Business & Entrepreneurship Journal, Vol. 14, No. 1, 2025, 13-25
ISSN: 2241-3022 (print version), 2241-312X(online)
https://doi.org/10.47260/bej/1412
Scientific Press International Limited

Understanding the Vat Gap in the EU: Toward smarter tax policies

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Abstract

The effective collection of taxes is the cornerstone of a fair tax system and is essential for equality and the avoidance of distortions in competition. In the European Union, value-added tax serves as a primary source of government income across all member states, as it represented 15,7% of total tax revenues in 2023 (CASE, 2024). In 2022, VAT revenue rose by a further 10.1%, with revenue 18.6% higher in level terms than compared to the 2019 pre-pandemic level.
Cross-border VAT fraud in the EU is responsible for revenue losses of approximately 50 billion euros annually (Poniatowski et al., 2020). Consequently, measuring the VAT Gap is very important for European countries for many reasons. The VAT Gap measures the discrepancy between the anticipated revenue from Value-Added Tax (VAT) and the actual revenue collected by tax authorities. One measure of the success of VAT enforcement actions and compliance is the VAT Gap, since it reflects the revenue loss due to cases of tax evasion, tax avoidance, the inability of businesses to pay VAT due to bankruptcies and liquidity issues, as well as the low performance of the tax administration in audits and the collection of tax revenues (Barbone, et al. 2013).
In order to reduce the VAT Gap, coordinated actions are required on various fronts, such as strengthening collaboration within the European Union and with non-EU countries, optimizing the efficiency of tax administrations, encouraging companies and tax authorities to cooperate and comply voluntarily as well as improving collection performance and reducing costs revenue collection.
Technology is also a key driver for the successful management of VAT, and therefore, more effective utilization of digital technology opportunities is required. Additionally, action is needed towards a modernized rate policy, by removing unjustified exemptions and reduced rates regarding VAT, expanding the tax base,

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Article Info: *Received:* March 8, 2025. *Revised*: March 23, 2025.
Published online: Mach 30, 2025.

enhancing the effectiveness of tax collection, and addressing tax evasion.
There is a need to simplify the current VAT system in order to reduce the compliance costs and administrative burden for both small and large businesses. It should become more efficient and neutral, as well as strong and fraud resistant (Fiscalis, 2020). The cooperation between Member States could highlight best practices that could contribute to streamlining the VAT system (European Commission, 2011), thereby reducing compliance costs while simultaneously ensuring VAT revenue.

JEL classification numbers: H26, H21, H83.
Keywords: Vat Gap, Tax Compliance, Tax Evasion, Digital Tax Administration, European Union, Fiscal Policy.

1. Introduction

The effective collection of taxes (Poniatowski, et al. 2020) is a cornerstone of a fair tax system. Uncollected taxes lead to revenue shortfalls for Member State budgets and can impose an undue burden on compliant taxpayers who meet their tax responsibilities. Moreover, efficient tax collection is crucial for promoting fairness and avoiding competitive imbalances.
Reducing the size of the VAT gap leads to increased budget revenues and, more importantly, fair market competition and a healthy business environment. The sources of the VAT gap may be macroeconomic, demographic, or institutional in nature, but they are also related to citizens' trust in the state (Ciobanu, et al. 2023). According to the research (Ciobanu, et al. 2023), the design of a tax system regarding the allocation and number of VAT rates is not one of the key factors determining the VAT gap. Reforming the tax system by redistributing or reducing VAT rates may not ultimately contribute to reducing the VAT gap.
The implementation of new information technology in tax administration will enhance the efficiency of VAT collection. Additionally, special attention should be paid to more effective data collection and utilization, which, with the help of new technology, will aid in increasing the detection of VAT fraud (Ciobanu, et al. 2023). Finally, the quality and transparency of public institutions strengthen citizens' trust in the state and their sense of justice, which will lead to better efficiency in tax collection. Countries characterized by a high institutional culture do not face significant issues with the VAT gap (Ciobanu, et al. 2023).
A more systematic approach to VAT audit selection and compliance activities, along with the optimal utilization of data analytics, can lead to improvements in VAT revenues (World Bank Group & Brian Erard, 2023).
The research conducted (Butu, et al. 2021) has shown that in countries with a high level of tax freedom, a high standard of living and access to knowledge, as well as lower levels of corruption, taxpayers are more willing to comply with VAT requirements, resulting in a reduction of the VAT gap.
One of the main sources of income for the EU's Member States is Value Added Tax

(VAT) (Oczkowski, 2020), and VAT regulations are essential to the EU Single Market. (Bonch, et al. 2023). Value-added taxes account for approximately one-fifth of total tax revenues in Europe. However, European countries differ significantly in the efficiency of VAT revenue collection (Elke Asen, 2021).

“One way to measure a state's effectiveness in VAT collection is through the "VAT gap." This metric assesses the difference between the VAT revenue actually collected (Elke Asen, 2021) and the potential revenue that could be collected under ideal conditions, applying the standard rate across all final consumption”. The gap between actual and potential VAT revenues arises from two main factors: 1) non-compliance with VAT obligations, known as the "compliance gap," and 2) policy choices that exempt certain goods and services from VAT or apply a reduced rate, referred to as the "policy gap" (Elke Asen, 2021).

The VAT gap is not only associated with fraud but also with tax evasion and tax avoidance, as well as with bankruptcies, delayed tax payments, and issues related to reporting in national accounts. For this reason, it should be approached with caution, serving as an estimate of VAT non-compliance as well as a general indicator of the efficiency of the VAT system and the capacity of tax administrations to collect VAT (Poniatowski, et al. 2020).

The VAT gap tends to be negatively correlated with the economic cycle. Consequently, a slowdown in economic growth is expected to be associated (assuming other factors remain constant) with an increase in the VAT gap (Poniatowski, et al. 2020).

On one hand, consumption taxes promote growth as they do not negatively affect savings and investments. Furthermore, taxes like Value Added Tax (VAT) do not burden exports, thereby not adversely impacting the competitiveness of businesses. However, other indirect taxes, such as excise duties on fuels and similar goods, create competitiveness issues since they are not deductible like VAT.

On the other hand, a consumption tax, such as a uniform tax on all goods and services, essentially exacerbates existing inequality. In absolute terms, it affects the poor in the same way as the rich, but in relative terms, it impacts the poor significantly more. Consequently, a high VAT rate intensifies inequality.

Indirect taxes are inherently unfair but are often accepted as the most practical solution, particularly when a country urgently needs to increase its public revenues. This is because indirect taxes are generally considered to have higher and more efficient collectability. This was also the case for Greece, which implemented changes (increases) in VAT rates to boost its already low public revenues in the short term.

The size of the shadow economy, GDP per capita, and unemployment are the main determinants of the VAT gap (Balios, et al. 2024). The shadow economy and unemployment have a greater impact on the VAT gap in less developed countries, whereas in developed countries, the VAT gap is mainly affected by unemployment (Balios, et al. 2024).

The VAT gap is positively impacted by the shadow economy, but negatively by economic growth (Wijaya, et al. 2024). Additionally, corruption control and trade

openness do not significantly affect the VAT gap, but corruption control negatively influences the relationship between the shadow economy and the VAT gap. This indicates that if EU countries implement effective corruption control measures, they will be able to reduce the negative impact of the shadow economy on VAT revenues (Wijaya, et al. 2024).
In 2022, the VAT compliance gap amounted to EUR 89.3 billion, or -in relative terms- 7% of the VTTL. Compared to 2021, the gap went up by EUR 13.3 billion and 0.4 percentage points (of the VTTL) (CASE, 2024). Against this backdrop, compared to 2019 – the last pre-pandemic year for which data of similar quality to that of 2022 is available – the nominal gap in 2022 was EUR 35 billion and 4 pp. lower. This means that the reduction in the VAT compliance gap observed during the COVID-19 pandemic largely persisted into 2022.
One of the main challenges in achieving the VAT revenue target is addressing taxpayer non-compliance with VAT payment obligations. Non-compliance ranges from the legal exploitation of loopholes in tax systems to tax evasion or large-scale organized tax fraud. It can also be unintentional, arising from administrative errors, omissions, or non-fraudulent bankruptcies, among other factors (Bonch, et al. 2023). Other significant sources of VAT revenue losses include policy decisions that narrow the tax base or reduce VAT obligations for specific parts of it. These choices are often made to achieve redistribution goals or to provide incentives to taxpayers, but they come at the cost of reduced VAT revenues. Targeted policy interventions made a notable difference, especially those related to the digitization of tax systems, real-time transaction reporting, and electronic invoicing.

2. The Evolution of the VAT Gap Over Time

2.1 Until the Year 2012

The overall VAT revenues rose by slightly more than 2% in 2012, from €904 billion in 2011 to €922 billion in 2012. The VAT gap stood at 17.59% in 2011 and decreased to 16% in 2012, marking a reduction of approximately 1.6%. The percentages among Member States varied, ranging from a low of 5% in the Netherlands and Finland to a high of 44% in Romania. The average VAT gap was approximately 15%. In Greece, the VAT gap in 2011 was 38% and decreased to 33% in 2012. Notably, during the 2011-2012 period, only Lithuania and Romania had worse performances than Greece. These overall developments were consistent with the general economic conditions, as the EU economy contracted by 0.4% in 2012.

Here is the chart showing the VAT gap percentages for the Netherlands, Finland, Greece, Romania, and the EU average in 2012:

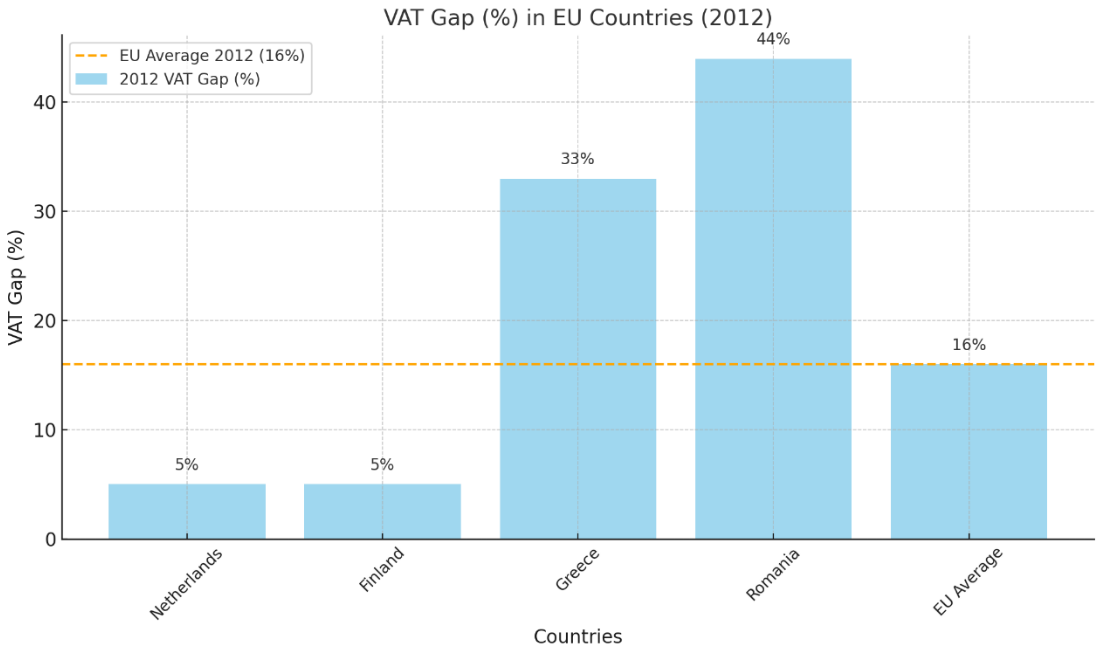

Figure 1: VAT Gap (%) in EU Countries (2012)

2.2 The VAT Gap During the Period 2014–2017

VAT revenues in 2015 increased by an average of 4.5% in the EU-27, a combination of 2.9% economic growth and a 2.4% improvement in VAT compliance. Nominally, the EU-28 Member States' VAT disparity was €151.5 billion (Wolfgang Hiller, 2017) in 2015.

The share of VAT decreased in 2015 to 12.8%, down from 14.1% in 2014. In absolute terms, the VAT gap decreased by €8.7 billion, reaching its lowest level since 2011. Sweden (-1.42%), Spain (3.52%), and Croatia (3.92%) had the smallest gaps. Greece (28.27%), Slovakia (29.39%), and Romania (37.18%) had the biggest gaps. Overall, the VAT gap was less than 10.8% in half of the EU-27 member states (Marketa Arltova, Jan Pavel, Jana Tepperova, & Hana Zidkova, 2020). The real GDP growth in the EU was 2.2% in 2015, up from 1.7% in 2014 and 0.2% in 2013. Here is the chart illustrating the VAT gaps for Sweden, Spain, Croatia, Romania, Slovakia, and Greece in 2015:

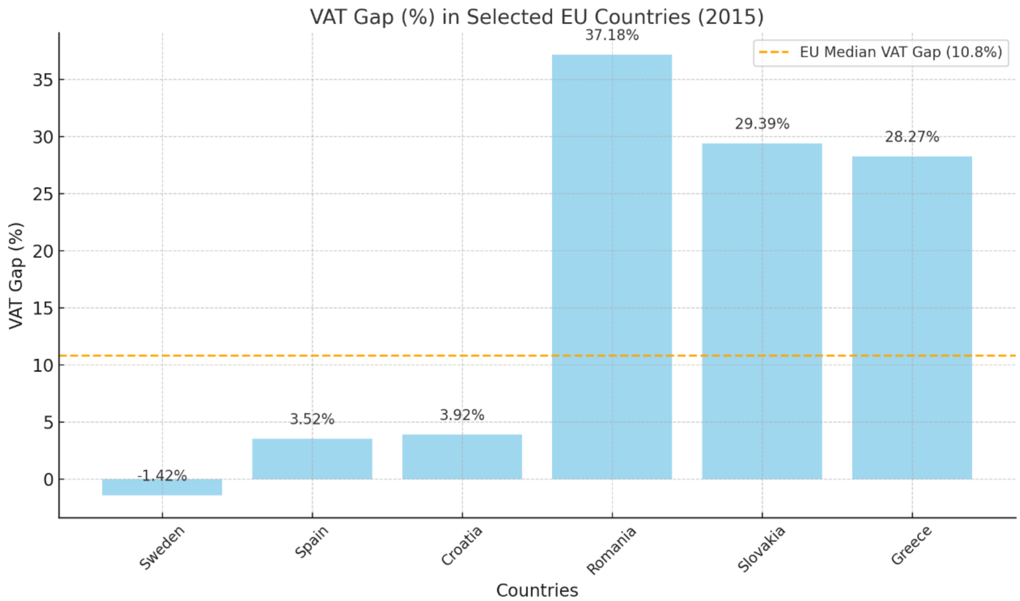

Figure 2: VAT Gap (%) in Selected EU Countries (2015)

Malta recorded the best performance in VAT compliance, with an improvement of 28.2%, followed by Romania at 9.9% and Spain at 5.2%. Greece, however, registered the largest decline in compliance within the EU, with a 4% decrease. Despite this, VAT revenues in Greece increased by 1.6%, primarily due to high taxation, which offset the compliance loss. The increase in the EU's real gross domestic product (GDP) was 2.0% in 2016, a 0.2% decline compared to 2015.

The VAT gap in the EU-28 Member States decreased to €147.1 billion in 2016, which is less than €150 billion in nominal terms (Goya Lirio Irene, 2019). Relatively speaking, the VAT gap as a percentage of total VAT Tax Liability (VTTL) dropped from 13.2% in 2015 to 12.3%, which was the lowest amount during the 2012–2016 study period.

The largest reductions in the VAT gap, exceeding 5%, were recorded in Bulgaria, Latvia, Cyprus, and the Netherlands. The smallest VAT gaps were observed in Luxembourg (0.85%), Sweden (1.08%), and Croatia (1.15%). The largest gaps (Grzegorz Poniatowski, Adam Smietanka, & Misha Bonch Osmalovsk, Study and reports on the Vat Gap in the EU, 2020) were recorded in Romania (35.88%), Greece (29.22%), and Italy (25.90%). The VAT gap followed a downward trend, decreasing from 17.59% in 2011 to 16% in 2012, 14.1% in 2014, 13.2% in 2015, and 12.3% in 2016.

Here is the line chart illustrating the downward the VAT gap's trend in the European Union from 2011 to 2016 (Ciobanu, et al. 2023).

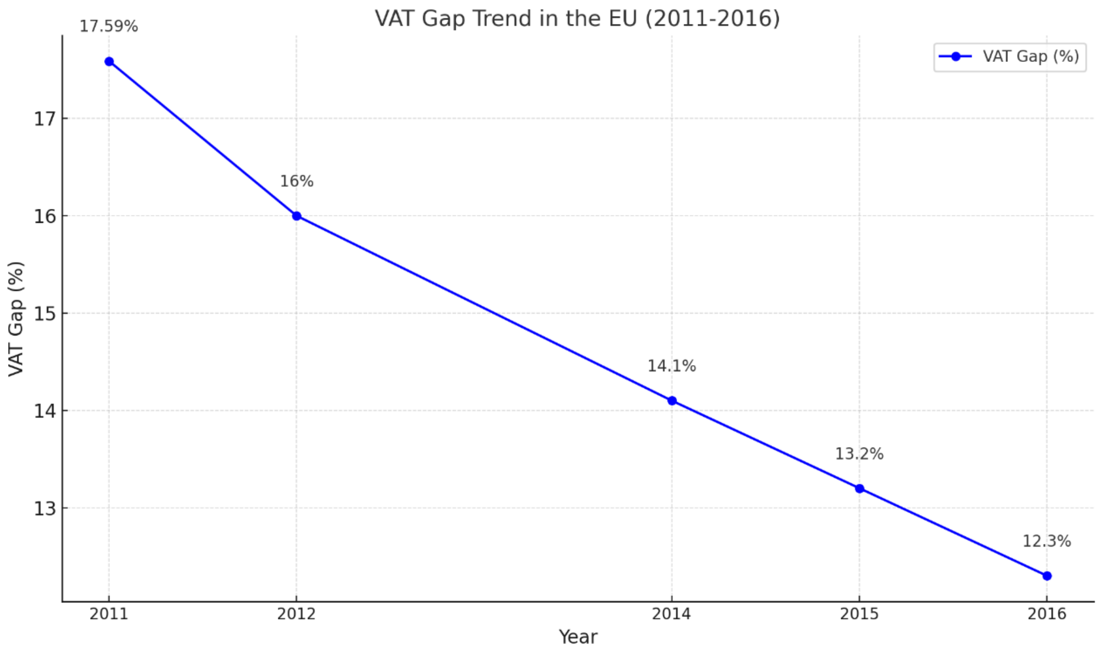

Figure 3: VAT Gap Trend in the EU (2011-2016)

The greatest improvement in reducing the VAT gap since 2012 was recorded by Malta (-26%), Latvia (-13%), Slovakia (-11%), and Hungary (-9%), while Greece reduced its VAT gap by just 1%. The largest increase in the VAT gap since 2012 was observed in Finland, with a rise of 3%. On average, changes in the tax base were the primary source of increased VAT revenues, contributing a 2.6% rise. Changes in compliance were almost equally significant, contributing to a 2.1% increase.

2.3 The VAT Gap After 2017

The total VAT gap in the EU decreased by almost €1 billion in nominal terms, reaching €140.04 billion in 2018, which was a slowdown from the €2.9 billion reduction in 2017 (Wolfgang Hiller, 2017). Greece, while consistently holding the second-highest VAT gap, at 30.1%, showed a reduction in its deficit in 2018 compared to 2017 (€7.399 billion in 2017 versus €6.570 billion in 2018). In percentage terms, the gap decreased from 34% in 2017 to 30.1% in 2018.
Similar to 2017, Romania had the largest VAT gap in 2018 (33.8%), followed by Greece (30.1%) and Lithuania (25.9%) (Wolfgang Hiller, 2017). The smallest gaps were observed in Sweden at 0.7%, Croatia at 3.5%, and Finland at 3.6%. The average VAT gap rate in 2018 was 9.2%. The most significant reductions in 2018 were in Hungary (-5.1%), Latvia (-4.4%), and Poland (-4.3%).
Here is the line chart illustrating the VAT gap percentages for Romania, Greece, Lithuania, Finland, Croatia, Sweden, and the EU average in 2018:

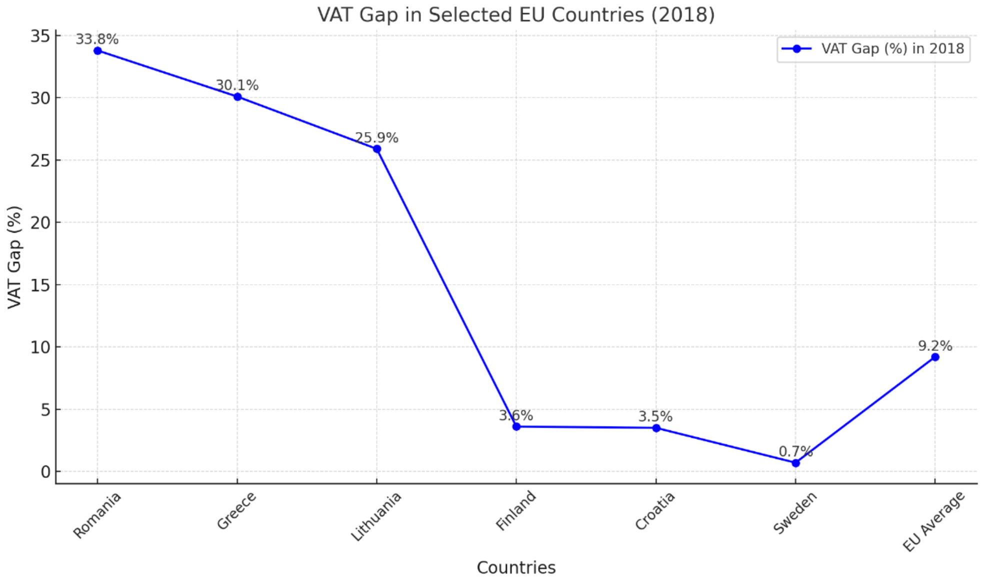

Figure 4: VAT Gap in Selected EU Countries (2018)

Variations in tax compliance, fraud, evasion, bankruptcies, insolvencies, and the efficiency of tax administration among the states are highlighted by the disparities in VAT gap estimates among the Member States. While they offer insight into the performance of national tax administrations, these estimates should not be evaluated in isolation. Additionally, the size of the VAT gap can be influenced by economic developments and the quality of national statistics.

Nominally, the EU's overall VAT gap shrank by almost €6.6 billion in 2019, reaching €134 billion. This reduction represents a significant improvement compared to the previous year, which saw a decrease of €4.6 billion. In 2019, Romania recorded the highest national VAT compliance gap, losing 34.9% of its VAT revenues, followed by Greece at 25.8% and Malta at 23.5%. The smallest VAT gaps were observed in Croatia (1.0%), Sweden (1.4%), and Cyprus (2.7%).

In a continuation of the post-pandemic economic recovery, almost all EU Member States recorded growth in real GDP in 2022. The only exception was Estonia, where real estate operations, the energy industry, commerce, agriculture, and financial services impacted real GDP. Overall, real GDP growth in the EU was recorded at 3.5%, following a 5.9% expansion in 2021.

The median VAT compliance gap in the EU in 2022 was 6% of the VTTL. The estimates of the VAT (Poniatowski, et al. 2019) compliance gap for the majority (18 out of 27) of the Member States ranged from 0 to 10% of the VTTL. The smallest compliance gaps were estimated for Cyprus (-0.7%), Portugal (1.3%) and Ireland (1.7%). Theoretically, the VAT compliance gap cannot be negative, but in Member States where non-compliance is already very low, negative estimates can occur due to statistical and measurement errors. On the opposite side of the ranking are Romania (30.6%), Malta (25.9%), Slovakia (14.6%), and Lithuania (14.6%). In nominal terms, the largest gaps were estimated in Italy (EUR 16.3 billion), Germany (12.9 billion) and France (EUR 12.8 billion) (CASE, 2024).

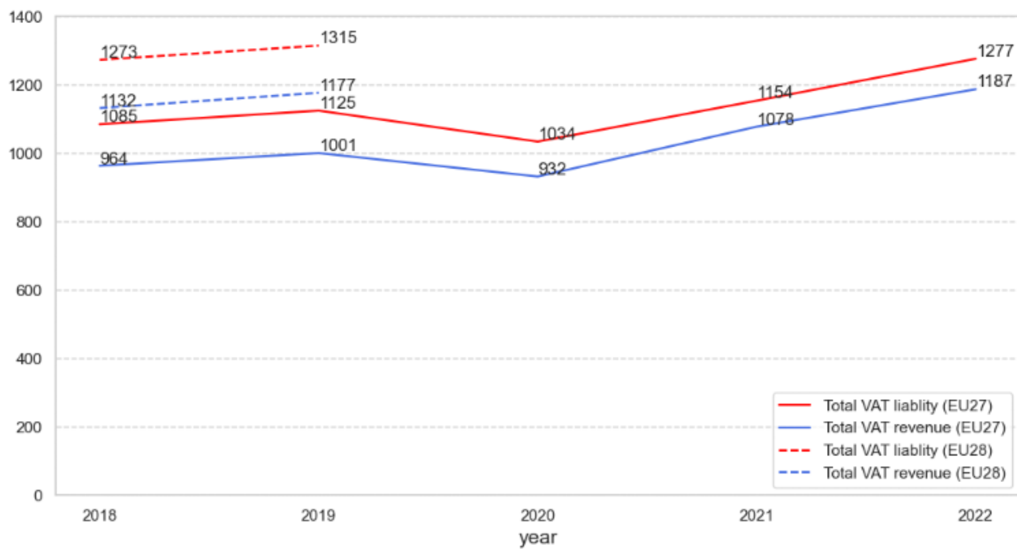

Figure 5: Evolution of VAT liability and revenue in the EU27 (EUR billion, 2018-2022)

Source: European Commission 2024

The largest decreases in the size of the VAT compliance gap were observed in Cyprus (-6.8 pp), Latvia (-5.2 pp.), and Romania (-4.2 pp.). In Cyprus, this was a continuation of the downward trend marking a decrease in the VAT compliance gap of over 15 pp. over the space of two years. Comparably large decreases in the gap during such a short period of time were rarely observed before. The largest increases in the size of the VAT compliance gap were estimated for Slovenia (+5.6 pp.), Denmark (+4.1pp), Belgium (+4.0 pp.) and Bulgaria (+3.9 pp.) (CASE, 2024). These positive changes are mainly attributed to increased compliance, which may have been driven by support measures tied to tax payments and a reduction in the frequency of bankruptcies. They may also be related to shifts in household consumption patterns toward categories where compliance is higher.
Several Member States have successfully reduced the VAT compliance gap over the last nine years. The 2023 VAT gap in the EU study (Bonch, et al. 2023) highlighted four Member States (Hungary, Latvia, Poland and Slovakia) that were particularly successful. The newest estimates confirm Hungary, Poland, Slovakia and Latvia as countries successful in reducing their VAT compliance gap between 2013 and 2022.

Figure 6: Development of the VAT compliance gap in selected Member States (2013-2022)

3. Measures to Combat the VAT Gap

Reliable and systematic research, as well as data collection and collaboration in the field of tax fraud, can reduce levels of tax evasion in the VAT sector. Additionally, electronic contactless payments, e-invoicing, the online transmission of receipts to tax authorities, and increased transparency in the activities of public institutions could further improve the VAT gap (Agnieszka Szczypińska, 2019).

Given the current magnitude of the VAT gap, immediate action is needed in three areas: improving voluntary compliance, fostering better administrative cooperation, and improving the overall effectiveness of European tax administrations (European Commission, 2016). Additionally, the surge in e-commerce demands a new approach to tax collection.

Encouraging greater collaboration among various authorities to combat organized crime networks involved in carousel fraud, enhancing collaboration with third countries in the field of VAT through the negotiation of arrangements between the EU and non-EU countries for administrative collaboration and mutual support in VAT recovery and creating synergies with international organizations (such as IOTA, the IMF, the OECD, CIAT, and CEF) in the area of tax compliance.

Building trust and collaborating are crucial to enhance the efficiency of European tax administrations, reinforcing the European tax framework and addressing VAT fraud within the single market. Additionally, it is essential to facilitate the development of a framework for enhancing human capacity among employees in the tax sector.

Improving voluntary compliance and fostering greater collaboration between tax authorities and businesses are also crucial (European Commission, 2016). Lastly, e-commerce, the collaborative economy, and other new business models represent both a challenge and an opportunity for tax collection. Policies need to become more effective, particularly in leveraging the opportunities offered by digital technology and reducing the costs of revenue collection. This approach should be based on greater trust between businesses and tax administrations, as well as among the tax administrations within the EU.

In order to create a final VAT system, the Commission now intends to submit a legislative proposal. EU lawmakers' consensus that the VAT system should be based on the idea of taxation in the nation where the goods are being delivered will serve as the foundation for this final system (European Commission, 2016). It aims to improve cross-border trade activity within the EU by reducing tax evasion and simplifying procedures for businesses.

Throughout the whole production and distribution chain, consistent treatment of domestic and international transactions will be ensured by a taxation system for cross-border supplies, reinstating the core principles of VAT in cross-border trade, particularly the system of segmented payments with a self-assessment mechanism. Consequently, this change is expected to reduce cross-border fraud by approximately €40 billion (80%) annually within the EU.

Finally, the Commission has proposed a transition to a cross-border digital reporting system based on electronic invoicing for business-to-business transactions. This new system will ensure that Member States' authorities are fully informed (Borg, et al. 2023) about transactions almost in real time, enabling them to promptly address cases of VAT fraud, particularly "missing trader" or "carousel" fraud.

More specifically, the measures that are being proposed and many of which have already started to be implemented in the area of reducing the VAT gap through technology include electronic invoicing, which reduces cases of fraud and errors as data is directly connected to the tax administration. Additionally, real-time reporting systems allow for the detection and prevention of fraud as transactions are transmitted in real time. Such reforms have already been implemented in countries such as Latvia, Slovakia, Hungary, and Greece. In the field of technology, the implementation of data analytics tools is also proposed to predict and detect incidents of non-compliance, as well as the use of artificial intelligence to enhance the fight against VAT fraud. The further expansion of digital transactions will help reduce tax evasion by creating digital trails.

Another measure is the implementation of reverse charge mechanisms, through which the responsibility for VAT payment is transferred from the supplier to the customer, in order to reduce the likelihood of fraud. Additionally, reforms in tax administration are required to simplify processes and improve compliance monitoring by increasing the auditing powers of tax authorities. Stricter penalties for non-declaration of VAT and enhanced compliance requirements are also needed.

4. Conclusion

The Vat Gap is a crucial measure for assessing the effectiveness (European Commission, 2020) of VAT enforcement and compliance in EU Member States. It reflects losses due to tax evasion, avoidance, bankruptcies, and administrative inefficiencies.

There has been a notable decrease in the VAT gap, particularly between 2020 and 2021, due to improved compliance and targeted policy measures. Advanced digitization, real-time reporting, and electronic invoicing played significant roles in reducing VAT gaps.

To further improve the VAT gap, coordinated actions are needed, such as enhancing cooperation among EU Member States and with third countries, establishing more effective tax administration, strengthening voluntary compliance, and improving the efficiency of tax collection.

Perhaps the most significant reform is the utilization of new technologies such as electronic invoicing and real-time transaction reporting, which help combat fraud. Additionally, there is a need for changes in tax policies, including broadening the tax base and eliminating multiple VAT exemptions. The creation of a simpler VAT system is essential to reduce administrative burdens and compliance costs, leading to more efficient and effective tax systems that are resistant to fraud. Finally, collaborations between countries and international organizations can promote best practices and enhance compliance.

Despite significant progress in countries such as Romania, Greece, and Malta, they continue to have high VAT gap rates, highlighting the need for more coordinated and efficient tax administration. The utilization of digital technologies and the strengthening of trust between tax administrations and businesses are crucial factors for improving compliance and, consequently, increasing revenues.

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