

Republic of Poland: Technical Assistance
Report-Revenue Administration Gap
Analysis Program-The Value-Added Tax
Gap



REPUBLIC OF POLAND

TECHNICAL ASSISTANCE REPORT—REVENUE ADMINISTRATION GAP ANALYSIS PROGRAM—THE VALUE-ADDED TAX GAP

December 2018

This Technical Assistance report on the Republic of Poland was prepared by a staff team of the International Monetary Fund. It is based on the information available at the time it was completed on June 2018.

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Revenue Administration Gap Analysis Program—The Value-Added Tax Gap

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Technical Assistance Report

June 2018

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GLOSSARY

EC	European Commission
EU	European Union
GDP	Gross Domestic Product
IMF	International Monetary Fund
KAS	National Fiscal Administration
MoF	Ministry of Finance
PLN	Polish złoty (currency)
RA-GAP	Revenue Administration Gap Analysis Program
SAF	Standard Audit File
TAXUD	Taxation and Customs Union Directorate-General (EC)
VAT	Value-added Tax

EXECUTIVE SUMMARY

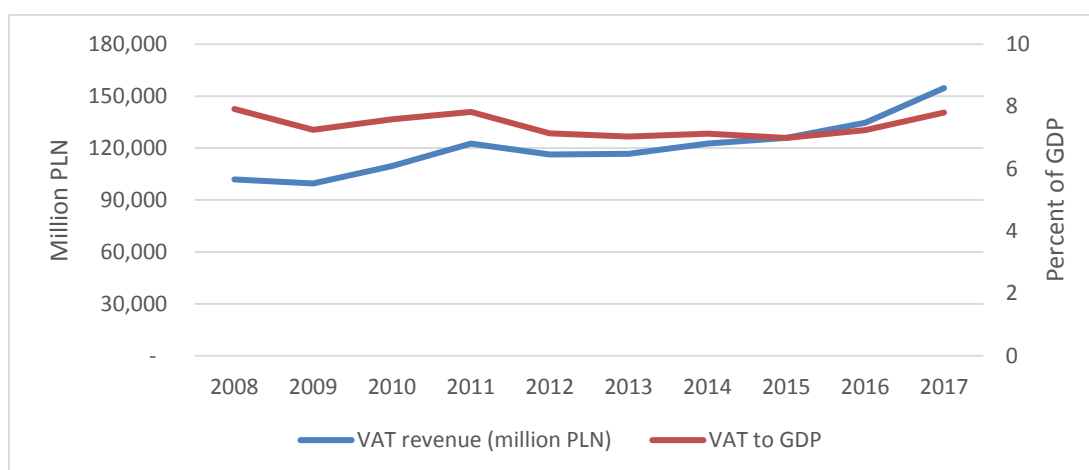
This report presents the results of applying the Revenue Administration Gap Analysis Program (RA-GAP) value-added tax (VAT) gap estimation methodology¹ to Poland for the period 2010–16. The RA-GAP methodology employs a top-down approach for estimating the potential VAT base, using statistical data from national accounts on value-added generated in each sector. There are two main components to this methodology for estimating the VAT gap: 1) estimate the potential VAT collections for a given period; and 2) determine the accrued VAT collections for that period. The difference between the two values is the VAT gap.

RA-GAP provides estimates of the two components of the tax gap: the compliance gap and the policy gap. The compliance gap is the difference between the potential VAT that could have been collected given the current policy framework and actual accrued VAT collections. The policy gap is the difference between the overall tax gap and the compliance gap. To put the level and trends of the compliance gap into context it is also necessary to analyze the level and trends of the overall tax gap and the policy gap.

Main Findings

Nominal VAT revenues in Poland increased over the period 2008 to 2017, but real revenues declined from 2008 to 2015, recovering in 2017 (Figure 1). While nominal VAT revenues increased; measured as a percent of gross domestic product (GDP), they fell from 7.9 percent in 2008 to 7.0 percent in 2015, recovering to 7.8 percent in 2017.

Figure 1. VAT Revenues (2008–17)

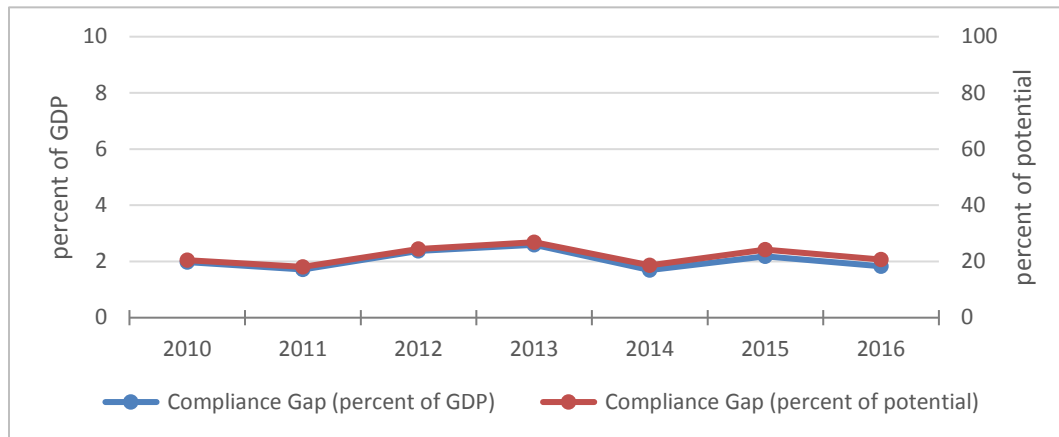


Source: Eurostat.

¹ The RA-GAP methodology is published as a technical note, see [The Revenue Administration–Gap Analysis Program: Model and Methodology for Value-Added Tax Gap Estimation](#).

The compliance gap was around 20 percent of potential VAT during the period 2010 to 2016 (Figure 2). The compliance gap rose from 21 percent of potential VAT to a peak of 27 percent in 2013, before falling back to around 21 percent in 2016. Overall, this is equivalent to 2.0 percent of GDP, rising to 2.6 percent and falling back to 1.8 percent.

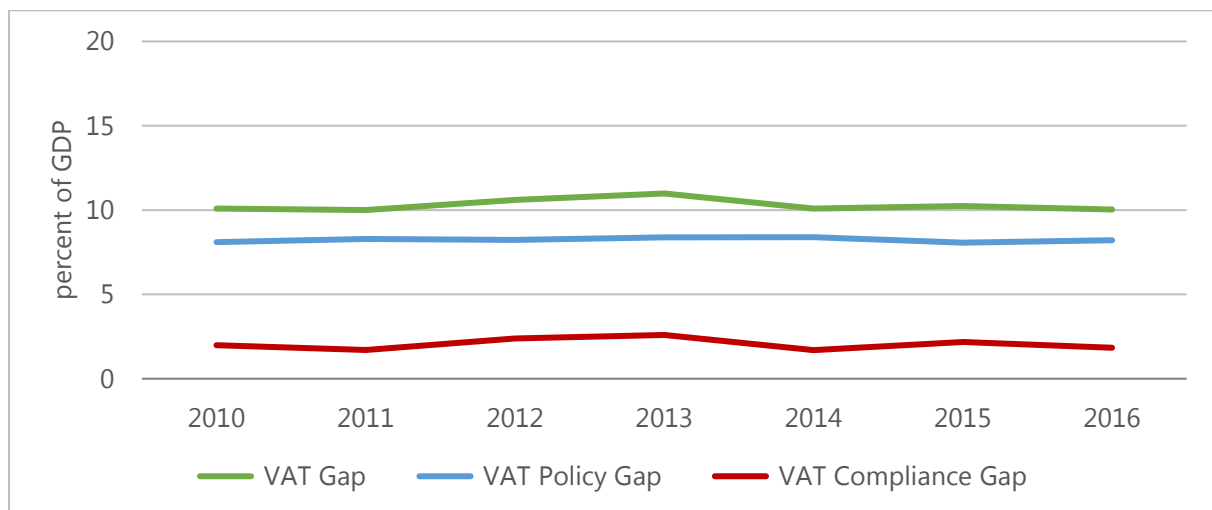
Figure 2. VAT Compliance Gap (2010–16)



Source: staff calculations.

The total VAT gap, including the policy gap, was just over 10 percent in 2010 and 2016, rising to a peak of 11 percent in 2013 (Figure 3). The policy gap in Poland was reasonably stable through the period 2010 to 2016, at between 8.1 to 8.4 percent of GDP, with the result that the changes to the overall gap were due mainly to changes in the compliance gap. Overall, the policy gap accounted for about 80 percent of the total gap.

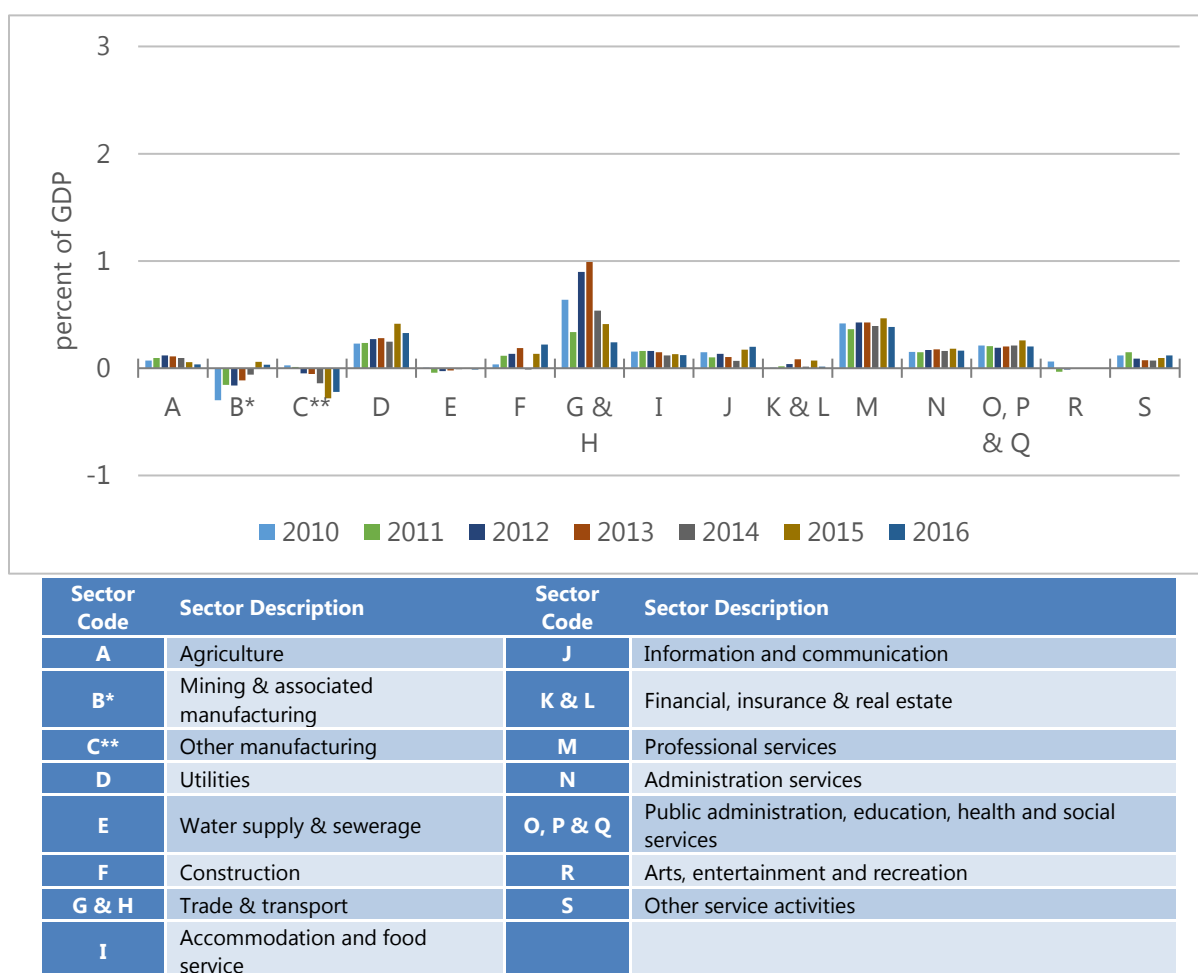
Figure 3. VAT Gap, Compliance Gap, and Policy Gap (2010–16)



Source: staff calculations.

The compliance gap is largely in the trade and transport sectors, and professional and other services sectors (Figure 4).² There are significant compliance gaps observed in the trade and transport, and professional and other personal services sectors. There is also a gap observed in the utilities sector, but this is likely due to data issues, since this sector is generally low risk but difficult to measure accurately in national accounts. There may also be significant gaps in the hotel and restaurant sectors, and perhaps emerging in the information and communication sector. Changes in the overall compliance gap in recent years have been driven by changes in the gap in the trade and transport sectors. The decrease in the compliance gap in the trade and transport sectors is consistent with compliance initiatives in recent years, largely targeted at these sectors.

Figure 4. The Compliance Gap by Sector (2010–16)



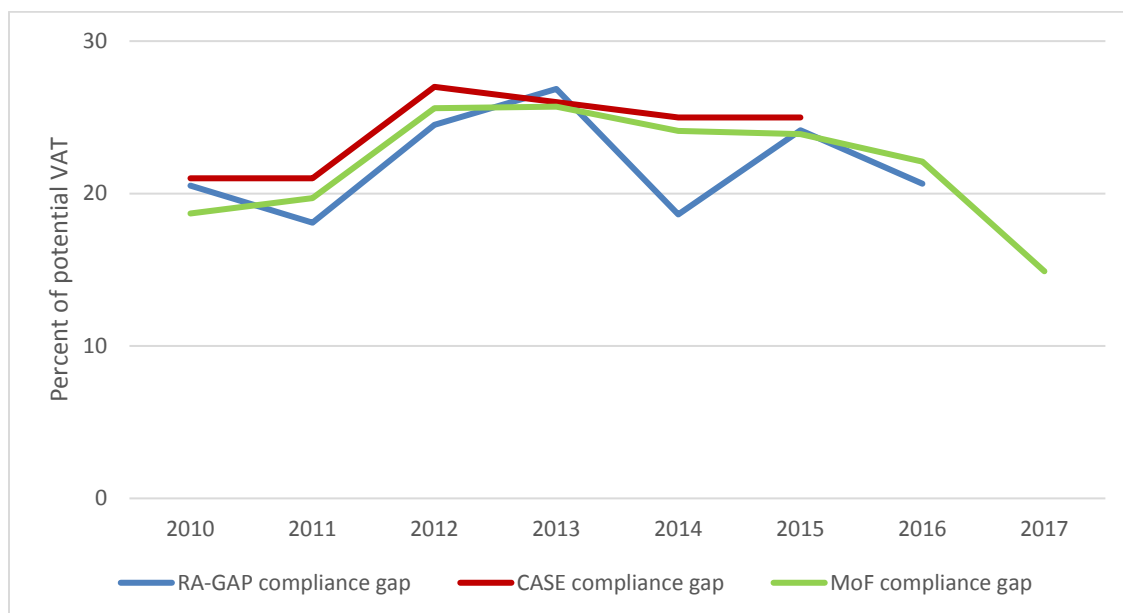
Source: staff calculations.

² The sectoral decomposition of the compliance gap shown here should be taken as a broad risk indicator, see paragraph 28 below.

(continued...)

The VAT compliance gap estimates produced for the European Commission (EC)³ and by the Ministry of Finance (MoF), are generally consistent with the estimates produced using the RA-GAP methodology (Figure 5). Overall, the VAT compliance gaps produced for EC Taxation and Customs Union Directorate-General's (TAXUD) study of VAT gaps in the European Union (EU), those estimated by the Macroeconomics Policy Department in the MoF and those estimated by RA-GAP are broadly consistent, rising from around 21 percent of potential VAT in 2010 to a peak of around 27 percent in 2012–13 and falling back to around 21 percent in 2016. The series do diverge significantly in 2014, where the RA-GAP method creates a dip in the compliance gap, whereas the other two methods do not. However, this does not affect the observed trend from 2013, which is consistent for all three measures. This consistency is to be expected, since all three estimates rely on (balanced) national accounts data to estimate the potential VAT base.

Figure 5. Compliance Gap Estimates (2010–16)



Source: Country authorities, EC TAXUD, and staff calculations.

Recommendations for Further Work

- Continue to estimate the VAT compliance gap as part of fiscal monitoring of revenue outturns against forecast projections, including a periodic update of the RA-GAP model.
- Use VAT gap estimates to evaluate progress in improving tax morale in Poland and closing the VAT gap.
- Broaden the scope of tax gap analysis to include other taxes.

³ "Study and Reports on the VAT Gap in the EU-28 Member States: 2017 Final Report", TAXUD/2015/CC/131, published by EC TAXUD, Warsaw, September 18, 2017

- Use tax gap analysis as a foundation for strategic compliance risk management.
- Investigate the causes of the apparent gap in the utilities sector to determine if compliance risks are present.
- Consider measures to tackle compliance risks in professional and personal services.
- Consider closer working and information sharing with the Central Statistical Office.
- Use the national database of VAT returns and payments data created for RA-GAP to develop a more systematic, national approach to risk analysis.
- Consider developing the national database of individual VAT transactions created by the new Standard Audit File (SAF) initiative as a tool for compliance risk analysis, alongside the database of taxpayer returns and payments.

I. BACKGROUND

1. The IMF RA-GAP program provides a comprehensive quantitative analysis of the gap between potential revenues and actual collections, known as the compliance gap. The program is conducted by the Revenue Administration divisions of the Fiscal Affairs Department, initially focusing on gap analysis of the value-added tax (VAT). The RA-GAP model uses an approach that allows for a breakdown of the compliance gap by sector of economic activity, thereby helping revenue administrations monitor and identify what is contributing to this gap.

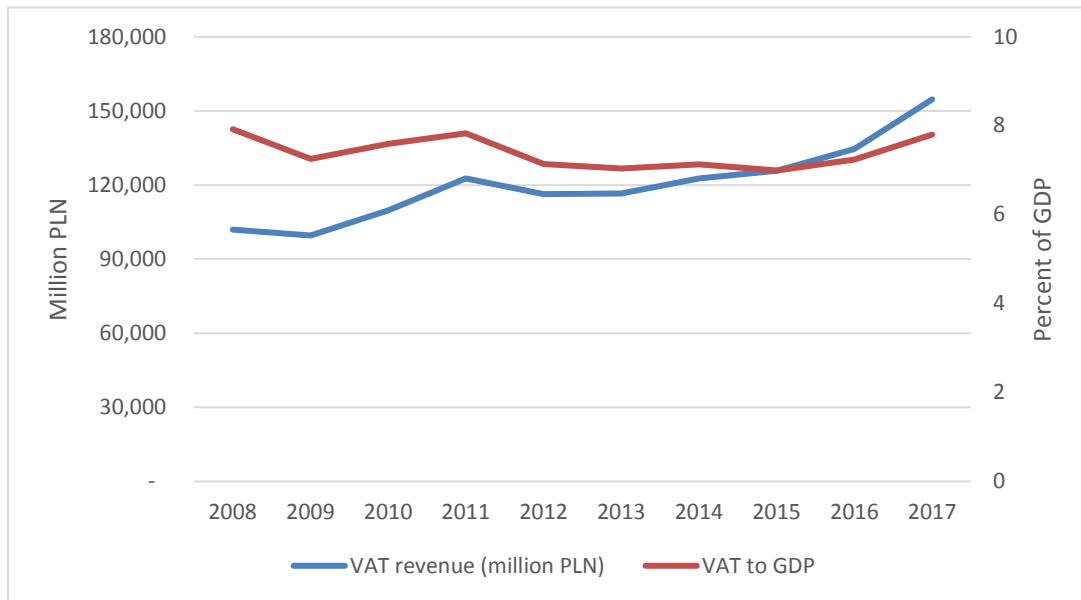
2. This report presents an estimate of the level and recent trends of the tax gap for VAT in Poland using the RA-GAP approach. For that purpose, available national accounts data was used to quantify the potential revenues under the current VAT legislation. These potential VAT revenues were compared with the VAT collection data reallocated to the timing of underlying economic activities. The difference between potential revenues and actual collections represents compliance gaps showing the degree of non-compliance of taxpayers.

A. Value-Added Tax Revenue Performance

3. The VAT in Poland is based on the EU 112th Directive. The standard VAT rate was 22 percent in 2010, but was increased to 23 percent in January 2011. There are two other reduced rates which apply to certain supplies; there is an 8 percent rate, which was increased from 7 percent in 2011, which mainly applies to basic necessities, including food items; and a 5 percent rate, which was increased from 3 percent in 2011, which applies to agricultural outputs and unprocessed food items. Exemptions are largely as per the EU 112th (VAT) Directive, for land, and buildings, financial and insurance services, welfare supplied by not for profit organizations, education, and other public services. In addition to consumption falling within the VAT base, there are significant levels of production for own use in Poland, especially in the farming sector, which is characterized by large numbers of micro, family owned, businesses.

4. Nominal VAT revenues in Poland increased over the period 2008 to 2017, but real revenues declined from 2008 to 2015, recovering in 2017 (Figure 6). While nominal VAT revenues increased, measured as a percent of GDP they fell from 7.9 percent in 2008 to 7.0 percent in 2015, recovering to 7.8 percent in 2017.

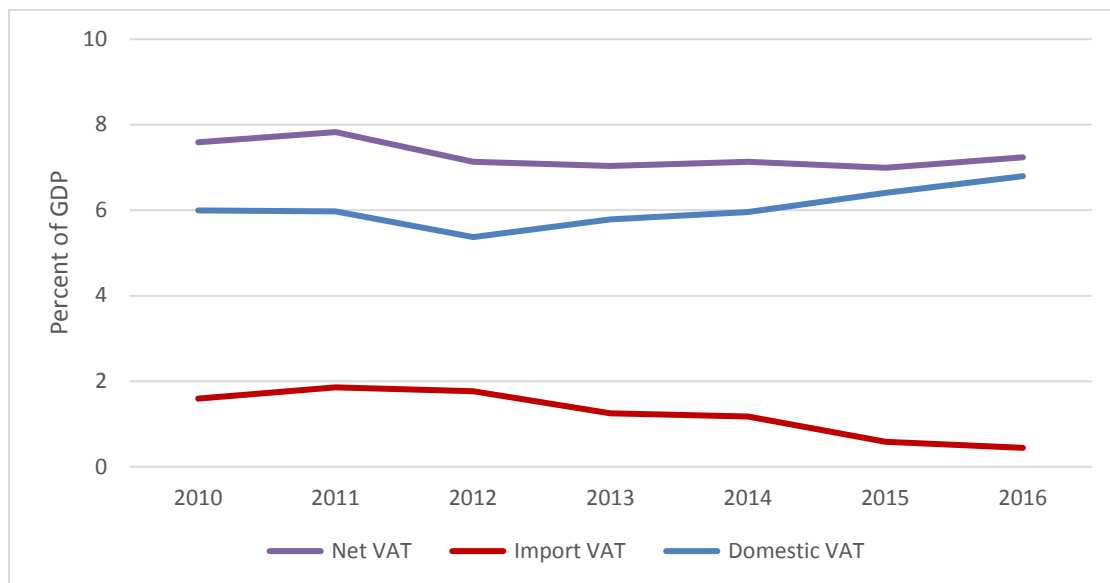
Figure 6. VAT Revenues (2008–17)



Sources: Eurostat.

5. As a share of total VAT collections, domestic collections increased from around 80 percent in 2010 to nearly 95 percent in 2016 (Figure 7). Domestic VAT collections increased from 6.0 percent of GDP in 2010 to 6.8 percent in 2016. Over the same period, import VAT decreased from 1.6 percent of GDP to 0.4 percent. The main reason for this was the modification of Article 33a of the VAT Act in 2015, which allowed taxpayers, under certain conditions, to pay their import VAT with their regular VAT returns rather than at customs.

Figure 7. Breakdown of Net VAT Revenues (2010–16)



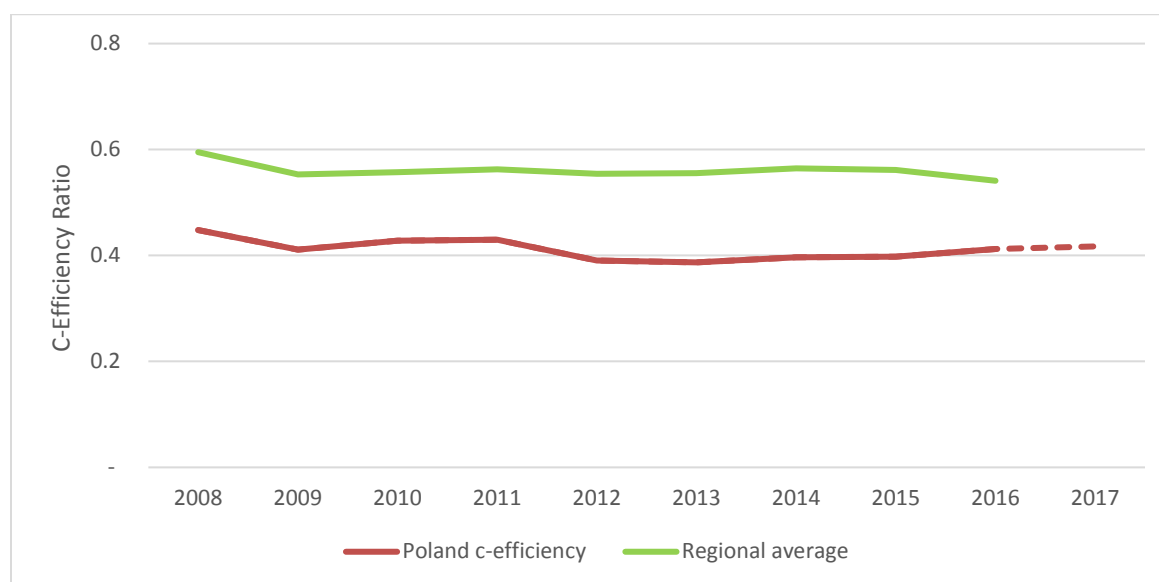
Sources: country authorities.

B. C-Efficiency Ratio

6. The c-efficiency ratio can be used to analyze the overall efficiency of VAT revenues while accounting for differences in the standard rate. The c-efficiency ratio is calculated from VAT revenues, the VAT standard rate and final consumption aggregates to indicate the overall efficiency of VAT revenues. It presents the ratio of actual VAT collections to the theoretical revenues under a perfectly enforced tax levied at the standard rate on all final consumption without any exemptions. The yearly changes in c-efficiency ratio can be decomposed into several factors: changes in the compliance gap, changes in the effects of VAT exemptions, changes in the share of total final consumption represented by nontaxable consumption, and timing effects of cash payments and refunds.

7. The observed c-efficiency for Poland was below the European average across the period 2008-2016 (Figure 8). C-efficiency in Poland declined from 45 percent in 2008 to 38 percent in 2013. Thereafter it showed a slight increase with the 2017 efficiency expected to be around 42 percent, based on provisional estimates for final consumption that year. The European average⁴ across this period remained relatively stable, at around 55 percent.

Figure 8. C-Efficiency for Poland Compared to Average for European Countries (2008–16)

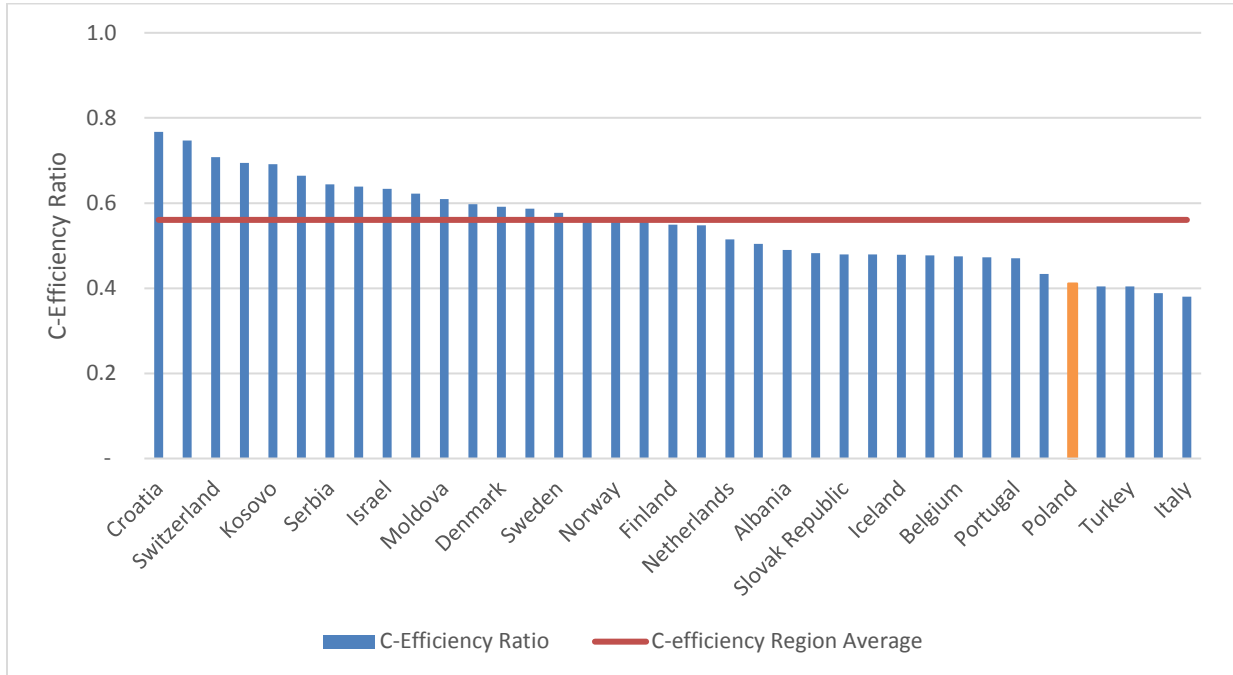


Source: staff calculations.

8. Poland's average observed c-efficiency is lower than that for most European countries (Figure 9). Across the period 2008–16, Poland's average c-efficiency was at 41 percent, lower than most European countries, and below the regional average at 56 percent.

⁴ In this context, 'European means those countries falling within the IMF's EUR administrative region.

Figure 9. Average C-Efficiency for Europe over the Period (2008–16)



Source: staff calculations.

9. The c-efficiency ratio is useful for comparative performance analysis; however, it has limitations as a diagnostic indicator. Multiple factors could be affecting changes in c-efficiency, such as changes in compliance, changes in policy, or changes in the composition of the tax base. Therefore, as analysis of the c-efficiency ratio cannot reliably determine what might be causing the observed change, a tax gap analysis is conducted. The purpose of a comprehensive tax gap analysis is to account for all these factors, and provide indications as to what might be causing the changes in tax revenue performance.

II. ESTIMATES OF THE VALUE-ADDED TAX GAP

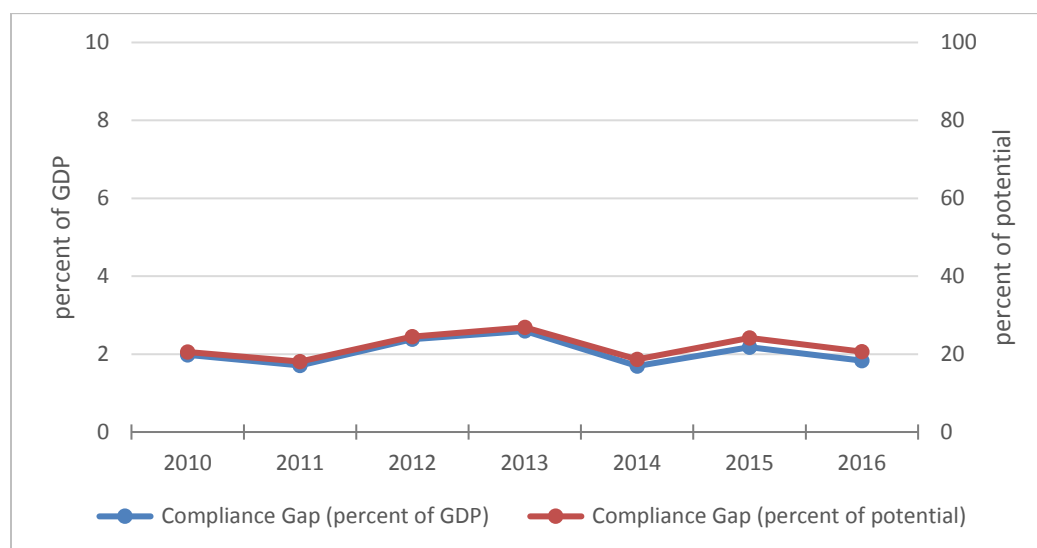
10. The VAT gap for a particular year is the difference between revenues collected for a given year and the potential revenues that could have been collected given the economic activity that took place during that year. The RA-GAP approach was used to estimate the VAT gap for the years 2010–16 in this report. Potential VAT revenues were estimated using detailed national accounts data published by the Central Statistical Office of Poland.

A. The Compliance Gap

11. The compliance gap is the difference between the potential VAT given the current policy framework and actual VAT revenue. The compliance gap thus directly measures the performance of a revenue administration in collecting the tax due from taxpayers. As estimates for the compliance gap must rely on statistical data to determine the level of potential VAT, the estimates will have an error margin similar to that for the underlying statistics. It is therefore generally more useful to use estimates of the compliance gap to assess *trends* in compliance, rather than the *level*.

12. The compliance gap was around 20 percent of potential VAT during the period 2010 to 2016 (Figure 10). The compliance gap rose from 21 percent of potential VAT to a peak of 27 percent in 2013, before falling back to around 21 percent in 2016. This is equivalent to 2.0 percent of GDP, rising to 2.6 percent and falling back to 1.8 percent.

Figure 10. VAT Compliance Gap (2010–16)



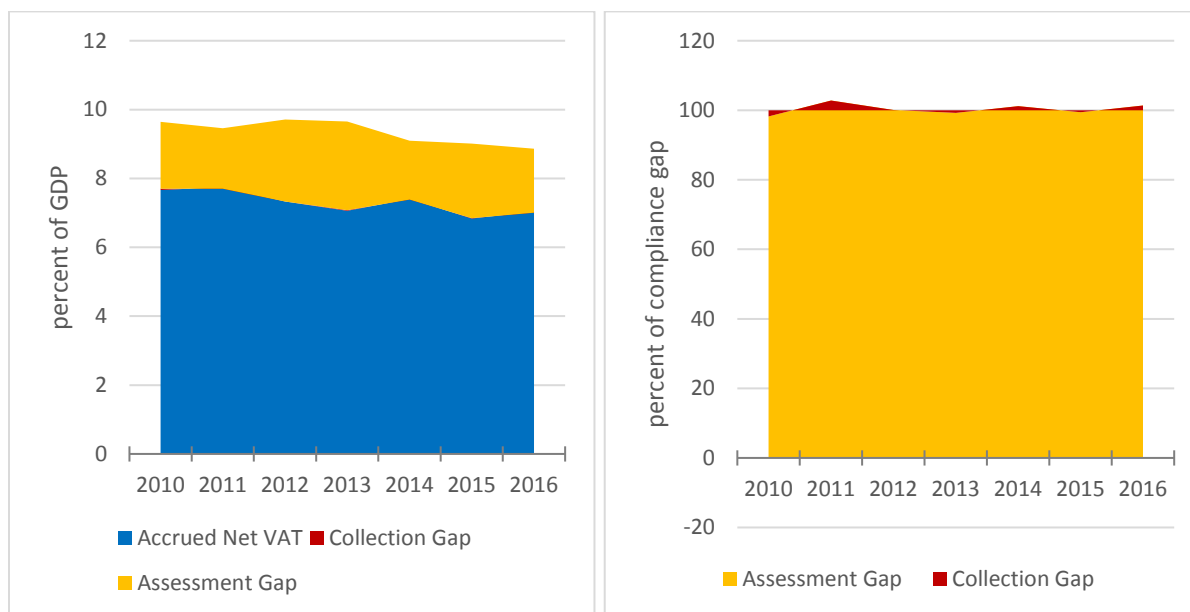
Source: staff calculations.

The assessment and collection gaps

13. The compliance gap can be broken down into an *assessment gap* and a *collection gap*. The collection gap is the difference between actual VAT collections and the total amount of VAT declared or assessed as due from taxpayers, while the assessment gap is the difference between the amount of VAT declared or assessed and potential VAT. These two gaps are also sometimes referred to as the known portion of the compliance gap (the collection gap) and the unknown portion of the compliance gap (the assessment gap).⁵

14. The great majority of the overall compliance gap is attributable to the assessment gap (Figure 11). Typically, this is the case in most countries. The assessment gap represents unidentified liabilities whereas the collection gap represents identified liabilities that can be subject to enforcement action. The assessment gap fell from 1.94 percent of GDP in 2010 to 1.85 percent in 2016. As measured, the collections gap was found to be slightly negative in most years, but this is likely due to some assessments data being missing in the micro-data used in the RA-GAP study. However, this would not affect the overall size of the estimated compliance gap; and, based on previous RA-GAP studies, the collections gap is invariably much smaller than the assessment gap, so this is not a critical shortcoming.

Figure 11. The Assessment and Collection Gap (2010–16)



Source: staff calculations.

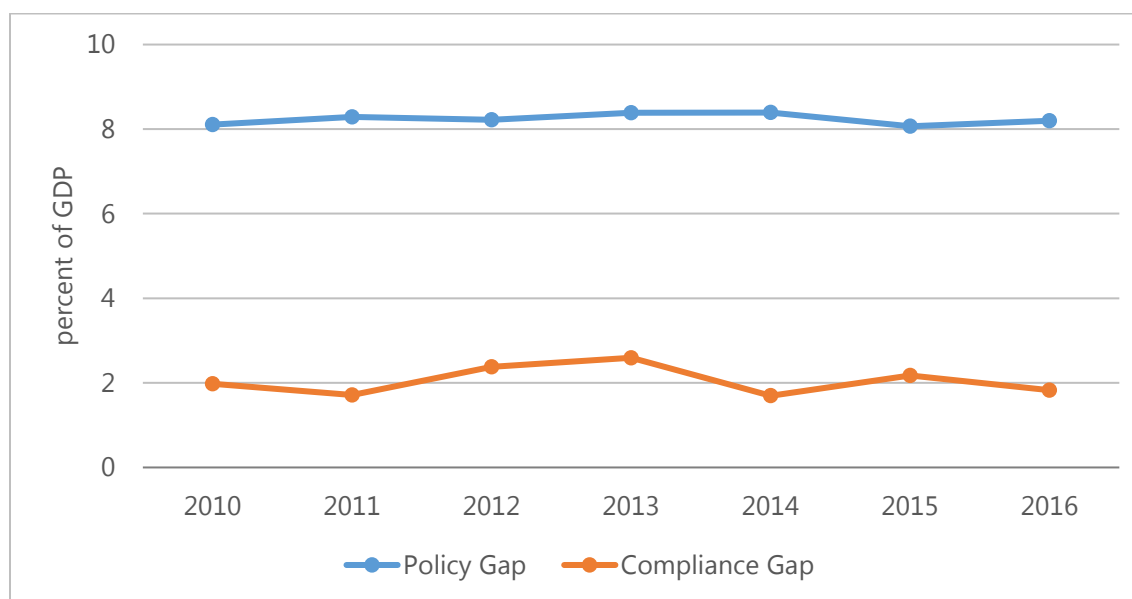
⁵ These basic measures, with compliance gaps in general, do not take into account uncollectible arrears. This would include arrears written off for cases of bankrupt businesses for example. As such, the collections gap will tend to overstate the amount of potential gain to be achieved from further closing the identified portion of the tax gap. In other words, there might be some normal, or even optimal, nonzero state for the collections gap.

B. The Policy Gap

15. The **policy gap** is the difference between the potential VAT if all final consumption were taxed at the current standard rate and the potential VAT given the current policy framework. The size of the policy gap is affected by two factors; changes in the policy structure, and changes in the composition of the tax base. In other words, the policy gap may increase or decrease without any explicit changes in policy; if there is a shift in final consumption from items subject to standard-rated VAT to exempt or reduced rate items the policy gap will increase.

16. The policy gap remained broadly level over the period 2010 to 2016, between 8.1 and 8.4 percent of GDP (Figure 12). The increase in the standard rate in 2011 of 1 percentage point would, all else equal, be expected to increase the revenue foregone through VAT reliefs and thus the policy gap. However, the reduced rates were increased at the same time, by 2 percentage points; and this offset impact of the rise in the standard-rate. As a consequence, the policy gap remained relatively level over the period 2010 to 2016.

Figure 12. The Policy Gap and the Compliance Gap (2010–16)



Source: staff calculations.

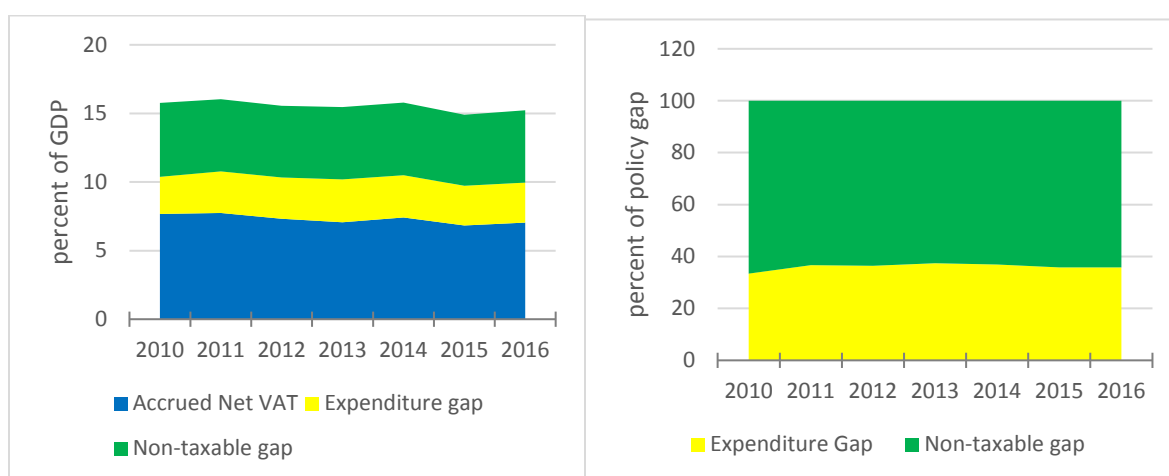
The expenditure and non-taxable gap

17. The policy gap can be broken down into an **expenditure gap** and a **non-taxable gap**. The expenditure gap is the difference between the potential VAT where most of final consumption is taxed at the standard rate, but where a set of minimal standard exemptions are maintained, and the potential VAT given the current policy framework. In other words, the expenditure gap is the component of the policy gap due to tax expenditure decisions. The non-taxable gap is the difference between the potential VAT if all final consumption were taxed at the

current standard rate and the potential VAT where most of final consumption is taxed at the standard rate, but where a set of minimal standard exemptions are maintained.⁶ In other words, the non-taxable gap is the portion of the policy gap that results from the typical VAT exemptions necessary due to pragmatic considerations in the design of a VAT. Another way to look at these two measures is that these two components divide the policy gap into the portion where revenue mobilization opportunities exist (the expenditure gap) and the portion where there is little opportunity for revenue mobilization (the non-taxable gap).

18. The expenditure gap increased slightly between the period 2010–16, while the non-taxable gap decreased slightly (Figure 13). The expenditure gap increased from 2.7 to 2.9 percent of GDP between 2010–2016, while the non-taxable gap decreased from 5.4 to 5.3 percent. During this period, the expenditure gap was just over a third of the policy gap.

Figure 13. The Expenditure and Non-Taxable Gap (2010–16)



Source: staff calculations.

19. A significant part of the policy gap in Poland is attributable to the agricultural sector. Reduced rates are applicable in the agricultural sector, which forms a significant part of Poland's GDP, and food items. The EU's flat-rate farmers' scheme, which also represents a tax expenditure, is widely applicable to the micro-businesses that characterize Polish farming. As well, this sector produces significant levels of production for own use, which are not market

⁶ The set of minimum exemptions includes: maintaining the exemption for financial services, which is typical of almost all VATs in the world; retaining the current treatment of the public sector, since changes to the treatment of the public sector might yield revenue changes in the VAT model but would actually be netted out by equivalent changes to public expenditures; and maintaining the exemption for housing, as this is a common characteristic of almost all VATs in the world, and the measurement of housing in national accounts includes imputed rents which are not actual market transactions and so would not be subject to VAT in any case. It should be noted that the EU's 112th directive prescribes a broader set of exemptions than the list included here; this normative structure is not meant to be a policy prescription, but is simply an attempt to establish a baseline value in line with international norms.

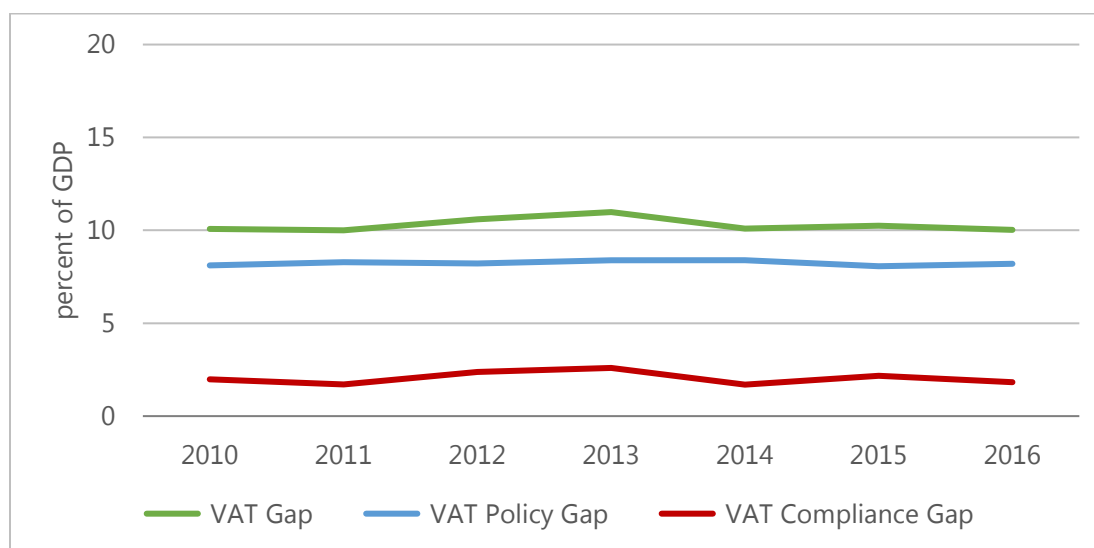
outputs, thus not subject to VAT, and are included in the non-taxable gap. These effects are partly offset by the fact that the impact of the registration threshold in this sector is a negative element of the non-taxable gap; because of the reduced rates and subsidies paid to this sector.

C. The Overall Value-Added Tax Gap

20. Combining the policy gap and the compliance gap into the overall VAT gap yields an indicator of overall revenue performance. The overall VAT gap can either be measured directly, as being difference between the potential VAT if all final consumption were taxed at the current standard rate and actual VAT revenue, or derived by combining the policy and compliance gaps.

21. The total VAT gap increased from 10.1 to 11 percent of GDP between 2010–13 before declining to 10 percent in 2016 (Figure 14). The total VAT gap rose from 10.1 percent of GDP in 2010 to 11 percent in 2013, mainly due to an increase in the compliance gap of 0.6 percentage points. The subsequent decline in the compliance gap meant that, over the full period, the total VAT gap was largely unchanged, at 10 percent of GDP.

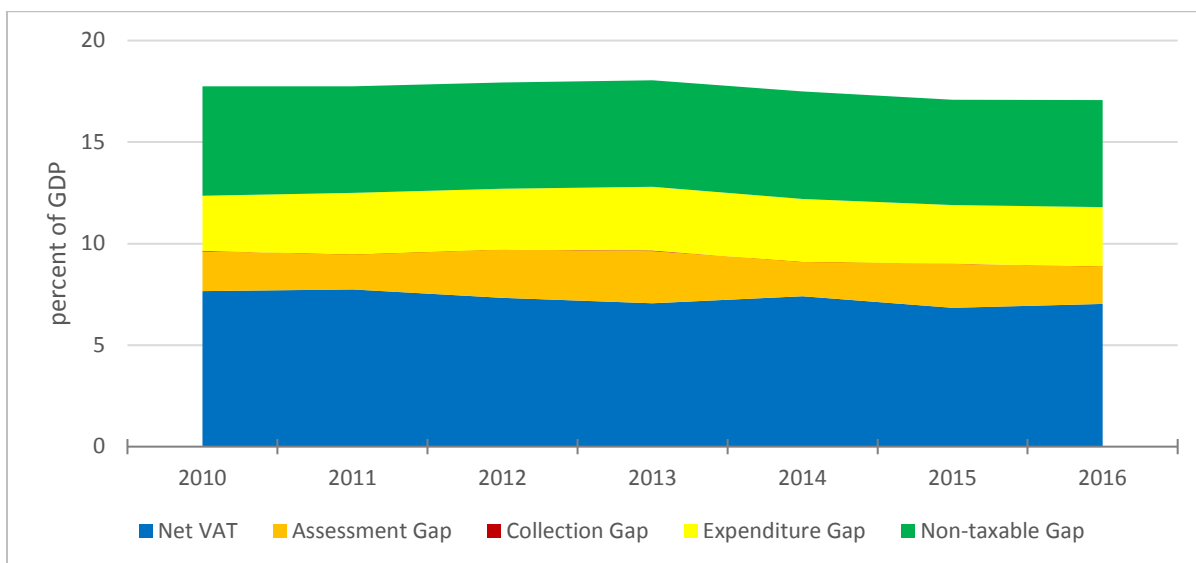
Figure 14. The VAT Gap, the Compliance Gap, and the Policy Gap (2010–16)



Source: staff calculations.

22. The largest components of the overall VAT gap in Poland are the non-taxable gap and the expenditure gap (Figure 15). The components of the overall VAT gap could also be grouped by those with revenue mobilization potential (the collections gap, assessment gap, and expenditure gap) and those without (the non-taxable gap). The largest component of the total VAT gap in Poland is the non-taxable gap, which does not represent potential revenue mobilization. In addition to the expenditure gap, the relatively high assessment gap does represent significant potential for revenue mobilization.

Figure 15. Actual VAT and Components of the Tax Gap (2010–16)

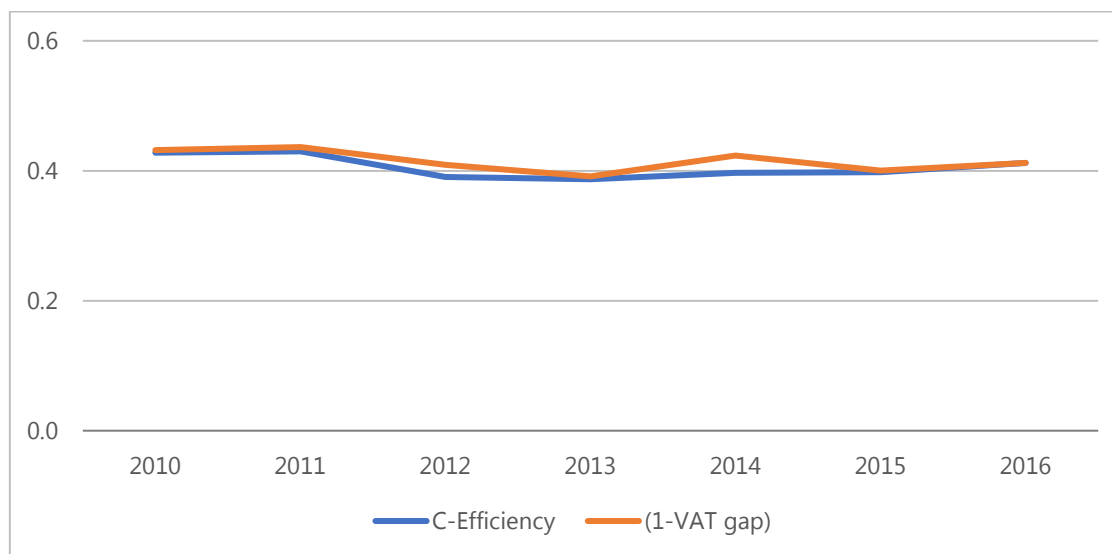


Source: staff calculations.

23. The level and changes in the estimated VAT gap are consistent with observed c-efficiency (Figure 16). Observed c-efficiency should equal $(1 - \text{VAT gap})$ or $(1 - \text{policy gap}) \times ((1 - \text{compliance gap})$.⁷ Using the results of the RA-GAP study, it can be seen that $(1 - \text{VAT gap})$ is very close to observed c-efficiency during the period 2010 to 2016. Residual differences can be attributed to small differences in the measurement of actual VAT collections (see below) as well as minor differences in other definitions and assumptions used.

⁷ See *The Anatomy of the VAT*, Michael Keen, IMF, 2013. Link: <https://www.imf.org/external/pubs/ft/wp/2013/wp13111.pdf>.

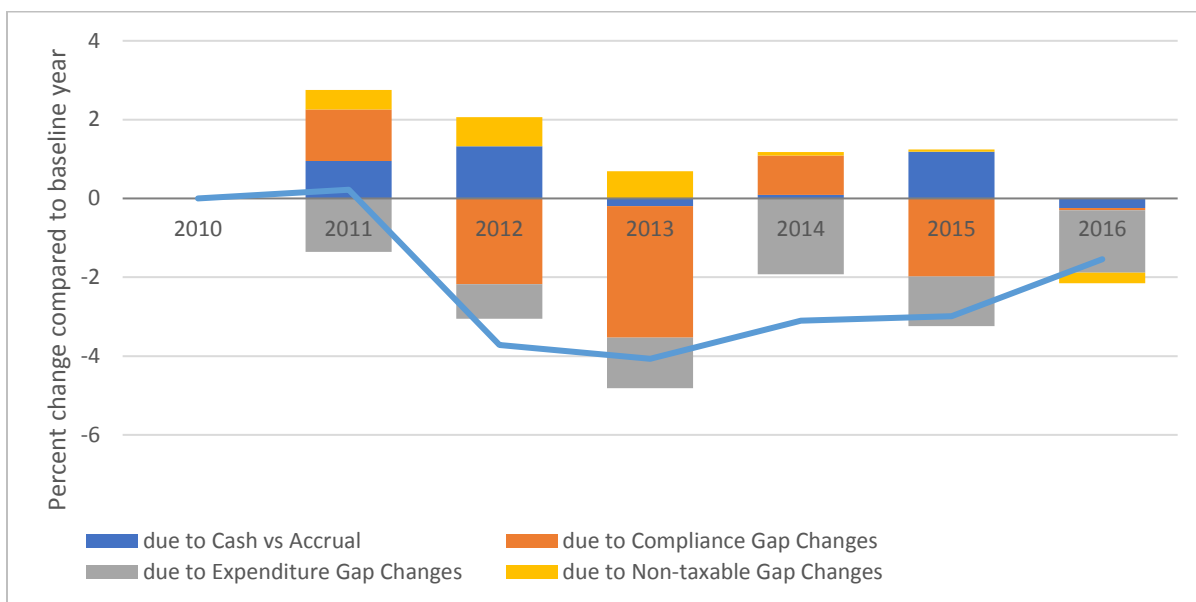
Figure 16. (1-VAT Gap) versus the C-Efficiency Ratio (2010–16)



Source: staff calculations.

24. Most of the year-on-year changes in observed c-efficiency are attributable to changes to the compliance gap (Figure 17). Changes to observed c-efficiency can be decomposed into changes to components of the VAT gap, and timing differences between accrued VAT collections as defined for RA-GAP and cash collections used in the published figures for VAT collections. This decomposition is shown in Figure 17. While changes to the compliance gap accounted for most of the individual year-on-year changes to c-efficiency, overall the largest contributor to the decline in c-efficiency over the period 2010 to 2016 is the expenditure gap. It should be noted that c-efficiency in Poland is generally very stable, and individual observed changes are likely within error margins.

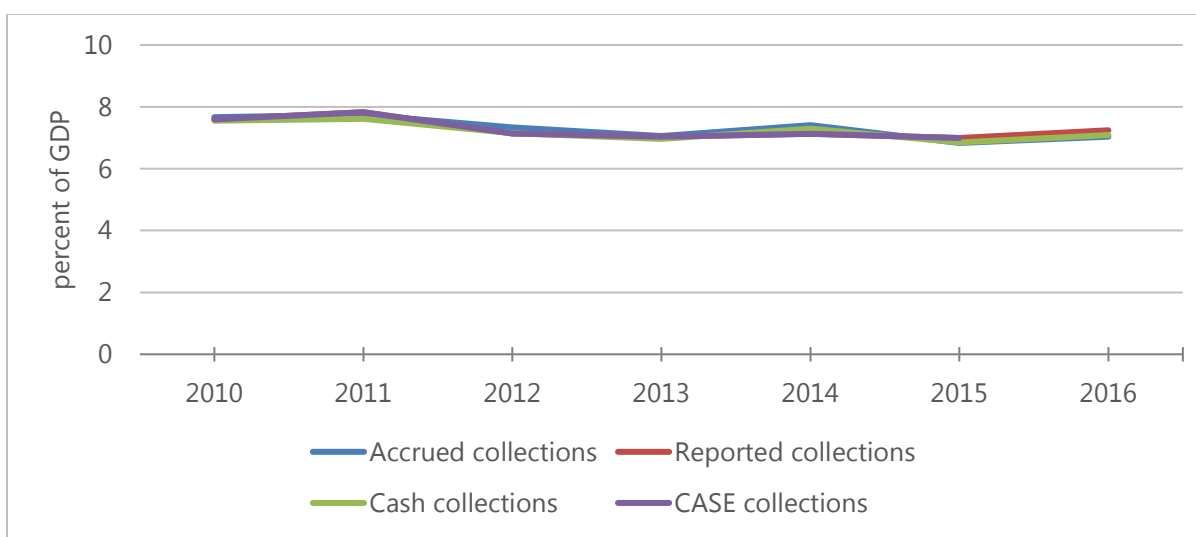
Figure 17. Impact of the Tax Gap Components on C-Efficiency (2010–16)



Source: staff calculations.

25. There are no significant differences between actual VAT collections as defined for RA-GAP and for other VAT gap estimates (Figure 18). There are circumstances in which the measure of actual VAT collections for RA-GAP can differ from those published by country authorities (Box 1). As well, in Poland, annual VAT gap estimates have been made for EC TAXUD (see below) that use VAT collections as reported by Eurostat, which could be different again. However, in the case of Poland, all three measures, as well as a simple cash measure calculated from taxpayer returns and payments data, produce very similar figures for VAT collections.

Figure 18. Measures of VAT Collections (2010–16)

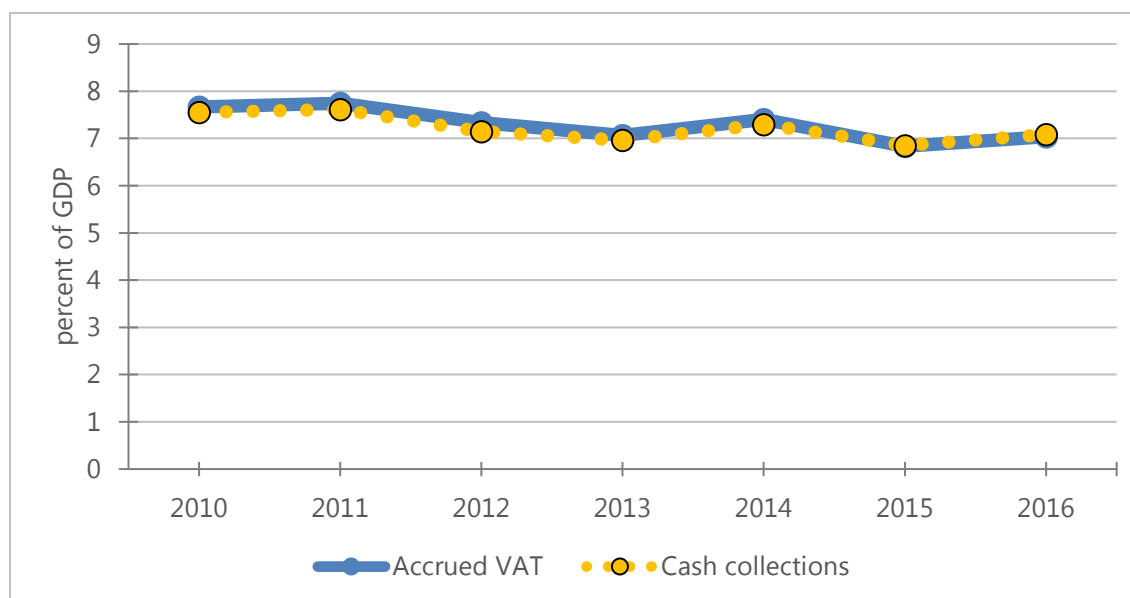


Source: staff calculations, EC TAXUD and country authorities.

Box 1. Measurement of Actual VAT

The RA-GAP approach to estimating the compliance gap employs an accrual measurement for actual VAT; using micro-level taxpayer data to associate the tax with the relevant tax period, rather than with the payment period. This is to better match the economic activity declared by the taxpayer (on their VAT declaration) and corresponding payments to the economic activity as recorded in the statistical data. In the long run, cash values for revenue should average out with the accrued values (ignoring penalties and interest) (Figure 19). In the short run cash performance tends to be more volatile than accruals.

Figure 19. Illustrative RA-GAP Accrual Measurement and Official Values for VAT Collections



Source: staff calculations.

Differences between accrual and cash values are largely driven by cash management issues: timing of debt collections and refund payments, and excess credit carry-forward mechanisms (wherein excess VAT credit is not immediately refunded, but is used as a credit towards future VAT or other tax obligations). There is a tendency for the cash measure to be pro-cyclical. Cash collections improve and excess credit carry forwards accumulate during periods of economic growth, and cash collection worsens and excess credit is drawn down in periods of decline. Inflation can also play a role in differing accruals and cash measures. Due to the lag between tax periods and payment deadlines, severe inflation produces lower ratios of cash collections to economic activity compared to the accrued collections to economic activity.

NB: the use of cash and accruals terms here refers only to the measurement of VAT paid by taxpayers; and not to 'cash accounting' schemes that allow taxpayers to report their activities at the time payment is made, rather than when the supply is made or invoiced. These do not affect actual VAT measures.

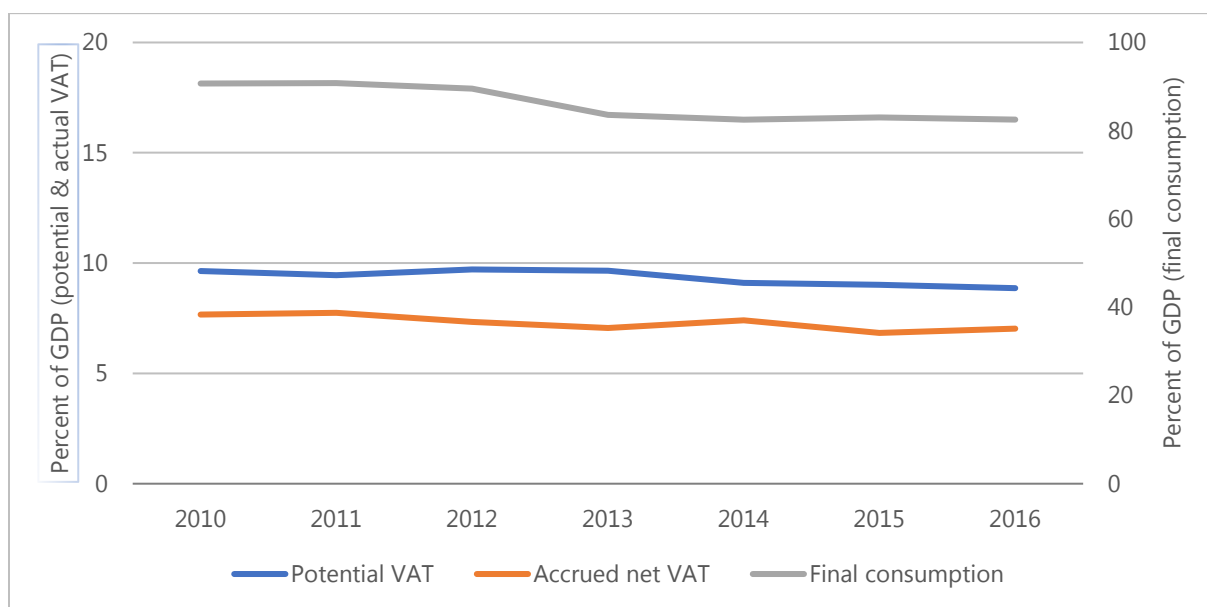
III. FURTHER ANALYSIS OF THE COMPLIANCE GAP

A. Potential and Actual Value-Added Tax

26. It is not enough to understand how compliance has been changing, it is also necessary to understand why it may have been changing. While an understanding of how the compliance gap has been changing over time is useful in evaluating the overall performance of a revenue administration, it does not necessarily assist an administration in understanding how to address any compliance issues. This section of the report includes some additional breakdowns of factors which affect the compliance gap to better understand what might be contributing to the changes in the compliance gap.

27. **Potential VAT declined less than final consumption as a percent of GDP in the period 2010 to 2016 (Figure 20).** Final consumption declined as a percent of GDP from 91 percent of GDP in 2010 to 83 percent in 2016. However, potential VAT declined by less, from 9.6 percent of GDP to 8.9. The reason for this is partly due to the rates increase in 2011.

Figure 20. Potential and Actual Value-Added Tax (2010–16)



Source: staff calculations.

B. Potential and Actual Value-Added Tax by Sector

28. **The RA-GAP VAT gap model provides a breakdown of the compliance gap by sector, but this should be treated as a broad indicator only.** The use of national accounts supply-use tables and detailed taxpayer registration data in the RA-GAP approach to estimating the VAT gap allows potential VAT and actual VAT to be compared for individual economic sectors. The allocation of these values between different sectors does not affect the overall result,

but it should be interpreted as a broad indication of compliance risks in each sector. The two main factors that need to be taken into account are:

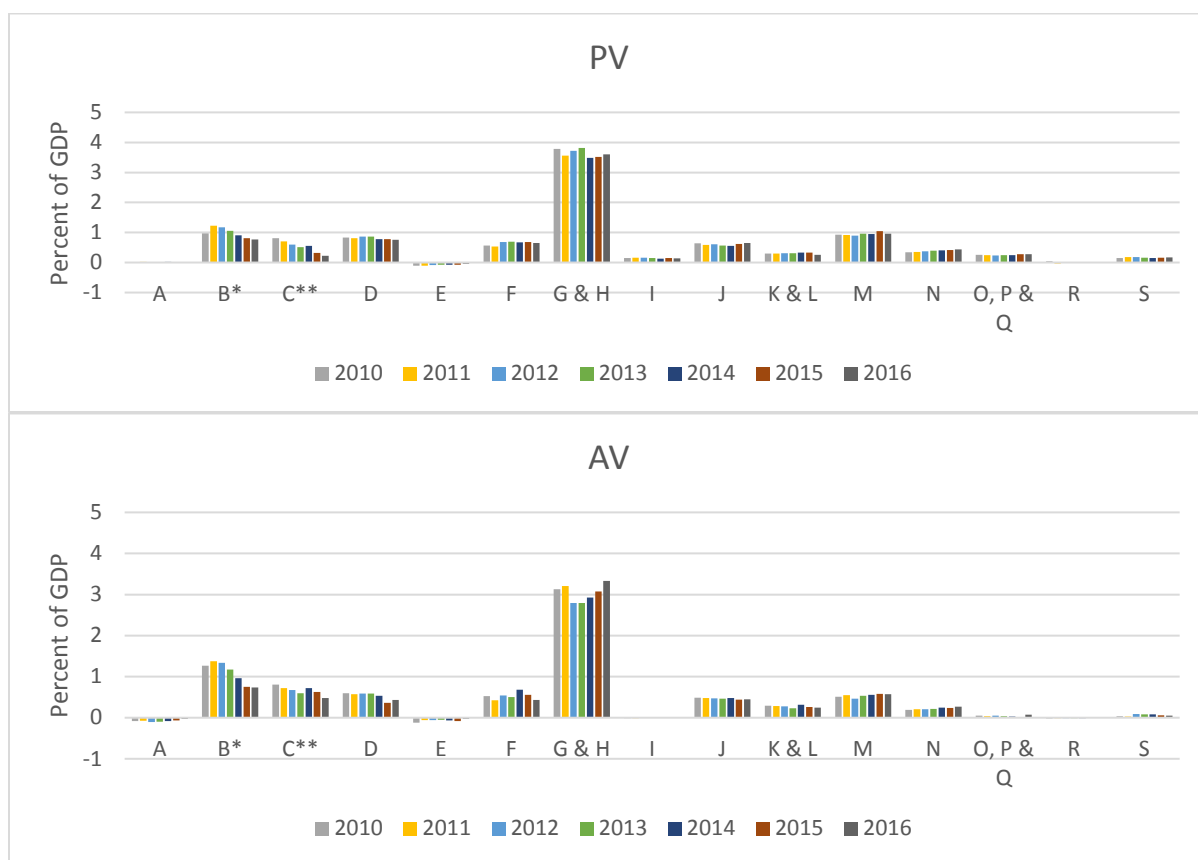
- Actual VAT is generally reported under taxpayers' principal economic activity, whereas potential VAT is derived from economic behavior as reported in national accounts. A taxpayer operating in more than one sector will report all their activities under only one heading, while national accounts would separate those activities into individual sectors.
- This difference also means that, for example, the value of sales declared for VAT by retailers includes transport margins, which are separated out by national accounts and reported under the transport sector. An adjustment is made for this.

For these reasons, the sectoral decomposition of the compliance should be tested against administrations' existing business intelligence on the nature and distribution of compliance risks.

29. Notwithstanding the above, previous experience in other countries suggests that the disaggregated compliance gap can still be a useful sectoral compliance risk indicator. In previous RA-GAP programs, the sectoral decomposition of the compliance gap has generally been found to be intuitive, and consistent with existing knowledge.

30. The largest component of both potential and actual VAT is the trade and transportation sector (Figure 21). The VAT in Poland has a relatively broad base across a number of sectors, but the largest contributors are the trade and transport sector. Similarly, the largest component of actual VAT collections is the same sector.

Figure 21. Trends in Potential and Actual VAT by Sector (2010–16)



Sector Code	Sector Description	Sector Code	Sector Description
A	Agriculture	J	Information and communication
B*	Mining & associated manufacturing	K & L	Financial, insurance & real estate
C**	Other manufacturing	M	Professional services
D	Utilities	N	Administration services
E	Water supply & sewerage	O, P & Q	Public administration, education, health and social services
F	Construction	R	Arts, entertainment and recreation
G & H	Trade & transport	S	Other service activities
I	Accommodation and food service		

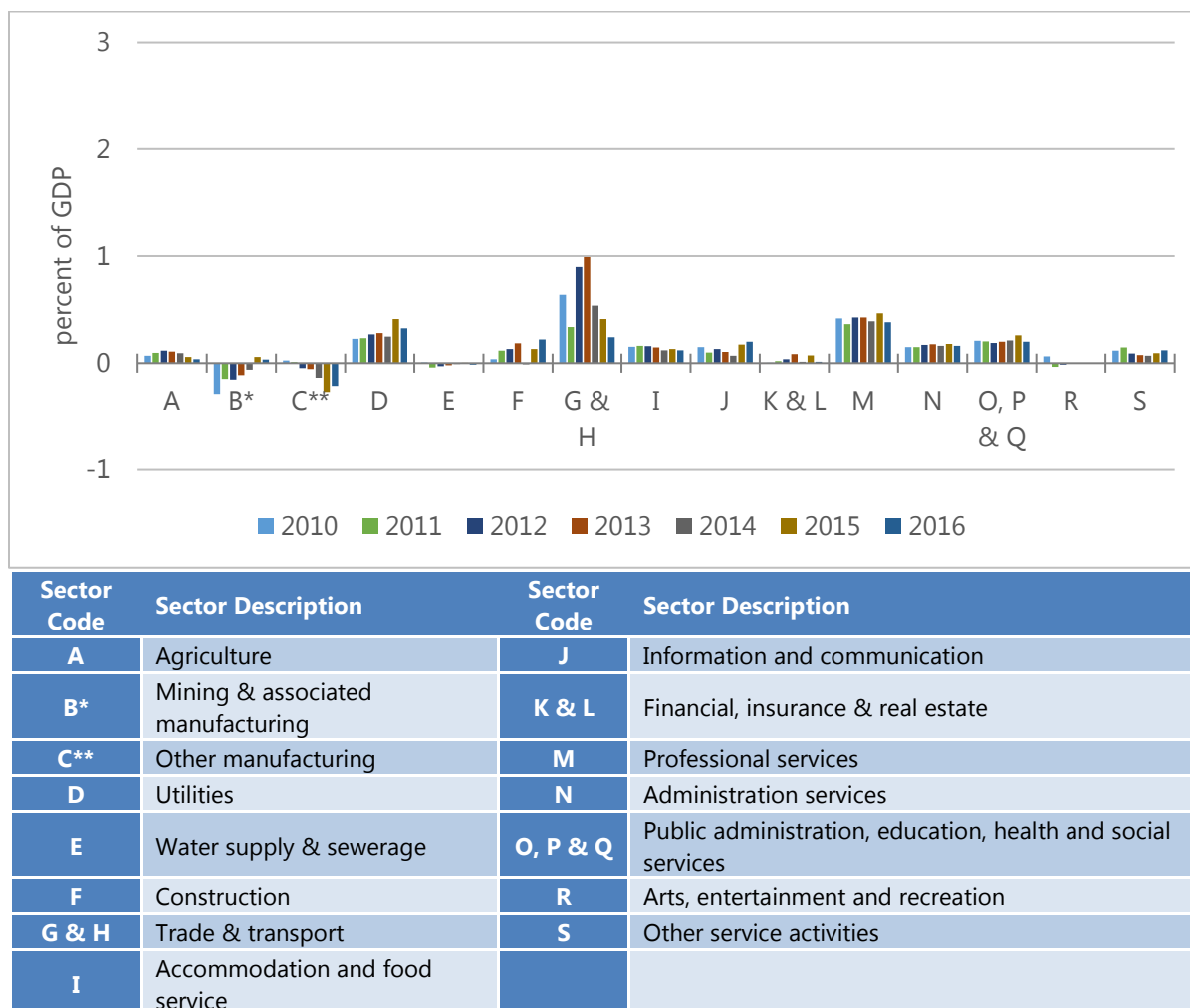
Source: staff calculations.

C. The Compliance Gap by Sector

31. The compliance gap was largest in the trade and transportation sector, but there are significant gaps in other sectors (Figure 22). The sectoral decomposition of the compliance gap shows that, historically, the largest contributor to the compliance gap was the trade and transport sector. However, the observed gap in this sector declined over the period 2013 to 2016, coincident with major compliance campaigns targeting this sector in particular (see

below). Changes in the gap in this sector have been the main drivers of changes observed in the overall gap. Consistent gaps are also observed in the professional and other services sectors. All of these are expected results, in sectors that are typically relatively high-risk. A gap is also observed in the energy and utilities sector, which is less usual, as this sector is typically low risk. Small negative gaps observed in the mining and manufacturing sectors are within margins of error and can be disregarded (though they are included in the aggregate, total estimates of the compliance gap).

Figure 22. The Compliance Gap by Sector (2010–16)



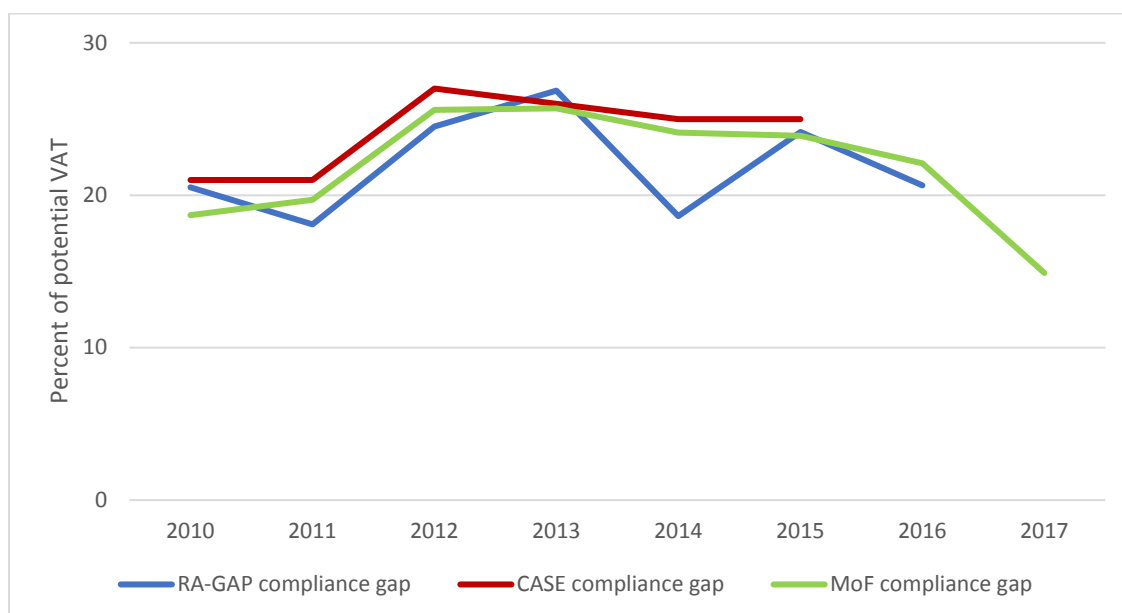
Source: staff calculation.

D. Compliance Gap Estimates

32. In addition to the estimates produced using the RA-GAP approach, VAT compliance gaps are estimated by the MoF and by CASE for EC TAXUD (Figure 23). Estimates produced by the CASE consortium for EC TAXUD and by the Macroeconomic Policy Department in the MoF are generally consistent with estimates produced using the RA-GAP approach. The level of the

estimates is very similar for most years. There is a divergence in 2014, where the RA-GAP approach estimates the gap at 19 percent of potential VAT while the CASE and MoF estimates are 24-25 percent. However, the trend (which is generally more reliable than the level) since 2013 is very consistent between the RA-GAP and MoF estimates, showing a declining trend to 2017. The divergence in 2014 is a consequence of the RA-GAP estimate of potential VAT that year being slightly lower than the other two estimates, while the actual VAT collections figure for RA-GAP is slightly higher. These differences reinforce one another in the gap estimate, which is the difference between potential and actual VAT.

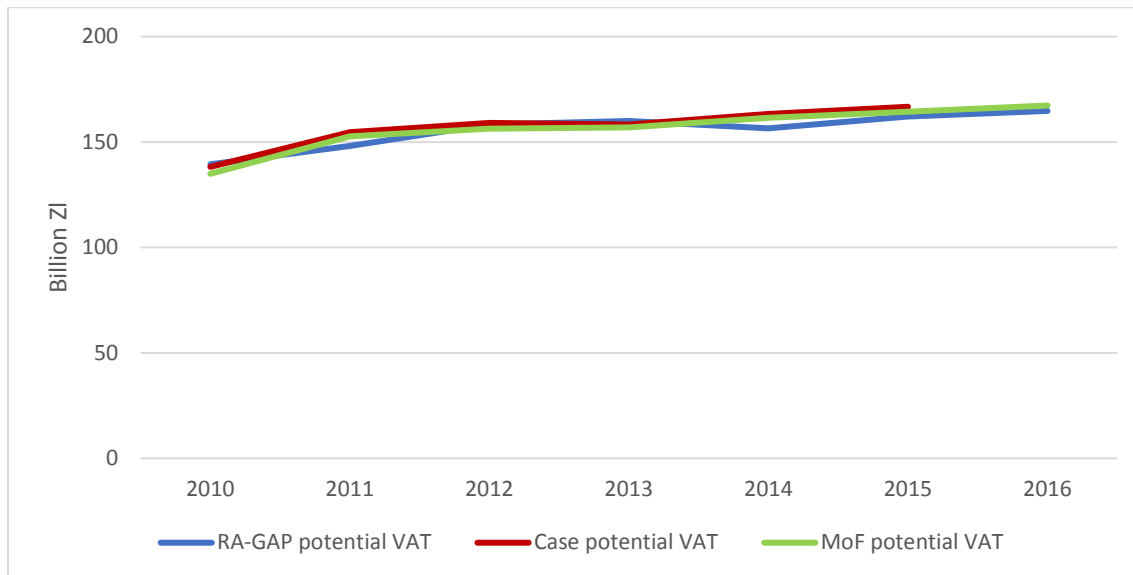
Figure 23. CASE, MoF, and RA-GAP Compliance Gap Estimates (2010–17)



Source: staff calculations, EC TAXUD and country authorities.

33. Levels and the trend in potential VAT estimated by the three different approaches are very similar (Figure 24). Each of the respective approaches by RA-GAP, CASE for EC TAXUD and the MoF are based on a top-down analysis of potential VAT using national accounts data. As expected, they produce very similar estimates of potential VAT.

Figure 24. CASE, MoF, and RA-GAP Potential VAT Estimates (2010–17)



Source: staff calculations, EC TAXUD and country authorities.

IV. VALUE-ADDED TAX COMPLIANCE IN POLAND

A. Value-Added Tax Compliance Measures

34. Country authorities have responded to the high VAT compliance gap by introducing a series of reforms and measures. Recognizing both that the VAT compliance gap in Poland is significantly higher than the average for EU countries, and the need to modernize their tax administration; the authorities have undertaken a series of institutional and compliance measures. On the institutional front, they have merged tax administration, customs and fiscal control operations into single operational offices at regional and local levels. In the MoF at the central level, they have concentrated all departments related to these areas under the Head of KAS and his deputies.

35. A “sealing package” of compliance measures was introduced in December 2016. The package of measures introduced by the authorities comprised a number of compliance measures that were designed to be mutually reinforcing in improving tax morale in Poland. They included:

- Extended reverse charge arrangements;
- Introduction of additional requirements to be fulfilled in order to get faster VAT refunds;
- Restrictions on quarterly returns;
- E-filing of VAT returns;
- Monthly e-filing of summary intra-community sales;
- Changes in joint and several liability for suppliers and purchasers for the VAT due on their transactions and on guarantee deposit rules
- Extension of liability to new taxpayers’ agents;
- Powers to block VAT registrations;
- Introduction of non-compliance fines (VAT sanctions);
- Increased sanctions for VAT fraud and other changes to the tax criminal code;
- Ending quarterly tax returns, with the exception of small taxpayers; and
- New registered taxpayers have no right to use quarterly tax returns for a period of 12 months from the month in which registration took place.

36. The authorities believe that the sealing package is increasing VAT revenues. Based on their own evaluation, the authorities believe that the yield from the sealing package in 2017 was Polish złoty (PLN) 389 million. The forecast yield for 2018 is PLN 3 billion. This evaluation is supported by their preliminary assessment of the 2017 VAT compliance gap as having fallen by several percentage points from 2016.

37. The authorities have also implemented mandatory e-filing of sales and purchase transactions logs—known as Uniform Control Files or SAFs—for all VAT taxpayers. The transaction logs enable the tax administration to calculate tax liabilities, and automatically cross-check input tax credits claimed by purchasers against corresponding output tax declarations by suppliers. The authorities believe that this measure has increased declared sales by PLN 20 billion in 2017; and have detected discrepancies totaling PLN 10 billion on 314,000 returns in that year. Compliance with SAF requirements is said to be 94 percent for Q1 2018.

38. SAF data is stored on a centralized national database, which could be used for advanced risk analytics. The transaction-level data created by the SAF regime represents a very valuable resource for advanced risk analytics. Merged with micro-data from taxpayer register entries and payments and returns, it could be used in such analytics as benchmarking, risk profiling and machine learning.

39. Further compliance measures are planned for 2018, which include split payments of VAT to dedicated VAT accounts. The banks have agreed to provide every VAT taxpayer with a separate VAT account (free of charge), set up so that payments by purchasers can be split, and the VAT paid separately to the VAT account, for automatic remittance to the exchequer. Such split payments will be voluntary for the purchasers, with the benefit for them of avoiding joint and several liability for the payment of the output tax due in cases where the supplier does not pay the output tax due, and other sanctions. This measure is mainly aimed at protecting non-complicit purchasers caught up in missing trader frauds. The authorities are considering whether to make split payments obligatory, but this would require consultations with the EC.⁸

40. A number of other compliance measures are due to enter into force on July 1st, 2018 to increase VAT revenues. In addition to split payments, further measures planned for 2018 include:

- e-filing from electronic cash registers in real time;
- increased information requirements for registration and de-registration;
- sanctions for non-registered sales;
- restriction of online sales by unregistered sellers; and
- additional measures to secure fuel supply chains.

In total, these measures, including split payments, are projected by the authorities to yield PLN 3.3 billion in 2019, rising to PLN 9 billion in 2023.

41. The authorities have increased reporting requirements for banks' clearing houses in 2018, to require them to report suspicious money flows. A law (known as the STIR law) aimed at preventing the use of the financial sector for tax fraud, particularly in VAT by organized

⁸ Such split payments are effectively a form of reverse charges, which would require a derogation from the EU 112th Directive.

criminal gangs was introduced in 2018. Clearing houses and the KAS analyze money transfer data provided by the banks, using algorithms from banking practice and anti-money laundering experience. The purpose of this is to identify high-risk transactions, and the results of this risk analysis are reported to the tax administration on a daily basis. The administration may then block high risk bank accounts (though not those used for private purposes by natural persons) for up to 72 hours while they investigate the transactions, with the option of extending the block to three months. This measure is aimed at organized criminal gangs generally, and particularly at purchaser taxpayers that are complicit in missing trader frauds.

42. The measures described above are believed by the authorities to have produced significant revenue yields in 2017. According to Convergence Programme documentation produced by the authorities for the European Commission, the estimated revenue yield from SAF for 2017 is PLN 6.5 billion. This consistent with the MoF's preliminary assessment of the 2017 compliance gap. Projected revenue yield from the combined SAF, split payments and STIR measures is about PLN 7.7 billion in 2018 and PLN 4.3 billion in 2019.

Appendix 1. Data Tables for Included Figures

Appendix Table 1. Data for Figures 1 and 6: Value-Added Tax Revenues

Year	VAT Revenue (PLN millions)	VAT to GDP (percentage)
2008	101,876	7.9
2009	99,562	7.3
2010	109,718	7.6
2011	122,647	7.8
2012	116,264	7.1
2013	116,607	7.0
2014	122,671	7.1
2015	125,836	7.0
2016	134,554	7.2
2017	154,671	7.8

Appendix Table 2. Data for Figure 7: Breakdown of Net VAT Revenue

(In percent of GDP)

Year	Net VAT	Import VAT	Domestic VAT
2010	7.6	1.6	6.0
2011	7.8	1.9	6.0
2012	7.1	1.8	5.4
2013	7.0	1.3	5.8
2014	7.1	1.2	6.0
2015	7.0	0.6	6.4
2016	7.2	0.4	6.8

Appendix Table 3. Data for Figure 8: C-Efficiency Ratios for Poland and Average for Europe

Year	Poland C-Efficiency Ratio	C-efficiency Region Average Ratio
2008	0.45	0.59
2009	0.41	0.55
2010	0.43	0.56
2011	0.43	0.56
2012	0.39	0.55
2013	0.39	0.56
2014	0.40	0.56
2015	0.40	0.56
2016	0.41	0.54
2017	0.43 (est)	

Appendix Table 4. Data for Figure 9: Average C-Efficiency for Europe (2008-2016)

Country	C-Efficiency Ratio	C-efficiency Region Average
Croatia	0.77	0.56
Bosnia and Herzegovina	0.75	0.56
Switzerland	0.71	0.56
Estonia	0.69	0.56
Kosovo	0.69	0.56
Cyprus	0.66	0.56
Serbia	0.64	0.56
Bulgaria	0.64	0.56
Israel	0.63	0.56
Malta	0.62	0.56
Moldova	0.61	0.56
Slovenia	0.60	0.56
Denmark	0.59	0.56
Austria	0.59	0.56
Sweden	0.58	0.56
Czech Republic	0.57	0.56
Norway	0.56	0.56
Hungary	0.56	0.56
Finland	0.55	0.56
Germany	0.55	0.56
Netherlands	0.51	0.56
Lithuania	0.50	0.56
Albania	0.49	0.56
Romania	0.48	0.56
Slovak Republic	0.48	0.56
France	0.48	0.56
Iceland	0.48	0.56
Ireland	0.48	0.56
Belgium	0.47	0.56
Latvia	0.47	0.56
Portugal	0.47	0.56
United Kingdom	0.43	0.56
Poland	0.41	0.56
Spain	0.40	0.56
Turkey	0.40	0.56
Greece	0.39	0.56
Italy	0.38	0.56

Appendix Table 5. Data for Figures 2 and 10: Compliance Gap

Year	Compliance Gap (percent of potential)	Compliance Gap (percent of GDP)
2010	21	2.0
2011	18	1.7
2012	24	2.4
2013	27	2.6
2014	19	1.7
2015	24	2.2
2016	21	1.8

Appendix Table 6. Data for Figure 11: The Assessment and Collection Gap

(In percent of GDP)

Year	Actual VAT (accruals)	Collection Gap	Assessment Gap
2010	7.7	0.0	1.9
2011	7.7	(0.0)	1.8
2012	7.3	(0.0)	2.4
2013	7.1	0.0	2.6
2014	7.4	(0.0)	1.7
2015	6.8	0.0	2.2
2016	7.0	(0.0)	1.9

(In percent of compliance gap)

Year	Collection Gap	Assessment Gap
2010	1.8	98.2
2011	(2.8)	102.8
2012	(0.1)	100.1
2013	0.8	99.2
2014	(1.2)	101.2
2015	0.6	99.4
2016	(1.4)	101.4

Appendix Table 7. Data for Figures 3, 12 & 14: The VAT Gap, Compliance Gap, and Policy Gap

(In percent of GDP)

Year	Total VAT Gap	Policy Gap	Compliance Gap
2010	10.08	8.10	1.98
2011	10.00	8.29	1.71
2012	10.60	8.22	2.38
2013	10.98	8.39	2.59
2014	10.09	8.39	1.69
2015	10.24	8.07	2.18
2016	10.03	8.20	1.83

Appendix Table 8. Data for Figure 13: The Non-Taxable and Expenditure Gap

(In percent of GDP)

Year	Accrued Net VAT	Expenditure Gap	Non-taxable Gap
2010	7.7	2.7	5.4
2011	7.7	3.0	5.3
2012	7.3	3.0	5.2
2013	7.1	3.1	5.3
2014	7.4	3.1	5.3
2015	6.8	2.9	5.2
2016	7.0	2.9	5.3

(In percent of policy gap)

Year	Expenditure Gap	Non-taxable Gap
2010	33.4	66.6
2011	36.6	63.4
2012	36.4	63.6
2013	37.4	62.6
2014	36.9	63.1
2015	35.9	64.1
2016	35.8	64.2

Appendix Table 9. Data for Figure 15: Actual Value-Added Tax and Components of the Gap

(In percent of GDP)

Year	Actual VAT (accruals)	Collection Gap	Assessment Gap	Expenditure Gap	Non-taxable Gap
2010	7.7	0.04	1.9	2.7	5.4
2011	7.7	-0.05	1.8	3.0	5.3
2012	7.3	0.00	2.4	3.0	5.2
2013	7.1	0.02	2.6	3.1	5.3
2014	7.4	-0.02	1.7	3.1	5.3
2015	6.8	0.01	2.2	2.9	5.2
2016	7.0	-0.03	1.9	2.9	5.3

Appendix Table 10. Data for Figure 16: (1-Value-Added Tax Gap) versus the C-efficiency Ratio (2010–16)

Year	C-Efficiency	(1-VAT gap)
2010	0.43	0.43
2011	0.43	0.44
2012	0.39	0.41
2013	0.39	0.39
2014	0.40	0.42
2015	0.40	0.40
2016	0.41	0.41

Appendix Table 11. Data for Figure 17: Impact of the Tax Gap Components on C-Efficiency

(Percent change compared to baseline year)

Year	Change due to Cash vs Accrual	Change due to Compliance Gap Changes	Change due to Expenditure Gap Changes	Change due to Efficiency Gap Changes	Net Changes in C-Efficiency
2010	-	-	-	-	-
2011	0.9	1.3	(1.4)	0.5	0.2
2012	1.3	(2.2)	(0.9)	0.7	(3.7)
2013	(0.2)	(3.3)	(1.3)	0.7	(4.1)
2014	0.1	1.0	(1.9)	0.1	(3.1)
2015	1.2	(2.0)	(1.3)	0.1	(3.0)
2016	(0.2)	(0.1)	(1.6)	(0.3)	(1.5)

Appendix Table 12. Data for Figure 18: Measures of VAT Collections

(In percent of GDP)

Year	Accrued collections	Reported collections	Cash collections	CASE collections
2010	7.7	7.6	7.6	7.6
2011	7.7	7.8	7.6	7.8
2012	7.3	7.1	7.1	7.1
2013	7.1	7.0	7.0	7.0
2014	7.4	7.1	7.3	7.1
2015	6.8	7.0	6.9	7.0
2016	7.0	7.2	7.1	

Appendix Table 13. Data for Figure 19: Illustrative RA-GAP Accrual Measurement and Official Values for Value-Added Tax Collections

(In percent of GDP)

Year	Accrued VAT	Collections, Cash
2010	7.7	7.6
2011	7.7	7.6
2012	7.3	7.1
2013	7.1	7.0
2014	7.4	7.3
2015	6.8	6.9
2016	7.0	7.1

Appendix Table 14. Data for Figure 20: Potential and Actual Value-Added Tax

(In percent of GDP)

Year	Potential VAT	Accrued net VAT	Final consumption
2010	9.6	7.7	90.7
2011	9.5	7.7	90.8
2012	9.7	7.3	89.6
2013	9.7	7.1	83.6
2014	9.1	7.4	82.5
2015	9.0	6.8	83.0
2016	8.9	7.0	82.5

Appendix Table 15. Data for Figure 21: Potential and Actual Value-Added Tax by Sector

(In percent of GDP)

Potential VAT	Sector	2010	2011	2012	2013	2014	2015	2016
A	Agriculture	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B*	Mining & associated manufacturing	1.0	1.2	1.2	1.1	0.9	0.8	0.8
C**	Other manufacturing	0.8	0.7	0.6	0.5	0.6	0.3	0.2
D	Utilities	0.8	0.8	0.9	0.9	0.8	0.8	0.8
E	Water supply & sewerage	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0.0
F	Construction	0.6	0.5	0.7	0.7	0.7	0.7	0.7
G & H	Trade & transport	3.8	3.6	3.7	3.8	3.5	3.5	3.6
I	Accommodation and food service	0.1	0.2	0.2	0.2	0.1	0.1	0.1
J	Information and communication	0.6	0.6	0.6	0.6	0.5	0.6	0.6
K & L	Financial, insurance & real estate	0.3	0.3	0.3	0.3	0.3	0.3	0.3
M	Professional services	0.9	0.9	0.9	1.0	0.9	1.0	1.0
N	Administration services	0.3	0.4	0.4	0.4	0.4	0.4	0.4
O, P & Q	Public administration, education, health and social services	0.3	0.2	0.2	0.2	0.2	0.3	0.3
R	Arts, entertainment and recreation	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	Other service activities	0.1	0.2	0.2	0.2	0.2	0.2	0.2
Actual VAT	Sector	2010	2011	2012	2013	2014	2015	2016
A	Agriculture	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0.0
B*	Mining & associated manufacturing	1.3	1.4	1.3	1.2	1.0	0.7	0.7
C**	Other manufacturing	0.8	0.7	0.7	0.6	0.7	0.6	0.5
D	Utilities	0.6	0.6	0.6	0.6	0.5	0.4	0.4
E	Water supply & sewerage	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0.0
F	Construction	0.5	0.4	0.5	0.5	0.7	0.6	0.4
G & H	Trade & transport	3.1	3.2	2.8	2.8	2.9	3.1	3.3
I	Accommodation and food service	0.0	0.0	0.0	0.0	0.0	0.0	0.0
J	Information and communication	0.5	0.5	0.5	0.5	0.5	0.4	0.4
K & L	Financial, insurance & real estate	0.3	0.3	0.3	0.2	0.3	0.3	0.2
M	Professional services	0.5	0.5	0.5	0.5	0.6	0.6	0.6
N	Administration services	0.2	0.2	0.2	0.2	0.2	0.2	0.3
O, P & Q	Public administration, education, health and social services	0.0	0.0	0.0	0.0	0.0	0.0	0.1
R	Arts, entertainment and recreation	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	Other service activities	0.0	0.0	0.1	0.1	0.1	0.1	0.0

Appendix Table 16. Data for Figures 4 and 22: The Compliance Gap by Sector

(In percent of GDP)

Sector Code	Sector	2010	2011	2012	2013	2014	2015	2016
A	Agriculture, forestry and fishing	0.1	0.1	0.1	0.1	0.1	0.1	0.0
B*	Mining & associated Manufacturing	-0.3	-0.2	-0.2	-0.1	-0.1	0.1	0.0
C**	Other manufacturing	0.0	0.0	0.0	-0.1	-0.1	-0.3	-0.2
D	Utilities	0.2	0.2	0.3	0.3	0.2	0.4	0.3
E	Water & sewerage	0.0	0.0	0.0	0.0	0.0	0.0	0.0
F	Construction	0.0	0.1	0.1	0.2	0.0	0.1	0.2
G & H	Trade & transport	0.6	0.3	0.9	1.0	0.5	0.4	0.2
I	Hospitality	0.2	0.2	0.2	0.1	0.1	0.1	0.1
J	Information	0.2	0.1	0.1	0.1	0.1	0.2	0.2
K & L	Finance & real estate	0.0	0.0	0.0	0.1	0.0	0.1	0.0
M	Professional services	0.4	0.4	0.4	0.4	0.4	0.5	0.4
N	Administrative services	0.2	0.2	0.2	0.2	0.2	0.2	0.2
O, P & Q	Public administration, social security, education & health	0.2	0.2	0.2	0.2	0.2	0.3	0.2
R	Arts, entertainment and recreation	0.1	0.0	0.0	0.0	0.0	0.0	0.0
S	Other service activities	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Appendix Table 17. Data for Figures 5 & 23: CASE Compliance Gap and Potential VAT

(percent of potential VAT)

Year	RA-GAP compliance gap	CASE compliance gap	MoF compliance gap
2010	21	21	19
2011	18	21	20
2012	24	27	26
2013	27	26	26
2014	19	25	24
2015	24	25	24
2016	21		22
2017			15

Appendix Table 18. Data for Figure 24: CASE, MoF and RA-GAP Potential VAT estimates

(Billion PLN)

Year	RA-GAP potential VAT	Case potential VAT	MoF potential VAT
2010	139	138	135
2011	148	155	153
2012	158	159	156
2013	160	158	157
2014	156	163	162
2015	162	167	164
2016	165		167

Appendix Table 19. National Accounts Statistics Summary

(At Current Prices, in PLN mill)

Year	Gross Domestic Product	Final Consumption	GFCF	Imports	Exports
2008	1,286,069	1,033,800	297,042	551,691	486,867
2009	1,372,208	1,101,662	294,210	522,008	510,248
2010	1,445,298	1,166,135	293,168	607,794	578,916
2011	1,566,824	1,245,874	324,075	697,543	666,890
2012	1,629,425	1,294,535	322,452	731,349	724,175
2013	1,656,895	1,310,071	311,695	735,198	767,471
2014	1,719,769	1,344,658	339,389	793,600	818,390
2015	1,799,392	1,375,310	361,490	835,394	891,075
2016	1,858,637	1,416,388	334,291	895,883	967,828

Source: National Accounts.

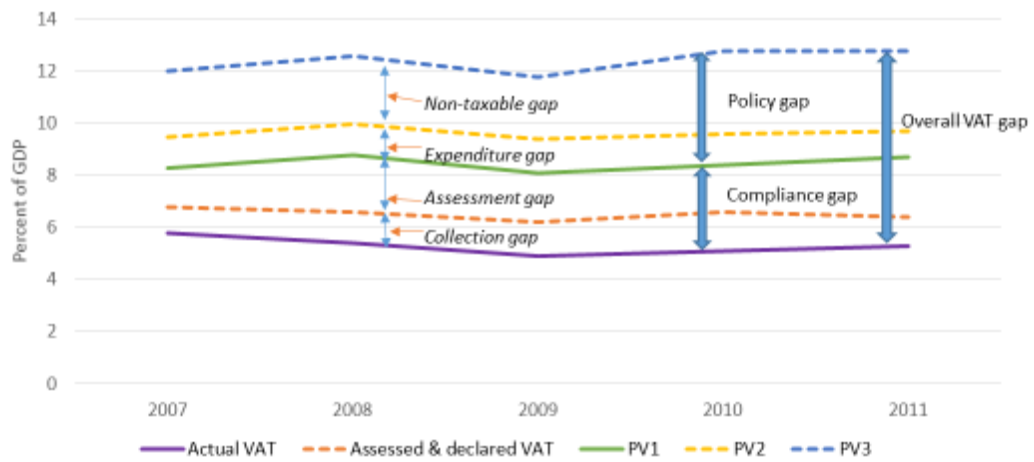
Appendix 2. Definitions of Value-Added Tax Gap Terms

Components of the VAT gap

The total VAT gap is the sum of the compliance and policy gaps, which measure revenue losses due to taxpayer non-compliance and policy reliefs respectively. The RA-GAP approach uses the same analytical model to estimate both components, which can be broken down as shown below. The components of the VAT gap are illustrated in the subsequent chart.

Overall VAT gap	The difference between the potential VAT if all final consumption were taxed at the current standard rate and actual VAT revenue. The overall VAT gap is the sum of the <i>compliance</i> gap and the <i>policy</i> gap.
Compliance gap	The difference between the potential VAT given the current policy framework and actual VAT revenue. The compliance gap is the sum of the <i>assessment</i> gap and the <i>collection</i> gap.
Assessment gap	The difference between potential collections, given the current policy framework, and the VAT declared or assessed.
Collection gap	The difference between VAT declared or assessed and actual VAT revenue collected.
Policy gap	The difference between the potential VAT if all final consumption were taxed at the current standard rate and the potential VAT given the current policy framework. The policy gap is the sum of the <i>expenditure</i> gap and the <i>non-taxable</i> gap.
Expenditure gap	The difference between the potential VAT where most of final consumption is taxed at the standard rate, but where a set of minimal standard exemptions are maintained, and the potential VAT given the current policy framework.
Non-taxable gap	The difference between the potential VAT if all final consumption were taxed at the current standard rate and the potential VAT where most of final consumption is taxed at the standard rate, but where a set of minimal standard exemptions are maintained. Also known as the <i>efficiency</i> gap.
C-efficiency	The ratio of actual VAT to potential VAT if all final consumption were taxed at the current standard rate. C-efficiency can be expressed as: $c - efficiency = (1 - compliance\ gap) \times (1 - policy\ gap)$

VAT Gap Components – Illustrative Chart



Where:

PV1: potential VAT with current framework and no compliance gap

PV2: potential VAT with no expenditure gap

PV3: potential VAT with no policy gap