumption	1,355	1,342	1,581	1,726	1,772
Unrecoverable input liability on Intermediate consumption, Government and NPISH	340	333	398	422	430
Unrecoverable input liability on GFCF of exempt industries	235	151	196	223	192
Net Adjustments	16	16	14	20	20
VAT Revenues (Eurostat)	1,109	1,192	1,368	1,583	1,693
VAT Gap	837	649	821	808	721
VAT Gap as % of liability	43%	35%	37%	34%	30%

**Highlights for 2013**

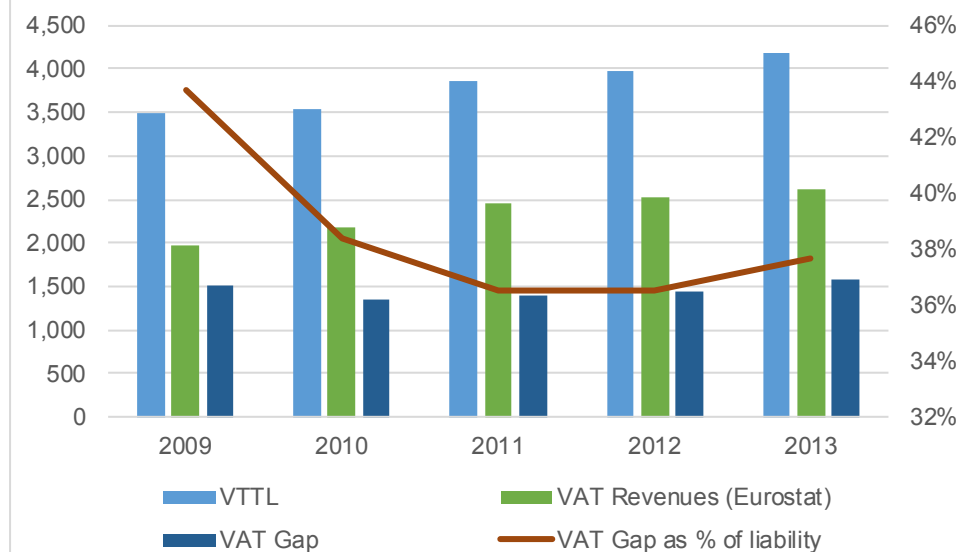
Latvia marked a considerable reduction in its (high) VAT Gap during 2013, in a context of generally good economic performances.

The VTTL rose only moderately (1 percent), despite robust growth in final consumption, on account of the full phasing in of the 2012 reduction in VAT rates. On the other hand, revenues saw another strong growth (+7.0 percent), hence the decline in the Gap to 30 percent.

The VAT regime was not substantially modified during the period under consideration.

Table 3.15 Lithuania: VAT receipts, VTTL, composition of VTTL and Gap, 2009–2013 (EUR million)

	2009	2010	2011	2012	2013
VTTL	3,480	3,539	3,848	3,985	4,192
Liability on Household Consumption	2,696	2,779	3,045	3,219	3,436
Unrecoverable input liability on Intermediate consumption, Government and NPISH	418	442	419	407	392
Unrecoverable input liability on GFCF of exempt industries	366	307	368	331	347
Net Adjustments	-1	10	16	14	18
VAT Revenues (Eurostat)	1,961	2,180	2,444	2,521	2,611
VAT Gap	1,519	1,358	1,404	1,450	1,580
VAT Gap as % of liability	44%	38%	36%	37%	38%

**Highlights for 2013**

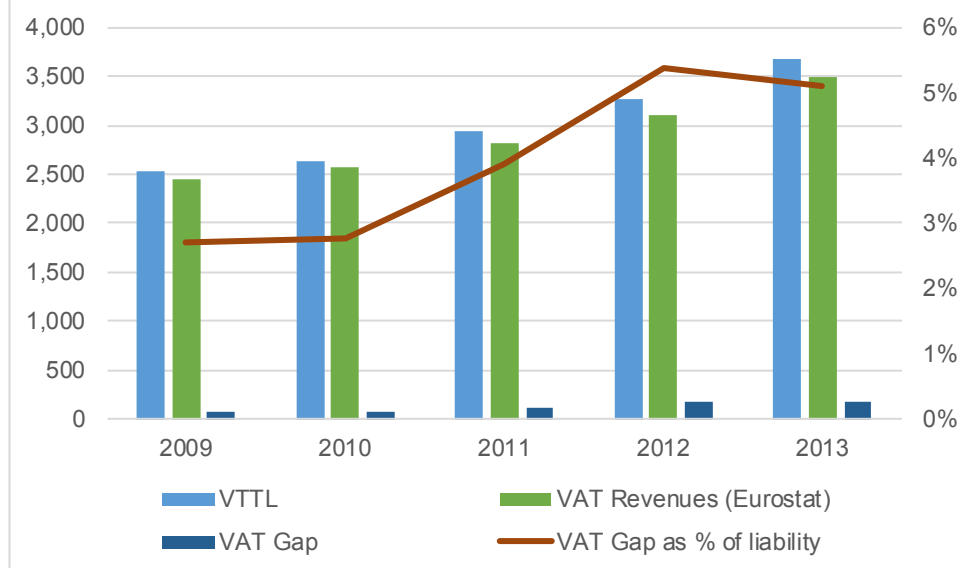
Lithuania's VAT Gap in 2013 remained one of the highest in the EU-26 Member Countries surveyed in this report.

The estimated VTTL grew by 5.6 percent, in line with the nominal growth in final consumption. Revenue growth, despite a robust overall real GDP increase, was more moderate at 3.6 percent. As a result, the VAT Gap rose to 38 percent.

No changes were made to the VAT regime during the period under consideration.

Table 3.16 Luxembourg: VAT receipts, VTTL, composition of VTTL and Gap, 2009–2013 (EUR million)

	2009	2010	2011	2012	2013
VTTL	2,525	2,635	2,939	3,270	3,672
Liability on Household Consumption	958	1,010	1,094	1,127	1,166
Unrecoverable input liability on Intermediate consumption, Government and NPISH	544	548	586	615	657
Unrecoverable input liability on GFCF of exempt industries	282	283	291	298	288
Net Adjustments	741	794	968	1,228	1,561
VAT Revenues (Eurostat)	2,457	2,562	2,824	3,093	3,485
VAT Gap	68	73	115	176	187
VAT Gap as % of liability	3%	3%	4%	5%	5%

**Highlights for 2013**

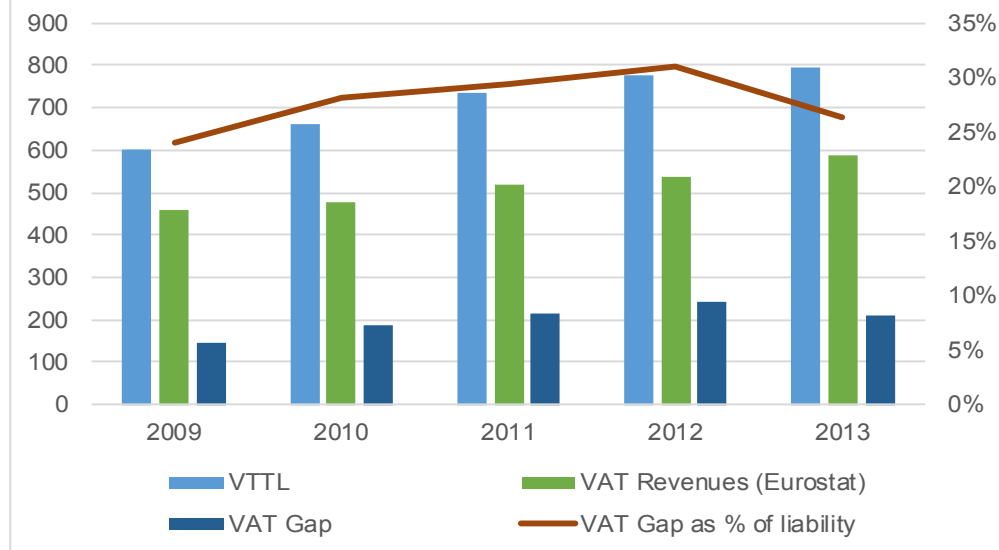
The VAT Gap for Luxembourg held constant at 5 percent of liability in 2013.

Whereas domestic sources of liability reflected the limited recovery in the pace of economic activity, the growth of VTTL was dominated, as in previous years, by other sources of income, including e-commerce, petrol trade and other items, which rose by an estimated 27 percent, continuing a trend observed in the recent past. With revenues consequently showing a strong performance (+12.6 percent), the overall gap remained constant at 5 percent of VTTL.

No changes to the VAT regime were registered during the year.

Table 3.17 Malta: VAT receipts, VTTL, composition of VTTL and Gap, 2009–2013 (EUR million)

	2009	2010	2011	2012	2013
VTTL	601	664	736	777	796
Liability on Household Consumption	351	374	393	420	438
Unrecoverable input liability on Intermediate consumption, Government and NPISH	222	253	305	315	316
Unrecoverable input liability on GFCF of exempt industries	26	30	37	39	37
Net Adjustments	2	6	2	3	4
VAT Revenues (Eurostat)	457	477	520	536	586
VAT Gap	144	186	216	241	210
VAT Gap as % of liability	24%	28%	29%	31%	26%

**Highlights for 2013**

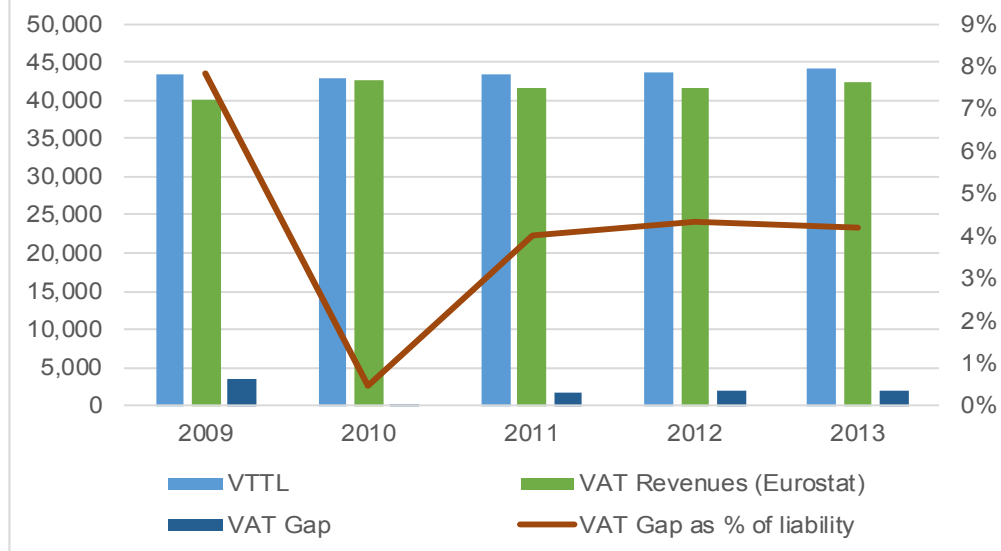
A strong revenue performance (possibly helped by a tax amnesty) contributed to a substantial reduction of the VAT Gap in Malta in 2013.

While the VTTL rose modestly on account of slow performance of exempted industries, revenues showed a remarkable 9.3 percent increase, thus leading the VAT gap to decline from 31 to 26 percent of total liability.

No substantial changes to the VAT regime were implemented in 2013 in Malta.

Table 3.18 Netherlands: VAT receipts, VTTL, composition of VTTL and Gap, 2009–2013 (EUR million)

	2009	2010	2011	2012	2013
VTTL	43,504	42,855	43,359	43,598	44,276
Liability on Household Consumption	22,398	22,769	23,122	23,719	24,793
Unrecoverable input liability on Intermediate consumption, Government and NPISH	11,156	11,020	10,805	11,217	11,284
Unrecoverable input liability on GFCF of exempt industries	9,312	8,400	8,750	7,992	7,502
Net Adjustments	637	666	683	671	696
VAT Revenues (Eurostat)	40,086	42,654	41,610	41,699	42,424
VAT Gap	3,418	201	1,749	1,899	1,852
VAT Gap as % of liability	8%	0%	4%	4%	4%

**Highlights for 2013**

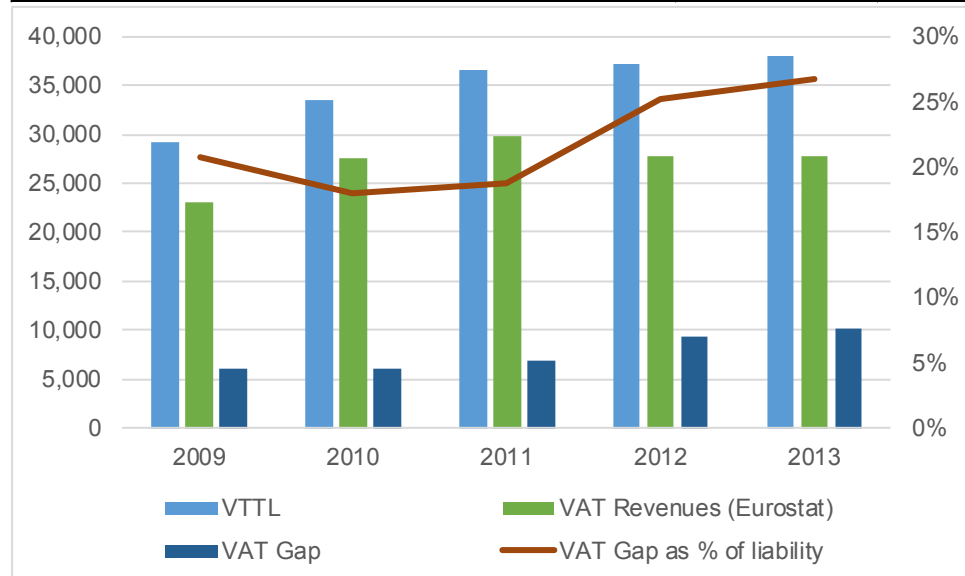
The Netherlands recorded one of the lowest VAT Gap in the EU-26 Member States in 2013.

The estimated VTTL rose slightly (1.5 percent), on account of the carryover from the 2012 increase in the VAT rates. Despite GDP contracting for the second year in a row, the authorities were able to increase VAT collections by 1.7 percent. As a result, the estimated VAT Gap fell marginally in absolute terms, and stayed at 4 percent of VTTL.

No other changes to the VAT regime were instrumented in 2013.

Table 3.19 Poland: VAT receipts, VTTL, composition of VTTL and Gap, 2009–2013 (EUR million)

	2009	2010	2011	2012	2013
VTTL	29,094	33,517	36,602	37,175	37,911
Liability on Household Consumption	19,139	21,881	24,014	25,015	25,764
Unrecoverable input liability on Intermediate consumption, Government and NPISH	5,729	6,667	7,026	7,049	7,369
Unrecoverable input liability on GFCF of exempt industries	3,612	4,242	4,585	4,098	3,771
Net Adjustments	614	726	977	1,013	1,007
VAT Revenues (Eurostat)	23,056	27,466	29,764	27,783	27,780
VAT Gap	6,038	6,051	6,837	9,391	10,131
VAT Gap as % of liability	21%	18%	19%	25%	27%

**Highlights for 2013**

Poland has continued to struggle with its capacity to collect VAT at a pace compatible with the pace of economic growth.

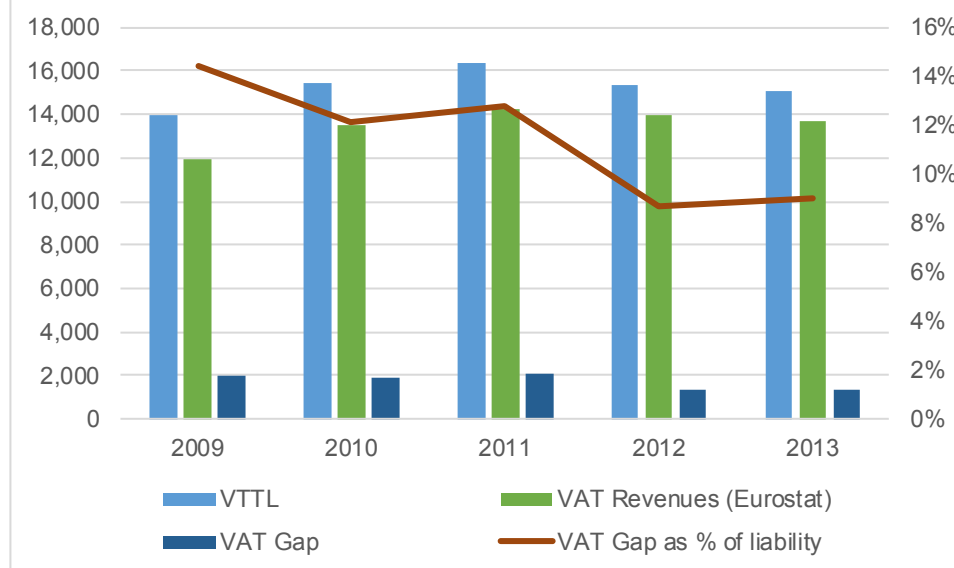
With real GDP and nominal final consumption registering modest increments (1.6 and 2 percent, respectively), the VTTL rose by 2 percent, but collections declined slightly in Euro terms.

As a result, the VAT Gap rose by 2 percentage points to 27%, placing Poland in the upper quintile of the EU-26 Member States by this performance.

No changes were made to the VAT Regime in 2013.

Table 3.20 Portugal: VAT receipts, VTTL, composition of VTTL and Gap, 2009–2013 (EUR million)

	2009	2010	2011	2012	2013
VTTL	13,993	15,392	16,359	15,330	15,068
Liability on Household Consumption	9,499	10,404	11,169	10,738	10,583
Unrecoverable input liability on Intermediate consumption, Government and NPISH	2,893	3,094	3,173	3,040	3,063
Unrecoverable input liability on GFCF of exempt industries	1,293	1,485	1,653	1,190	1,085
Net Adjustments	308	409	363	361	337
VAT Revenues (Eurostat)	11,971	13,527	14,265	13,995	13,710
VAT Gap	2,022	1,865	2,094	1,335	1,358
VAT Gap as % of liability	14%	12%	13%	9%	9%

**Highlights for 2013**

The VAT Gap for Portugal was virtually unchanged between 2012 and 2013.

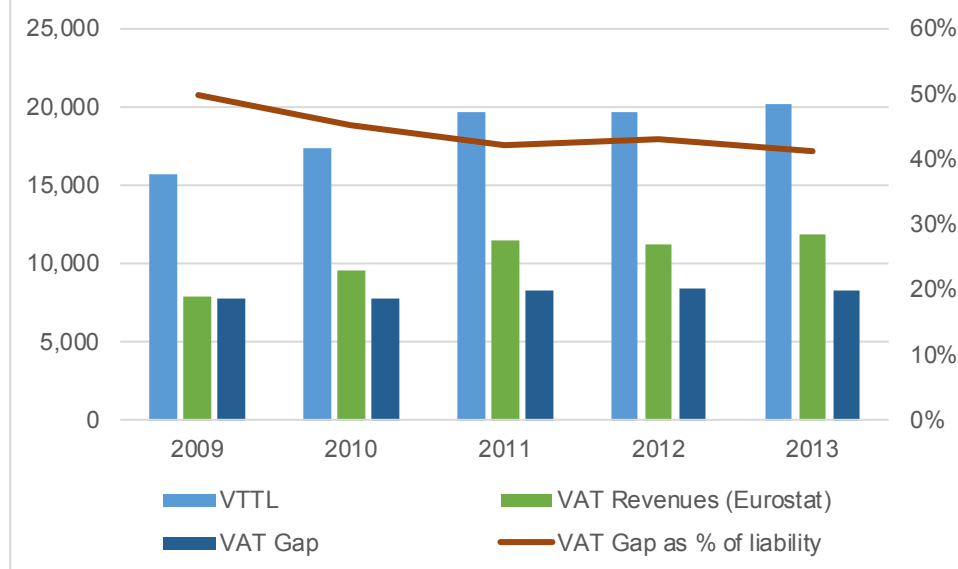
As the economy continued in a recession, and nominal final consumption growth was negative, the VTTL declined by some 1.7 percent.

Revenues also declined by some 2 percent, and as a result the overall Gap increased marginally in absolute terms, but remained at the level of 9 percent as in 2012.

No changes were made to the VAT system during the year.

Table 3.21 Romania: VAT receipts, VTTL, composition of VTTL and Gap, 2009–2013 (EUR million)

	2009	2010	2011	2012	2013
VTTL	15,651	17,297	19,662	19,634	20,209
Liability on Household Consumption	8,758	10,749	12,456	12,296	12,947
Unrecoverable input liability on Intermediate consumption, Government and NPISH	2,764	2,446	2,834	2,651	2,815
Unrecoverable input liability on GFCF of exempt industries	3,754	3,567	3,696	4,045	3,922
Net Adjustments	375	535	677	641	525
VAT Revenues (Eurostat)	7,852	9,494	11,412	11,212	11,913
VAT Gap	7,799	7,803	8,251	8,422	8,296
VAT Gap as % of liability	50%	45%	42%	43%	41%

**Highlights for 2013**

Romania's VAT gap declined by two percentage points in 2013, capping a five-year trend that has lowered the non-compliance from the high of 2009 (50 percent).

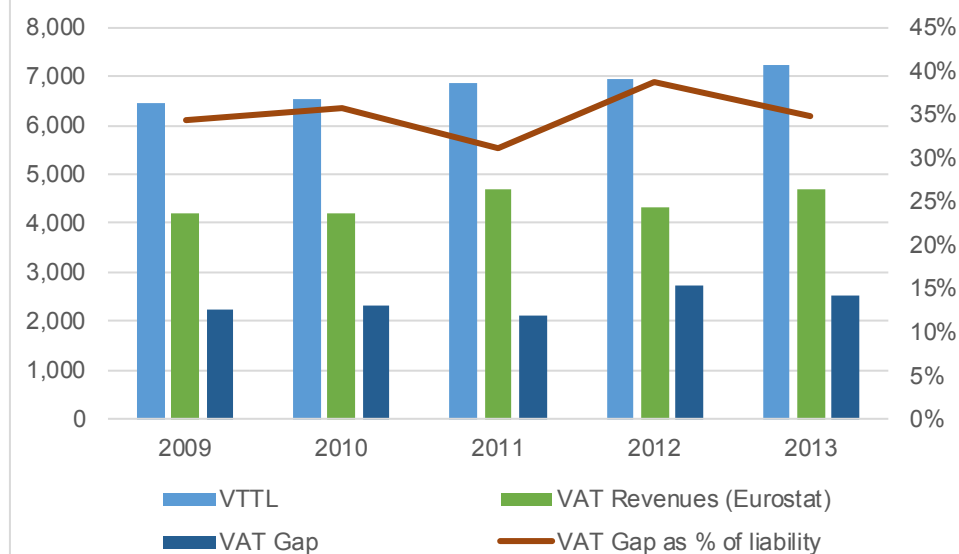
The 2013 result is in line with economic fundamentals. Romania registered one of the strongest GDP growth rates in the EU (+3.5 percent), and VAT revenues rose by a strong 6.3 percent (in Euro terms).

The VTTL rose more slowly than nominal final consumption, hence the reduction in the VAT Gap from 43 to 41 percent. This remains the highest value of the Gap in the EU-26 Member States.

No changes were made to the VAT system during this period.

Table 3.22 Slovakia: VAT receipts, VTTL, composition of VTTL and Gap, 2009–2013 (EUR million)

	2009	2010	2011	2012	2013
VTTL	6,438	6,516	6,844	6,963	7,209
Liability on Household Consumption	4,606	4,756	5,070	5,243	5,385
Unrecoverable input liability on Intermediate consumption, Government and NPISH	1,133	1,104	1,162	1,181	1,205
Unrecoverable input liability on GFCF of exempt industries	703	670	607	628	620
Net Adjustments	-4	-14	5	2	-2
VAT Revenues (Eurostat)	4,221	4,182	4,711	4,328	4,696
VAT Gap	2,217	2,334	2,133	2,726	2,513
VAT Gap as % of liability	34%	36%	31%	39%	35%

**Highlights for 2013**

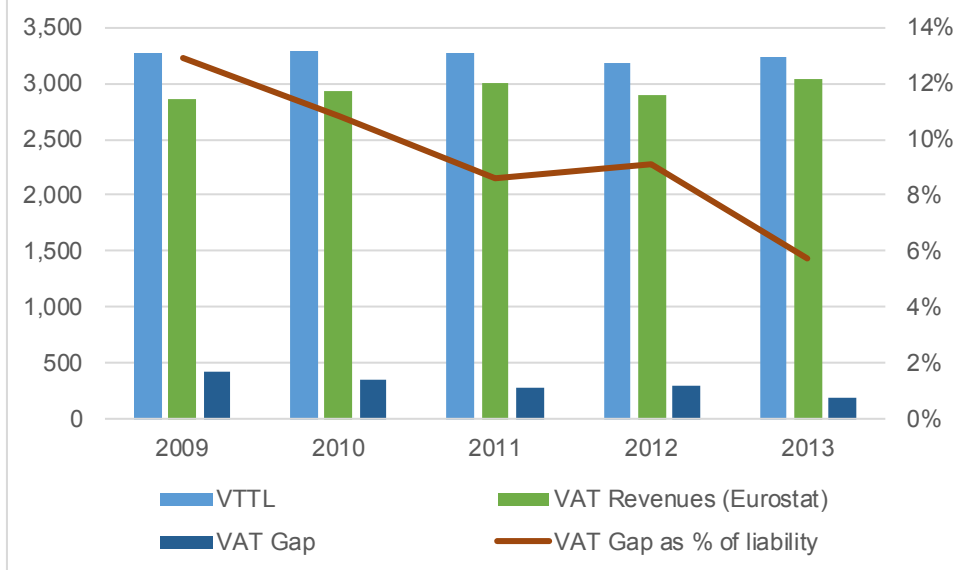
The VAT Gap in Slovakia in 2013 saw an important reduction from the extremely high value reached in 2012. Overall economic conditions were not particularly strong, with GDP growth positive but cut in half, and a very slow growth of nominal final consumption.

The VTTL rose by 2.2 percent, while revenues had a considerably more robust performance, at 8.5 percent growth. As a result, the VAT Gap declined by 4 percentage points, but, at 35%, it places Slovakia in the top tier of Member States in the EU-26 by this indicator.

No major changes to the VAT regime were registered during this period.

Table 3.23 Slovenia: VAT receipts, VTTL, composition of VTTL and Gap, 2009–2013 (EUR million)

	2009	2010	2011	2012	2013
VTTL	3,272	3,282	3,279	3,174	3,232
Liability on Household Consumption	2,176	2,257	2,309	2,243	2,280
Unrecoverable input liability on Intermediate consumption, Government and NPISH	527	542	533	520	520
Unrecoverable input liability on GFCF of exempt industries	453	376	322	309	328
Net Adjustments	116	107	115	108	103
VAT Revenues (Eurostat)	2,851	2,926	2,996	2,889	3,045
VAT Gap	421	356	283	291	186
VAT Gap as % of liability	13%	11%	9%	9%	6%

**Highlights for 2013**

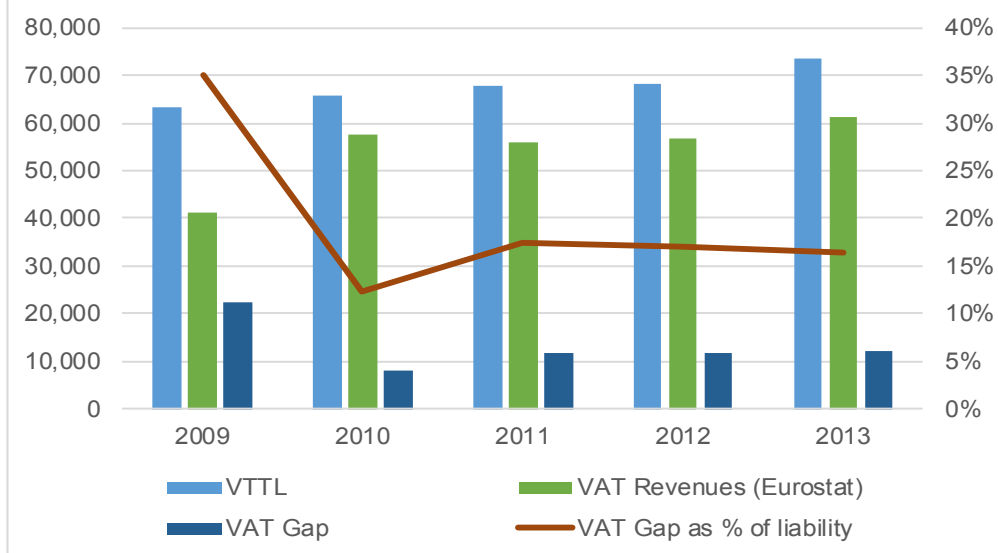
Thanks to a good revenue performance, Slovenia was able to reduce its VAT Gap by one-third over the course of 2013.

VAT revenues rose by 5.4 percent, thanks in large part to the increase by one percentage point in the Standard and Reduced rates, and despite the fact that the economy saw a contraction for the second year in a row.

A greater efficiency of collection is shown by the fact that the VTTL rose by less than 1 percent, thus leading to the substantial reduction in the Gap (from 9 to 6 percent). This favorable trend has reduced the Gap by over half since 2009.

Table 3.24 Spain: VAT receipts, VTTL, composition of VTTL and Gap, 2009–2013 (EUR million)

	2009	2010	2011	2012	2013
VTTL	63,214	65,796	67,677	68,262	73,444
Liability on Household Consumption	41,533	44,472	47,244	49,751	54,937
Unrecoverable input liability on Intermediate consumption, Government and NPISH	12,233	11,768	12,037	12,404	13,444
Unrecoverable input liability on GFCF of exempt industries	8,493	8,596	7,425	5,127	4,061
Net Adjustments	955	959	971	979	1,003
VAT Revenues (Eurostat)	41,045	57,649	55,904	56,652	61,350
VAT Gap	22,169	8,147	11,773	11,610	12,094
VAT Gap as % of liability	35%	12%	17%	17%	16%
Pro-Memoria: VAT Gap Including Net Refunds	8,858	7,674	10,715	10,574	10,742
Pro-Memoria: VAT Gap Including Net Refunds, %	14%	12%	16%	15.5%	14.6%

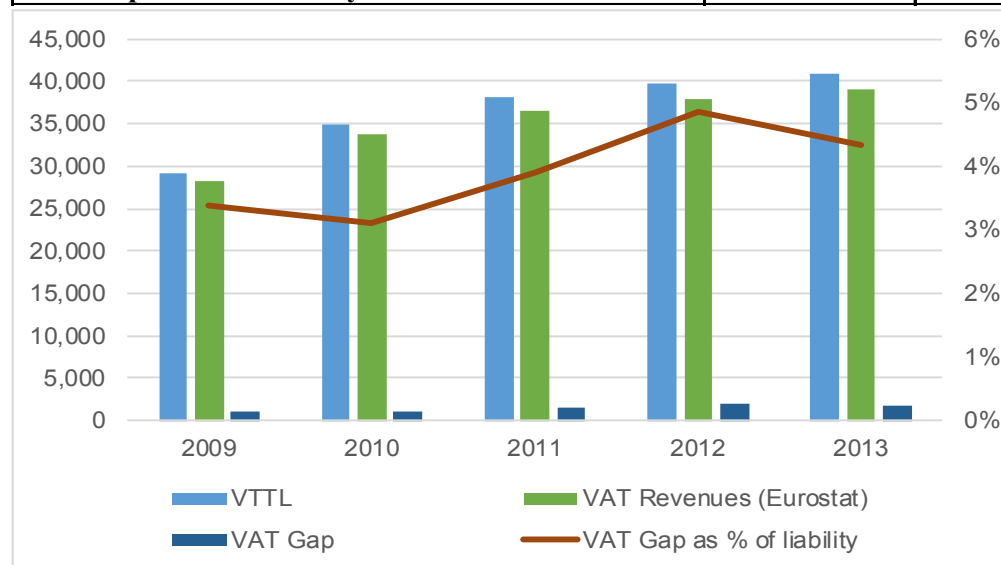
**Highlights for 2013**

The VAT Gap in Spain decreased during 2013 on the basis of revenue data reported to Eurostat. With the economy in a continuing recession, and growth of nominal final consumption also negative, the VTTL grew strongly (+7.6 percent) on account of full effect of the VAT rate increase introduced in late 2012. Revenues rose somewhat more (8.3 percent), thus leading to a decrease in the Gap to 16 percent. Adjusting revenues for the continuing reduction in the stock of claims for refunds that has been ongoing since 2009, in order to better approximate accrued revenues (see Box 2.1), the picture is essentially similar, with a very slight *reduction* in the Gap (which also has a lower level), from 15.5 to 14.6 percent.

These estimates correct the VTTL for the difference between national accounting and tax conventions in the construction sector (Box 2.1).

Table 3.25 Sweden: VAT receipts, VTTL, composition of VTTL and Gap, 2009–2013 (EUR million)

	2009	2010	2011	2012	2013
VTTL	29,188	34,908	38,123	39,762	40,867
Liability on Household Consumption	15,806	18,823	20,343	21,098	21,803
Unrecoverable input liability on Intermediate consumption, Government and NPISH	8,573	10,101	10,936	11,571	11,994
Unrecoverable input liability on GFCF of exempt industries	4,230	5,297	6,055	6,489	6,442
Net Adjustments	578	687	790	603	628
VAT Revenues (Eurostat)	28,199	33,825	36,631	37,834	39,091
VAT Gap	989	1,082	1,492	1,928	1,776
VAT Gap as % of liability	3%	3%	4%	5%	4%

**Highlights for 2013**

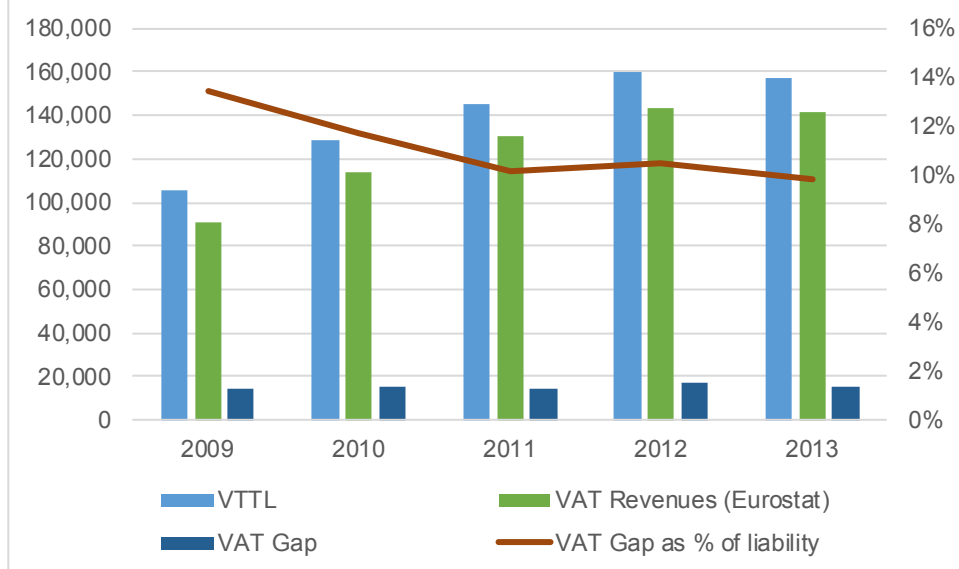
The VAT Gap in Sweden declined in the course of 2013, to one of the lowest levels of the EU-26 countries.

With the economy experiencing a mild recovery, and nominal final consumption growing by some 2.2 percent, the VTTL rose by some 2 percent, and VAT revenues registered even stronger growth (2.7 percent), thus leading to a decline in the Gap in absolute and relative terms, to 4 percent of liability.

No changes were made to the VAT regime during 2013.

Table 3.26 United Kingdom: VAT receipts, VTTL, composition of VTTL and Gap, 2009–2013 (EUR million)

	2009	2010	2011	2012	2013
VTTL	105,393	128,822	145,410	159,695	157,099
Liability on Household Consumption	66,953	82,615	94,035	103,683	103,776
Unrecoverable input liability on Intermediate consumption, Government and NPISH	28,532	35,434	39,464	42,053	40,034
Unrecoverable input liability on GFCF of exempt industries	8,499	9,475	9,884	10,901	10,497
Net Adjustments	1,408	1,298	2,027	3,058	2,791
VAT Revenues (Eurostat)	91,229	113,687	130,679	142,943	141,668
VAT Gap	14,163	15,135	14,731	16,752	15,431
VAT Gap as % of liability	13%	12%	10%	10%	10%

**Highlights for 2013**

The VAT Gap in the United Kingdom remained stable as a percentage of VTTL during 2013.

With nominal final consumption growing by a healthy 3.6 percent (and overall real GDP growth at 1.7 percent) the VTTL (in pound terms) rose by 3 percent. Revenue growth was also buoyant at 3.8 percent, leading to a reduction of the gap in pound terms, and stability in percentage terms at 10 percent.

The VAT regime was not substantially changed during 2013.

Appendix A – Derivation of Policy Gaps

In this appendix, we define the concepts used in Section 2.2 (Policy Gaps), and discuss some of the methodological choices made.

VRR, Notional Ideal Revenue and Policy Gap

We start from the definition of the VAT Revenue Ratio (VRR), as in OECD 2014:

$$\text{VRR} = (\text{Actual Revenue}) / (\text{Notional Ideal Revenue})$$

where the Notional Ideal Revenue is defined as the standard rate of VAT times the aggregate net consumption of the household, non-profit, and government sectors, as recorded in the national accounts.

This is shown in the following identity:

$$\begin{aligned} \text{VRR} &= [(\text{Actual Revenues})/\text{VTTL}] * (\text{VTTL}/\text{Notional Ideal Revenue}) \\ &= [1 - \text{VAT Gap}] * [1 - \text{Policy Gap}] \end{aligned}$$

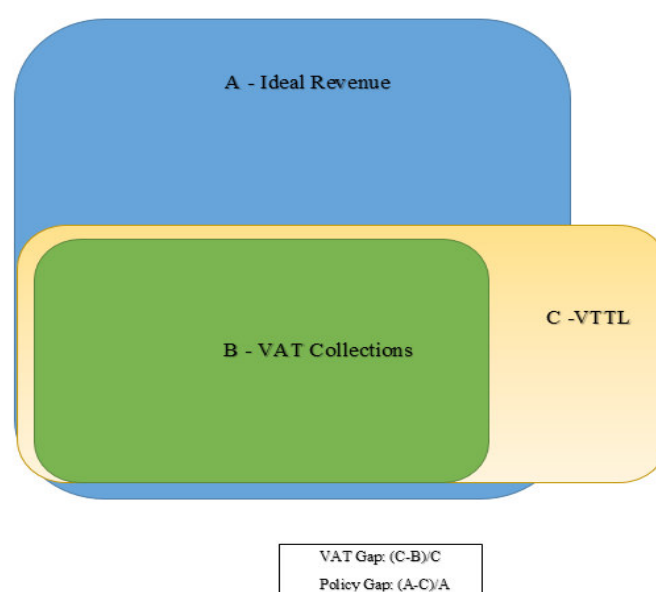
where

$$\text{Policy Gap} = (\text{Notional Ideal Revenue} - \text{VTTL})/\text{Notional Ideal Revenue}.$$

Here the Policy Gap is defined as one minus the ratio of the “legal” tax liability (the VTTL) to an ideal tax liability without reduced rates or exemptions. The Policy Gap can then be obtained with the following formula:

$$\text{Policy Gap} = [(1 - \text{VRR}) - \text{VAT Gap}] / [1 - \text{VAT Gap}].$$

Figure A.1. Policy Gap, VAT Collections and VAT Gap



Crucial for the calculation of the VRR is the notion of “ideal base”. National accounts for most countries report final consumption on a gross (i.e., VAT-inclusive) basis. Of the EU-26, only Lithuania reports pre-VAT values for the use tables. For the other countries, net consumption is estimated on the basis of gross consumption recorded in the use tables, from which VAT revenues (minus the share of VTTL resulting from GFCF liability of exempt sectors) are subtracted.

The interdependence among the various concepts presented is shown in Figure A.1.

Exemption Gaps and Rate Gaps

In this section we supplement the definition of Policy Gap by defining and discussing its two components, the Rate Gap and the Exemption Gap, which capture the loss in VAT liability due to the application of reduced rates, and the loss in liability due to the implementation of exemptions.

The Rate Gap is defined as the difference between the VTTL and what would obtain in a counterfactual situation, in which the standard rate, instead of the reduced, parking, and zero rates, is applied to final consumption. Thus, the Rate Gap captures the loss in revenue that the legislator in a particular country incurs into by adopting multiple VAT rates instead of a single standard rate.

The Exemption gap is defined as the difference between the VTTL and what would obtain in a counterfactual situation, in which the standard rate is applied to exempt products and services, and these goods and services are given the right to deduct VAT on inputs.⁷ Thus, the Exemption Gap captures the amount of revenue that might be lost on account of exempted goods and services. Note that the Exemption Gap is composed of the loss in the VAT on value added of exempt sectors, minus the VAT on their inputs, minus the VAT on GFCF inputs for these sectors. Thus, in principle, the Exemption Gap might be positive or negative (if the particular sector had negative value added, or if it had large GFCF expenditures relative to final consumption).

In algebraic terms, we have the following:

Definitions:

- effective rate for group *i* of products in case standard rate instead of zero rate, parking rate and reduced rates is applied (for final consumption),
- liability from final consumption of group *i* of products in case standard rate instead of zero rate, parking rate and reduced rates is applied, actual liability from intermediate consumption, gfcf and net adjustments,
- effective rate for group *i* of products in case exempt products within the group are taxed at standard rate,

⁷ The additive decomposition of the Policy gap into the Exemption and Rate gap presented in this report differs from that in Keen (2013). Keen (2013) defines the Rate gap as the loss from applying reduced and zero rates to the final consumption liability, measured as a percentage of the Notional Ideal Revenue. The Exemption gap measures unrecovered VAT accumulated in the production process as a percentage, on the contrary, of final consumption liability. Due to these definitions, the Policy gap can be split multiplicatively into gaps attributable to reduced rates and exemptions. Since the numerator of the “[1 - Rate gap]” and denominator of the “[1 - Exemption gap]” are equal, multiplication of these two components yields – VAT revenue as a percentage Notional Ideal Revenue, which equals “[1 - Policy gap]”.

– liability from final consumption of group i when exempt products within the group are taxed at standard rate.

Policy gap:

$$1 - P = \left(\frac{\sum_{i=1}^N T_i C_i}{\tau_s \sum_{i=1}^N C_i} \right) \left(\frac{\sum_{i=1}^N T_i^* C_i}{\sum_{i=1}^N T_i C_i} \right) = \left(\frac{\sum_{i=1}^N T_i^* C_i}{\tau_s \sum_{i=1}^N C_i} \right)$$

Exemption gap:

$$1 - P_E = \left(\frac{\sum_{i=1}^N T_i C_i}{\tau_s \sum_{i=1}^N C_i} \right) \left(\frac{\sum_{i=1}^N T_i^{*E} C_i}{\sum_{i=1}^N T_i C_i} \right) = \left(\frac{\sum_{i=1}^N T_i^{*E} C_i}{\tau_s \sum_{i=1}^N C_i} \right)$$

Rate gap:

$$1 - P_R = \left(\frac{\sum_{i=1}^N T_i C_i}{\tau_s \sum_{i=1}^N C_i} \right) \left(\frac{\sum_{i=1}^N T_i^{*R} C_i}{\sum_{i=1}^N T_i C_i} \right) = \left(\frac{\sum_{i=1}^N T_i^{*R} C_i}{\tau_s \sum_{i=1}^N C_i} \right)$$

By definition we have:

$$\begin{aligned} \tau_s \sum_{i=1}^N C_i &= \sum_{i=1}^N T_i^* C_i + \left(\tau_s \sum_{i=1}^N C_i - \sum_{i=1}^N T_i^* C_i \right) \\ &= \sum_{i=1}^N T_i^* C_i + \left(\tau_s \sum_{i=1}^N C_i - \sum_{i=1}^N T_i^{*R} C_i \right) + \left(\tau_s \sum_{i=1}^N C_i - \sum_{i=1}^N T_i^{*E} C_i \right) \end{aligned}$$

Thus:

$$\begin{aligned} P &= 1 - \left(\frac{\sum_{i=1}^N T_i^* C_i}{\tau_s \sum_{i=1}^N C_i} \right) = \left(\frac{\tau_s \sum_{i=1}^N C_i - \sum_{i=1}^N T_i^* C_i}{\tau_s \sum_{i=1}^N C_i} \right) = \left(\frac{2\tau_s \sum_{i=1}^N C_i - \sum_{i=1}^N T_i^{*E} C_i - \sum_{i=1}^N T_i^{*R} C_i}{\tau_s \sum_{i=1}^N C_i} \right) \\ &= P_R + P_E \end{aligned}$$

Appendix B - Statistical Appendix

Table B.1. VTTL (Euro millions)

	2009	2010	2011	2012	2013	
Austria	24,447	25,681	26,838	27,629	28,170	
Belgium	27,150	28,473	29,255	30,272	30,412	
Bulgaria	4,208	4,229	4,434	4,697	4,560	
Czech Republic	12,636	13,991	14,122	14,883	15,070	
Denmark	24,390	25,107	25,916	26,563	26,850	
Estonia	1,357	1,413	1,550	1,740	1,873	
Finland	15,673	16,691	17,955	18,524	19,660	
France	149,824	147,739	151,118	157,360	158,510	
Germany	196,095	199,283	212,245	216,984	221,878	
Greece	22,453	22,885	24,181	20,595	19,090	
Hungary	10,244	11,102	11,066	11,963	12,003	
Ireland	12,034	11,324	11,276	11,508	11,596	
Italy	135,805	136,817	144,425	141,332	141,437	
Latvia	1,946	1,841	2,189	2,391	2,414	
Lithuania	3,480	3,539	3,848	3,971	4,192	
Luxembourg	2,525	2,635	2,939	3,269	3,672	
Malta	601	664	736	777	796	
Netherlands	43,504	42,855	43,359	43,598	44,276	
Poland	29,094	33,517	36,602	37,175	37,911	
Portugal	13,993	15,392	16,359	15,330	15,068	
Romania	15,651	17,297	19,662	19,634	20,209	
Slovakia	6,438	6,516	6,844	7,054	7,209	
Slovenia	3,272	3,282	3,279	3,180	3,232	
Spain	63,214	65,796	67,677	68,262	73,444	
Sweden	29,188	34,908	38,123	39,762	40,867	
United Kingdom	105,393	128,822	145,410	159,695	157,099	
EU-26		954,614	1,001,797	1,061,409	1,088,147	1,101,498

Source: Own Calculations.

Table B.2. Household VAT Liability (Euro millions)

	2009	2010	2011	2012	2013
Austria	16,280	17,230	17,980	18,524	18,986
Belgium	15,763	16,281	16,847	17,240	17,656
Bulgaria	3,016	3,177	3,351	3,664	3,529
Czech Republic	7,509	8,428	8,659	9,304	9,531
Denmark	13,716	14,271	14,549	14,961	15,108
Estonia	925	989	1,067	1,163	1,257
Finland	8,961	9,243	9,859	10,265	10,953
France	90,889	92,700	95,147	98,891	99,718
Germany	124,984	124,549	132,667	135,841	139,315
Greece	14,763	16,033	18,031	15,607	14,571
Hungary	6,834	7,468	7,676	8,180	8,127
Ireland	7,026	6,922	6,923	7,266	7,294
Italy	93,213	95,191	101,338	100,141	99,750
Latvia	1,355	1,342	1,581	1,726	1,772
Lithuania	2,696	2,779	3,045	3,219	3,436
Luxembourg	958	1,010	1,094	1,127	1,166
Malta	351	374	393	420	438
Netherlands	22,398	22,769	23,122	23,719	24,793
Poland	19,139	21,881	24,014	25,015	25,764
Portugal	9,499	10,404	11,169	10,738	10,583
Romania	8,758	10,749	12,456	12,296	12,947
Slovakia	4,606	4,756	5,070	5,243	5,385
Slovenia	2,176	2,257	2,309	2,243	2,280
Spain	41,533	44,472	47,244	49,751	54,937
Sweden	15,806	18,823	20,343	21,098	21,803
United Kingdom	66,953	82,615	94,035	103,683	103,776
EU-26	600,108	636,710	679,966	701,324	714,875

Source: Own Calculations.

Table B.3. Intermediate Consumption VAT Liability (Euro millions)

	2009	2010	2011	2012	2013
Austria	4,751	4,795	4,900	5,067	5,184
Belgium	6,057	6,593	7,053	7,198	7,467
Bulgaria	652	579	613	575	588
Czech Republic	3,246	3,692	3,809	3,869	3,954
Denmark	6,861	7,117	7,310	7,620	7,745
Estonia	215	230	258	287	308
Finland	3,987	4,198	4,514	4,730	4,991
France	25,204	25,863	25,692	26,859	27,234
Germany	42,269	43,786	45,569	46,789	47,971
Greece	2,570	2,379	2,113	1,868	1,761
Hungary	2,075	2,263	2,220	2,279	2,283
Ireland	2,710	2,654	2,641	2,719	2,787
Italy	22,824	22,827	23,291	22,546	23,144
Latvia	340	333	398	422	430
Lithuania	418	442	419	407	392
Luxembourg	544	548	586	615	657
Malta	222	253	305	315	316
Netherlands	11,156	11,020	10,805	11,217	11,284
Poland	5,729	6,667	7,026	7,049	7,369
Portugal	2,893	3,094	3,173	3,040	3,063
Romania	2,764	2,446	2,834	2,651	2,815
Slovakia	1,133	1,104	1,162	1,181	1,205
Slovenia	527	542	533	520	520
Spain	12,233	11,768	12,037	12,404	13,444
Sweden	8,573	10,101	10,936	11,571	11,994
United Kingdom	28,532	35,434	39,464	42,053	40,034
EU-26	198,487	210,727	219,663	225,852	228,942

Source: Own Calculations. This includes unrecoverable VAT liability of exempt industries, general government and NPISHs.

Table B.4. GFCF VAT Liability (Euro millions)

	2009	2010	2011	2012	2013
Austria	2,191	2,387	2,477	2,568	2,586
Belgium	4,039	4,126	4,007	4,262	4,173
Bulgaria	459	422	399	397	384
Czech Republic	1,654	1,793	1,574	1,632	1,502
Denmark	3,139	3,022	3,292	3,178	3,179
Estonia	208	186	214	280	299
Finland	2,251	2,729	3,037	3,063	3,175
France	30,186	25,142	26,577	27,772	27,636
Germany	27,413	29,400	32,277	32,602	32,830
Greece	4,745	4,058	3,494	2,717	2,358
Hungary	1,278	1,292	1,074	1,269	1,410
Ireland	2,045	1,518	1,471	1,279	1,279
Italy	15,790	15,173	15,035	14,204	14,186
Latvia	235	151	196	223	192
Lithuania	366	307	368	331	347
Luxembourg	282	283	291	298	288
Malta	26	30	37	39	37
Netherlands	9,312	8,400	8,750	7,992	7,502
Poland	3,612	4,242	4,585	4,098	3,771
Portugal	1,293	1,485	1,653	1,190	1,085
Romania	3,754	3,567	3,696	4,045	3,922
Slovakia	703	670	607	628	620
Slovenia	453	376	322	309	328
Spain	8,493	8,596	7,425	5,127	4,061
Sweden	4,230	5,297	6,055	6,489	6,442
United Kingdom	8,499	9,475	9,884	10,901	10,497
EU-26	136,657	134,126	138,797	136,895	134,088

Source: Own Calculations. This includes unrecoverable VAT liability on investments of exempt sectors, incl. General Govt. and NPISHs.

Table B.5. VAT Revenues (Euro millions)

	2009	2010	2011	2012	2013
Austria	22,158	22,735	23,447	24,563	24,953
Belgium	23,600	25,230	26,019	26,896	27,226
Bulgaria	3,156	3,299	3,362	3,828	3,775
Czech Republic	9,784	10,420	11,246	11,377	11,694
Denmark	22,499	23,040	23,682	24,296	24,360
Estonia	1,224	1,257	1,363	1,508	1,558
Finland	15,176	15,533	17,315	17,987	18,848
France	130,303	135,578	140,552	142,526	144,414
Germany	177,701	180,213	189,910	194,034	197,005
Greece	14,876	15,958	15,021	13,712	12,593
Hungary	7,820	8,442	8,516	9,084	9,073
Ireland	10,325	10,067	9,755	10,219	10,371
Italy	86,544	97,586	98,650	96,170	93,921
Latvia	1,109	1,192	1,367	1,582	1,693
Lithuania	1,961	2,180	2,444	2,521	2,611
Luxembourg	2,457	2,562	2,824	3,093	3,485
Malta	457	477	520	536	586
Netherlands	40,086	42,654	41,610	41,699	42,424
Poland	23,056	27,466	29,764	27,783	27,780
Portugal	11,971	13,527	14,265	13,995	13,710
Romania	7,852	9,494	11,412	11,212	11,913
Slovakia	4,221	4,182	4,711	4,328	4,696
Slovenia	2,851	2,926	2,996	2,889	3,045
Spain	41,045	57,649	55,904	56,652	61,350
Sweden	28,199	33,825	36,631	37,834	39,091
United Kingdom	91,229	113,687	130,679	142,943	141,668
EU-26	781,660	861,179	903,965	923,267	933,843

Source: Eurostat.

Table B.6. VAT Gap (Euro millions)

	2009	2010	2011	2012	2013
Austria	2,289	2,945	3,392	3,066	3,217
Belgium	3,549	3,243	3,236	3,376	3,186
Bulgaria	1,052	930	1,072	869	785
Czech Republic	2,852	3,571	2,876	3,506	3,375
Denmark	1,892	2,067	2,234	2,267	2,489
Estonia	133	156	187	232	315
Finland	497	1,158	640	537	812
France	19,521	12,161	10,566	14,834	14,096
Germany	18,394	19,070	22,335	22,950	24,873
Greece	7,577	6,927	9,160	6,883	6,497
Hungary	2,424	2,660	2,550	2,879	2,930
Ireland	1,709	1,256	1,521	1,289	1,225
Italy	49,260	39,230	45,775	45,163	47,516
Latvia	836	649	821	808	720
Lithuania	1,519	1,358	1,404	1,450	1,580
Luxembourg	68	73	115	176	187
Malta	144	186	216	241	210
Netherlands	3,418	201	1,749	1,899	1,852
Poland	6,038	6,051	6,837	9,391	10,131
Portugal	2,022	1,865	2,094	1,335	1,358
Romania	7,799	7,803	8,251	8,422	8,296
Slovakia	2,217	2,334	2,133	2,726	2,513
Slovenia	421	356	283	291	186
Spain	22,169	8,147	11,773	11,610	12,094
Sweden	989	1,082	1,492	1,928	1,776
United Kingdom	14,163	15,135	14,731	16,752	15,431
EU-26	172,954	140,617	157,444	164,879	167,654

Source: Own Calculations.

Table B.7. VAT Gap (percent of VTTL)

	2009	2010	2011	2012	2013
Austria	9.4	11.5	12.6	11.1	11.4
Belgium	13.1	11.4	11.1	11.2	10.5
Bulgaria	25.0	22.0	24.2	18.5	17.2
Czech Republic	22.6	25.5	20.4	23.6	22.4
Denmark	7.8	8.2	8.6	8.5	9.3
Estonia	9.8	11.0	12.1	13.3	16.8
Finland	3.2	6.9	3.6	2.9	4.1
France	13.0	8.2	7.0	9.4	8.9
Germany	9.4	9.6	10.5	10.6	11.2
Greece	33.7	30.3	37.9	33.4	34.0
Hungary	23.7	24.0	23.0	24.1	24.4
Ireland	14.2	11.1	13.5	11.2	10.6
Italy	36.3	28.7	31.7	32.0	33.6
Latvia	43.0	35.2	37.5	33.8	29.8
Lithuania	43.7	38.4	36.5	36.5	37.7
Luxembourg	2.7	2.8	3.9	5.4	5.1
Malta	24.0	28.1	29.4	31.0	26.4
Netherlands	7.9	0.5	4.0	4.4	4.2
Poland	20.8	18.1	18.7	25.3	26.7
Portugal	14.5	12.1	12.8	8.7	9.0
Romania	49.8	45.1	42.0	42.9	41.1
Slovakia	34.4	35.8	31.2	38.6	34.9
Slovenia	12.9	10.8	8.6	9.1	5.8
Spain	35.1	12.4	17.4	17.0	16.5
Sweden	3.4	3.1	3.9	4.8	4.3
United Kingdom	13.4	11.7	10.1	10.5	9.8
EU-26	18.1	14.0	14.8	15.2	15.2

Source: Own Calculations.

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