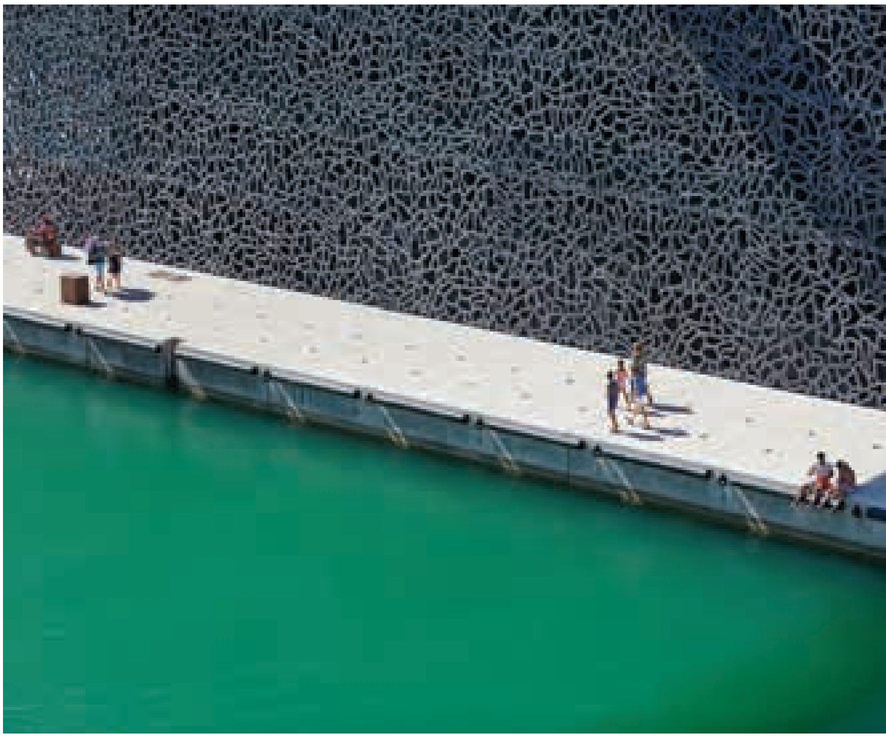
Paying Taxes 2017: *Using the data from the Paying Taxes study, we look at how the VAT compliance burden for businesses has changed globally since our last VAT review in 2010.*

VAT compliance

The impact on business and how technology can help



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[1] PwC refers to the PwC network and one or more of its member firms, each of which is a separate legal entity. Please see www.pwc.com/structure for further details.

Foreword

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The world of VAT[2] has undergone considerable change in the relatively short time since we published our last report on VAT compliance seven years ago. As the world becomes more connected and the digital economy comes of age through mobile technology, cloud computing, business intelligence and real time reporting, we see an increasing number of tax authorities and businesses around the world adopting or reforming their VAT compliance systems to take advantage of the opportunities afforded by technological developments such as data analytics, wide spread safe payment technology and digital transaction processing.

The *Paying Taxes* indicator, which forms part of the World Bank's annual *Doing Business* project, uses a model case study company[3] to look at the ease of paying taxes in 190 economies and this provides insight into the development of VAT systems. VAT (including GST) is now the predominant form of consumption tax around the world with 162 of the 190 economies in *Paying Taxes 2017*[4] having a VAT system in 2015. This is an increase of 15 countries from 2010 and the spread of VAT shows no sign of abating with more countries, including India and the Gulf States, introducing VAT systems within the next couple of years. The trend may be influenced by recent falls in corporate income tax as a percentage of governments' total tax revenues.[5] The resulting shift from direct to indirect tax brings fresh challenges for both governments and businesses; each needing to adapt to ensure they have the right systems and resources available to make compliance with VAT requirements as accurate and efficient as possible for all.

Whilst it is inevitable that the way VAT is collected and reported will continue to evolve, the fact that VAT currently exists in several different forms across the world and has been implemented and reported on in different ways, means that the administrative compliance burden varies hugely between countries, even between those with VAT systems that are built on similar principles. This can make it costly and time consuming for businesses, especially multinational enterprises, to comply with the local requirements in the various countries in which they operate. The data on these compliance times raises many currently unanswered questions as to why there is such a difference in the times recorded. Is compliance time increased due to the system of VAT itself? Is it the reporting requirements that causes the compliance burden? Is it the technology used by the tax authority that can relieve the burden or the technology available for use by the business? Does the stability of the VAT system help encourage automation or is the time to comply influenced by staff costs, i.e. where staff costs are high, does compliance time have to reduce? Does the incidence of fraud in an economy influence compliance time or does the incidence or levels of penalties influence compliance time spent?

[2] In this report "VAT" is used to refer to value added tax, goods and services tax (GST), and equivalent sales tax systems
[3] Further detail on the case study model is included in Appendix 1.
[4] *Paying Taxes* is a joint publication from the World Bank Group and PricewaterhouseCoopers LLP based on the paying taxes indicator data from the *Doing Business* report – see http://www.pwc.com/paying-taxes and http://www.doingbusiness.org
[5] See OECD (2016a), Revenue Statistics 2016, OECD Publishing, Paris. DOI: http://dx.doi.org/10.1787/ rev_stats-2016-en-fr.

Tax authorities are increasingly implementing electronic reporting systems, including "real-time" transaction reporting systems. They are also requiring the use of electronic invoicing, and submission of a Standard Audit File for Tax Purposes (SAF-T) together with the introduction of logical algorithm systems which capture additional data on VAT returns. It is however not clear whether tax authorities are currently fully able to exploit all the data afforded by these systems, but they will very probably be able to do so in the future. As a result, businesses need to be familiar with an ever greater range of data collection solutions, which are being used more extensively, to manage the collection and payment of VAT as reporting obligations increase. We expect these trends to become more pronounced in the future as governments increasingly use indirect taxation on consumption as a cost effective and more certain way to raise revenues. The advent of technological developments such as blockchain may allow tax authorities to meet objectives that go beyond revenue-raising due to the ability to deliver real-time, reliable information to a wide group of people, and create a system where taxpayers and tax authorities have equal confidence in the veracity of the data collected.

Greater consistency between VAT regimes would help to reduce the compliance burden on companies that trade internationally. With increasingly complex tax administration and reporting obligations, the *Paying Taxes 2017* data demonstrates the importance of the increased use of technology by businesses to reduce the time needed to comply with VAT filing and payment obligations. Nowadays, compliance with VAT reporting requirements often begins at a much earlier stage in the process; earlier than month or period end when a business might traditionally have started to compile its returns. Today businesses have to contemplate verifying the accuracy of the VAT treatment of transactions as a real-time activity – starting, at the latest, at the conclusion of each purchase or sale. This can move the compliance burden away from the completion and filing of returns to other parts of the process such as implementing and maintaining systems.

Tax compliance can be expected to become more automated with a particular focus on high quality data being captured in the financial systems. We are already seeing the role data analytics and reporting software can play in ensuring organisations have the control, visibility and business insight they need in today's ever more complex tax landscape.

As we explain in this report, greater efficiency and lower levels of fraud are driven not only by investment by governments in new digital systems, but also by updated accounting systems. Working together, business and government can achieve a more robust and less burdensome system.

In this report we use data from *Paying Taxes 2017* to look at how the VAT compliance burden for businesses has changed since our last VAT review in 2010. We also look at how VAT systems have evolved in a number of countries and consider whether the data can highlight where there might be examples of good practice, both by business as a response to developments by governments, and in tax collection by governments in response to the challenges faced by business. We also consider how these systems might continue to evolve. We hope that you find the information provided helpful and welcome any comments or suggestions for further research as we develop our focus for future studies.

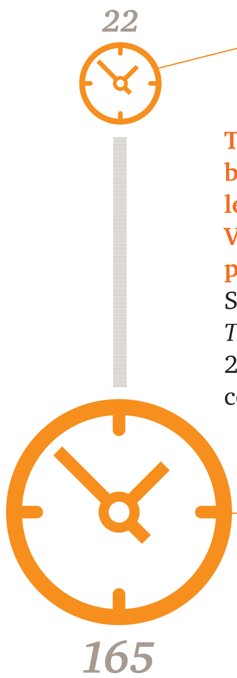
Key Findings

Value added tax (VAT) is the most common consumption tax system used around the world with a form of the tax existing in 162 of the economies covered by *Paying Taxes 2017.*

+15

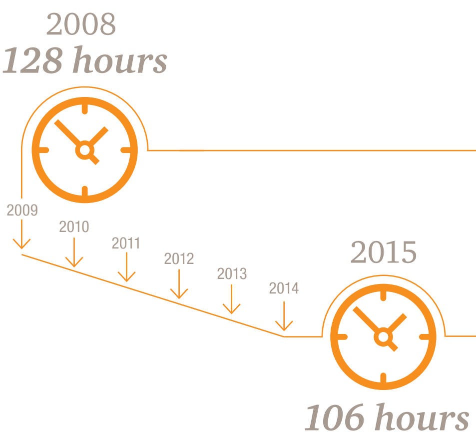
Since 2008, 15 economies, have introduced a new VAT system and this list is expected to grow further with the introduction of VAT in India in 2017 and in the Gulf States in 2018.

According to *Paying Taxes 2017*, **the annual time to comply with VAT for the case study company ranges from 8 hours per year in Switzerland to 1,189 hours in Brazil** – which is equivalent to one working day in Switzerland and nearly 30 weeks in Brazil. Although the guiding principles of these consumption taxes are broadly the same everywhere, the rules have been enacted and implemented in such a variety of forms in different countries that the compliance burden on business varies considerably.



The time to comply varies even between countries of a similar level of development and with VAT systems which are similar in principle, such as the EU Member States. In Luxembourg, the *Paying Taxes* case study company only needs 22 hours a year to comply with VAT compared to 165 hours in Bulgaria.

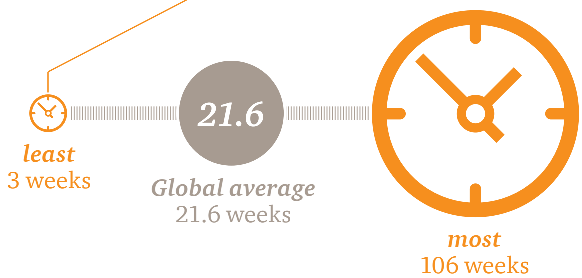
The level of development of an economy appears to affect significantly the time required to comply with VAT. It is currently taking less time for businesses to comply in higher income economies. Will this stay the same as more countries across the income spectrum adopt real-time filing and reporting systems, and as businesses react to these developments and to other changes in technology?



On average across the world, the VAT compliance time for the case study company fell by 17% from 128 hours in 2008 to 106 hours in 2015. The reduction appears to be connected to the implementation, expansion and improvement of online VAT systems and of business IT solutions more generally. Even though the time to comply has reduced on average, we see in the EU that the time to comply is generally higher where filing VAT returns requires the submission of additional documents such as invoices.

27%

It takes 27% less time on average to comply with VAT obligations in countries where businesses pay and file VAT online. Since 2008, 26 more economies have adopted electronic filing and payment systems to make VAT compliance more efficient and to help reduce fraud and evasion.



Paying Taxes has historically focussed on the time required for VAT compliance up to the filing of VAT returns. The *Paying Taxes* study now also looks at the time required to obtain a VAT refund in certain specific circumstances created for the case study company. **The time to obtain a refund ranges from just over 3 weeks to around 106 weeks with a global average of 21.6 weeks.** The new sub-indicator provides new insights on how well the post filing process works. It will be interesting to see how the results develop over time in response to changing technology and processes.

Tax authorities hope that new information technology will reduce fraud, improve compliance and speed up the process of obtaining a VAT refund. Several countries are taking advantage of information technology to standardise the reporting and presentation of VAT information with a number of European countries implementing the Standard Audit File for Tax,[6] while real time and/or daily invoice level reporting requirements are being introduced for example in China, India, Spain and Italy.

[6] SAF-T is a file containing data exported from an accounting system in a standardised format, as defined by the OECD, that allows taxpayers to provide information to tax authorities in a readily usable way.

VAT – what is it and where is it?

VAT is a tax on the value added generated at each stage of production and distribution. In many countries, this means each business in the supply chain collecting the tax and remitting it to the government. It is calculated by a VAT registered supplier charging VAT on sales. The supplier is liable to pay this VAT to the tax authorities. The customer pays the VAT charged by the supplier. In order for the tax to be borne by the ultimate consumer and not on each business, a key feature of VAT is that a business can deduct the tax that it incurs on its purchases from the tax that it collects from its customers. The VAT registered supplier pays over to the tax authorities the difference between VAT charged on its sales less the VAT incurred on its purchases. In this way, the tax differs from retail sales taxes which are imposed, in theory, just once at the point of the final sale to the consumer.

For the VAT specialist though, there are many similar issues between VAT and sales taxes; for sales taxes, each supplier in the chain still requires controls on sales: usually suppliers have to prove that the sale is not made to a consumer in order for sales tax not to be due on the sale.

Malaysia

Malaysia recently replaced its sales tax system with a VAT system and the experience provides some helpful pointers for other countries looking to introduce VAT. In particular, it is important that governments consult widely before introducing a new tax and that there is an extensive education campaign to educate businesses and consumers. Taxpayers need plenty of time to implement a new VAT system and they also need to consult widely within their organisations, not just within the finance department, to understand the full implications for the business of the introduction of a VAT. Cooperation between businesses and the tax authority is also critical to identify and resolve technical and practical issues quickly.

In 2015, 162 (85%) of the 190 economies measured in *Paying Taxes 2017* had a VAT system. This includes five economies (Kiribati, Myanmar, Suriname, West Bank & Gaza, and Yemen) which are not included in the OECD list of countries with VAT but which nevertheless have a tax on consumption where input tax can be deducted from output tax in a system that is similar to a classical VAT system.

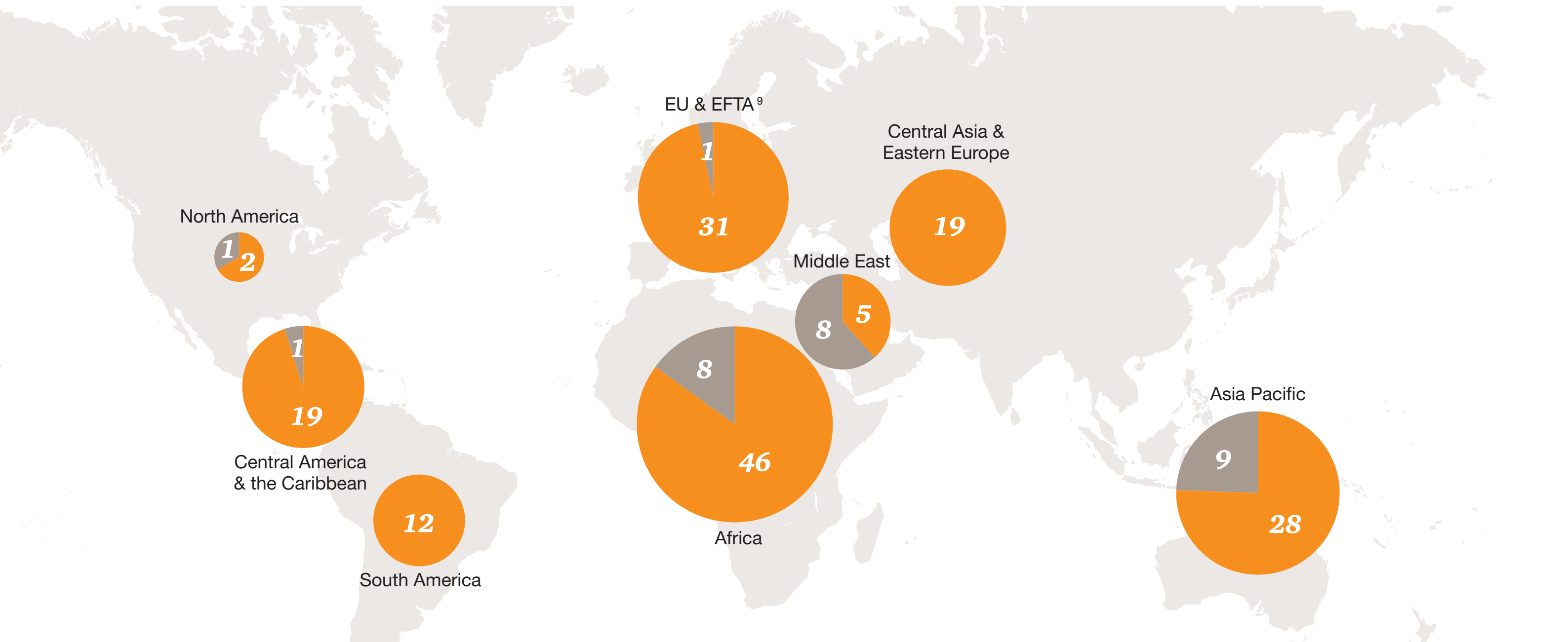
In 2008, only 145 (79%) of the 183 economies then included in *Paying Taxes* levied VAT,[7] but 15 introduced a VAT system between 2008 and 2015.[8] In most cases, where VAT was introduced, the tax replaced an existing form of sales tax which was charged on the sale of goods and services, but for which no input tax could be reclaimed.

Figure 1 shows the economies with a VAT system by region. It is also worth noting that all 28 EU countries have a VAT system (as a requirement of the EU Treaties), and within the OECD, the USA is the only country without a federal VAT, though it has other forms of sales (consumption) tax.

Of the 28 economies in *Paying Taxes 2017* that don't have a VAT system, 12 do however have a form of consumption tax which is charged on sales but which is not a VAT.

Figure 1

VAT is the predominant form of consumption tax around the world



Source: PwC *Paying Taxes 2017* analysis.

[7] Between 2008 and 2015, seven economies were added to the *Paying Taxes* study. Of these, Malta, Barbados and Myanmar have a VAT or GST type system while San Marino, Libya and South Sudan do not. Somalia was added to *Paying Taxes 2017,* but no data is included for the country due to a lack of practical experience with the tax system.

[8] The 15 economies adopting a VAT system were The Bahamas, Burundi, Congo Dem. Rep., Djibouti, The Gambia, Grenada, Iran, Kiribati, Malaysia, Maldives, Seychelles, Sierra Leone, St Kitts and Nevis, St Lucia, and Swaziland. Malta, Barbados and Myanmar have only been included in *Paying Taxes* after 2008 and had VAT systems prior to inclusion. Liberia was treated as having VAT in 2008, but not in 2015.

[9] EU & EFTA includes San Marino, which does not have a VAT system.

India

At the time of writing, (June 2017) India is the next country to overhaul its indirect tax system with GST due to be implemented on 1 July 2017. Whilst historically India has had a range of indirect taxes including State VAT, Central Sales Tax and (CST) Service Tax, the country will introduce a comprehensive GST system which will both integrate and rationalise the different indirect taxes which are collected at state and federal level on the manufacture, sale and consumption of goods and services into a single tax. It is anticipated that this will improve economic efficiency and productivity whilst facilitating a common national market.

With India allowing businesses less time to implement GST than Malaysia, it will be interesting to monitor the transition. The authorities have however taken several steps to facilitate the introduction of GST. This has included the creation of the GST Council which is the key decision-making body on the implementation of GST and has brought together representatives from central and state governments to reach a common consensus on the way forward as well as the collaborative approach taken by government to enter into regular dialogue with industry bodies to understand genuine issues and to seek to resolve them.

Middle East

The Middle East is the region where, at the time of writing (June 2017), VAT is least common. Only five of the 13 economies in *Paying Taxes* had a VAT system in 2015. Governments of the six Gulf Cooperation Council (GCC) countries are however moving to the imminent introduction of VAT. The GCC States have agreed on a common legal framework to introduce VAT in the region. Following the formal GCC VAT framework announcement, each Member State will issue its own national VAT legislation based on agreed common principles.

It is envisaged that the VAT system to be applied in the GCC, will be a standard fully fledged VAT, with most supplies of goods and services being taxed and potentially very few exceptions. VAT will be applied at a standard rate of 5%. A number of specific items, including international supplies will be subject to VAT at zero rate and a limited number of supplies will potentially be exempt from VAT, reflecting economic or social considerations.

It is currently expected that most, if not all, of the GCC member countries are working towards implementing a VAT system by 1 January 2018.[10] However as yet no formal legislation at the GCC or Member State level has been made available, including details on the compliance obligations and mechanisms that will be in place for submitting VAT returns, payment of any VAT obligations and any other additional reporting such as SAF-T or the equivalent to EU Intrastat requirements.

Some member countries such as the UAE are indicating that e-registrations and e-filing will be available and countries such as Saudi Arabia and Qatar are implementing e-filing for income taxes with an expectation of something similar being in place for VAT.

VAT will also be a self-assessment system, a practice that has to date not been adopted for other taxes levied on businesses in this region. There is also the intention to provide clarity and consistency in the application of the law pre and post filing, especially where refunds are due.

[10] For up to date information on the introduction of VAT in GCC Member States see https://www.pwc.com/m1/en/services/tax/vat-in-the-middle-east.html and www.globalvatonline.com

Similar principles, different compliance burdens

Given the large number of economies that now have a VAT system, it is not surprising that there is considerable variation in the VAT compliance burden imposed on businesses in different countries. Within its time to comply indicator, *Paying Taxes* quantifies this compliance burden by measuring how long it would take for the model company to comply with its VAT obligations in the economies where VAT exists. This includes the time required to prepare, file and pay VAT each year, but does not look at any processes that may occur after a VAT return has been filed. The impact of some post-filing processes, and in particular what is needed in order to obtain a VAT refund, are addressed later in this publication.

The case study company is an entirely domestic company and so, unlike many real businesses does not have any imports or exports. Cross-border transactions, which present particular problems for VAT systems and can place a considerable compliance burden on companies, are not covered by the study. The degree of variation between VAT systems highlighted by *Paying Taxes* does however indicate the potential for greater harmonisation of VAT systems which has the potential to benefit multinational enterprises. Further detail on the model company and the time to comply is included in Appendix 1.

Switzerland has the lowest time to comply with VAT thanks to having a stable tax system, a single rate of VAT, levied only at a federal level with quarterly rather than monthly filing and tax return preparation is highly automated.

Brazil

In 2008, Brazil introduced its Public System of Digital Accounting (Sistema Público de Escrituração Digital or ‘SPED’). SPED has been extended to cover the most significant federal and state taxes levied in Brazil and becoming more comprehensive in terms of the information that it covers. SPED reporting files currently enable the tax authorities to track every transaction digitally and allows tax-relevant transactions to be linked with the accounting information (which is also to be submitted as part of the SPED program).

The SPED implementation created some challenges for a large number of taxpayers, but as the system has reached maturity it has resulted in the reduction of the time to comply, not only by converting manual work into digital processing, but also because of natural improvements in taxpayers’ processes and the quality of tax data.

Some control procedures and duplicated data filings have already been eliminated in the most recent versions of the SPED, and all VAT returns are now filed online. Overall, for the model company used in *Paying Taxes*, the estimated VAT compliance time for Brazil has reduced from 1,374 hours in 2008 to 1,189 hours in 2015 – a 13% decrease.

The time needed to comply with VAT each year by the case study company, given its specific fact pattern, varies significantly around the world from 8 hours in Switzerland to 1,189 hours in Brazil. This corresponds to around one working day per year being needed for VAT compliance in Switzerland, but around 30 weeks in Brazil.

The estimated time required for VAT compliance in these two countries is shown in Table 1 opposite broken down into the main categories of time to prepare, file and pay VAT as used in *Paying Taxes*. There are a number of important differences between the two VAT systems which explain the difference in these estimates. In Switzerland there is a single rate value added tax which is filed quarterly, in Brazil, on the other hand, the model case study company would be subject to four separate value added taxes, each of which has to be calculated and filed on a monthly basis. In addition, three of the Brazilian taxes are levied at the federal level and one at the State level, with considerable differences in the relevant rules and regulations, not only in their technical definitions, but also in the calculations. An additional complexity typical of the Brazilian tax system derives from the numerous changes applied to the tax rules and compliance requirements every year, which causes local taxpayers to have to update and check parameters on their systems on a regular basis. In this context, even with the relatively high level of standardisation in the reporting obligations existing in Brazil, Brazilian taxpayers still have to invest significant time in monitoring the tax law and reviewing their tax filings. In Switzerland, VAT can be fully automated by a business such that once a company's accounting system has been correctly set up to calculate VAT, the VAT reports are produced automatically including the annual reconciliation. All filing and payment is done online. Furthermore, the VAT system in Switzerland is stable, well established and changes in the legislation are infrequent.

Table 1: Break down of time to comply with VAT in Switzerland and Brazil

Hours/Year	Switzerland	Brazil
Preparation	6	707
Filing	1	361
Payment	1	121
Total	**8**	**1,189**

Source: *Paying Taxes 2017*

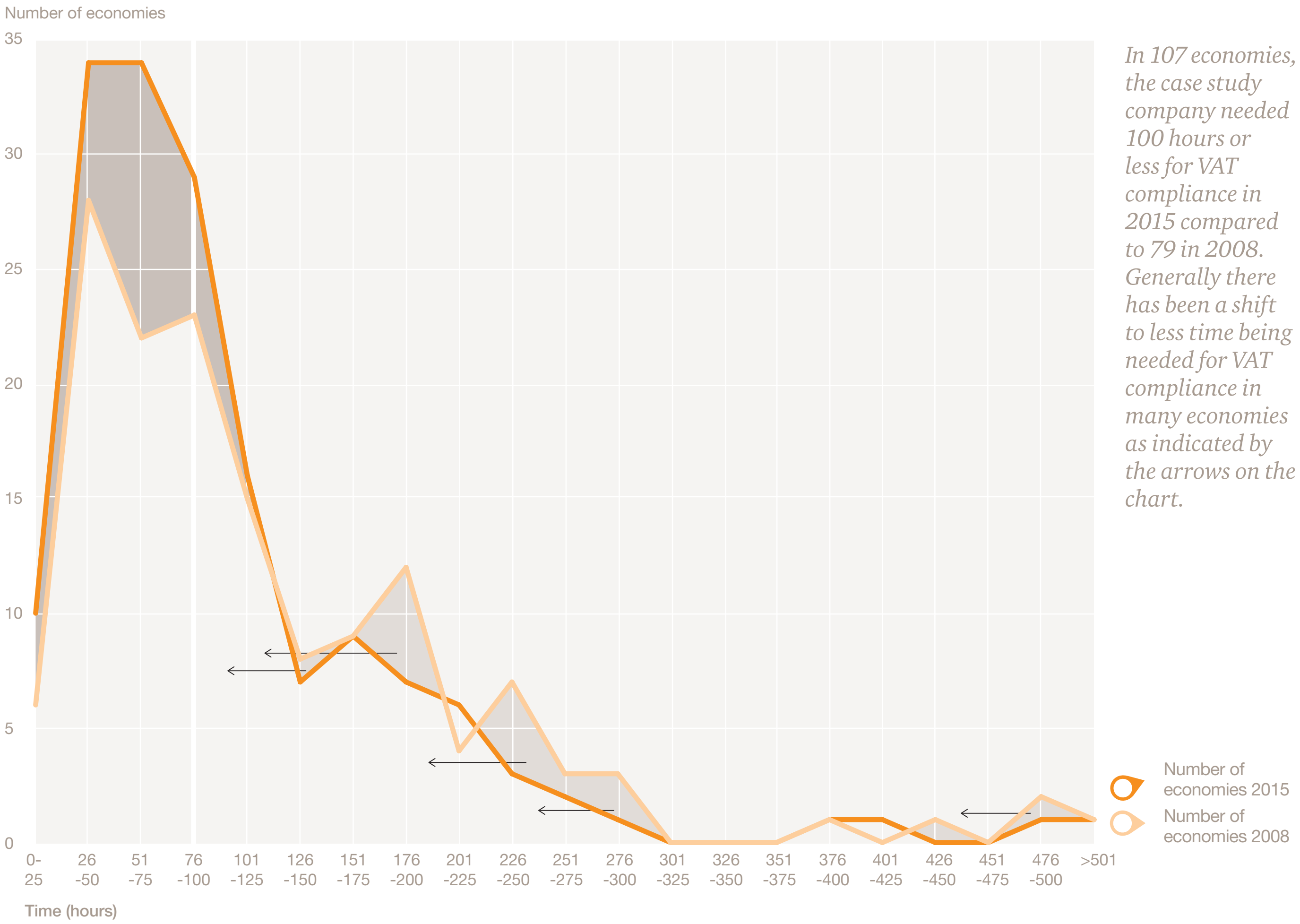
While Switzerland and Brazil are at opposite ends of the spectrum for VAT compliance, the majority of economies in the study fell within a range of 25 to 200 hours (per year) in 2015. In 10 economies it took 25 hours or less, while in 4 economies over 300 hours were needed to prepare and file returns and pay VAT. Between 2008 and 2015 we have seen some movement across the distribution, with 107 economies taking 100 hours or less for their VAT compliance in 2015 compared to 79 in 2008, as shown in Figure 2.

VAT systems are found in countries across all levels of economic development.[11] However, in high income countries, the time taken to comply with VAT, from the *Paying Taxes* data, tends to be lower. This suggests that both governments and companies in more developed countries may have more streamlined VAT compliance procedures. Figure 3 shows that in 2015, 72% of countries in the quintile with the shortest times to comply with VAT, and 30% of those in the second quintile, are high income countries. In contrast, 57% of economies in the quintile with the longest time to comply and 65% in the second highest quintile are low or lower middle income economies.

The majority of economies in the study fell within a range of 25 to 200 hours of VAT compliance time in 2015.

Figure 2

Distribution of the time taken to comply with VAT in 2015 and 2008



In 107 economies, the case study company needed 100 hours or less for VAT compliance in 2015 compared to 79 in 2008. Generally there has been a shift to less time being needed for VAT compliance in many economies as indicated by the arrows on the chart.

Source: PwC *Paying Taxes 2017* analysis.

[11] Income levels are as per the World Bank Group designations – see https://datahelpdesk.worldbank.org/knowledgebase/articles/378833-how-are-the-income-group-thresholds-determined

Although the *Paying Taxes* data does not provide definite answers as to why higher income economies tend to have VAT systems that are easier to comply with, it is possible to speculate on the reasons. It may be that higher income economies are more likely to have extensive and efficient IT systems and infrastructure with a greater likelihood that VAT systems are automated, resulting in shorter times to comply. It could also be that less information has to be submitted with VAT returns as tax authorities place more reliance on being able to audit a taxpayer's systems or use data mining to identify risks rather than scrutinising large numbers of individual returns. It may also be that in higher income countries elements such as tax culture, co-operative compliance, risk management, and the understanding that tax authorities have of taxpayers' businesses are better addressed and so help increase the effectiveness and efficiency of tax systems.

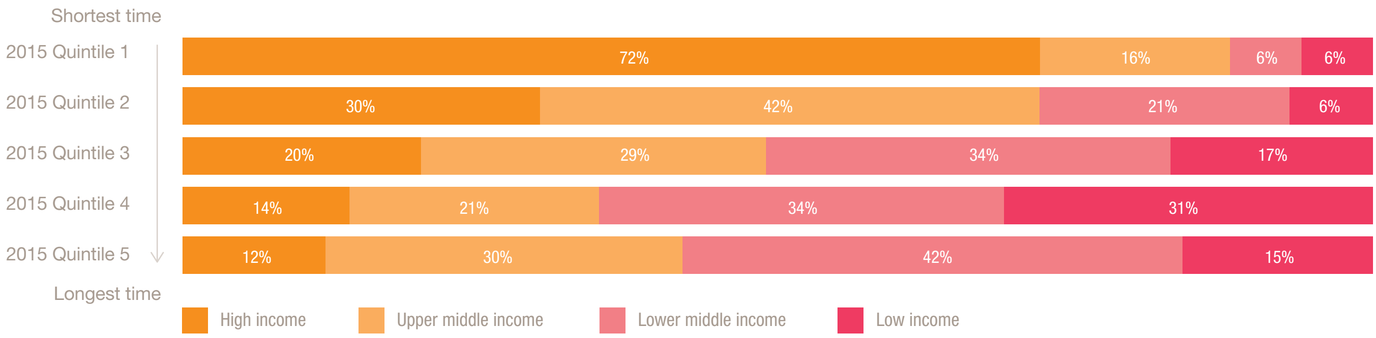
Compliance time is also likely to be lower where tax systems are stable, tax legislation is well understood and does not change frequently, and administrative and legal frameworks operate in a way that leads to an efficient tax system. This may well be more likely in the more developed economies. It may be, in addition, that in a more stable environment, businesses are better able to plan and to invest in their technology and so are more likely to have up to date compliance systems that include higher degrees of automation. Even in less stable environments and in less wealthy economies, businesses are likely to have access to an increasingly wide range of technologies that can assist them in their tax compliance obligations, even if some of these are less advanced or less widely used than in more developed economies. There may be opportunities for governments in the developing world to use technology to leap frog the compliance regimes in higher income economies.

These factors may help to explain the difference in compliance time, but the increasing use of information technology is leading not just to changes in the way businesses harness technology to streamline their compliance processes, but also to some fundamental changes in the ways in which VAT is administered by governments. In the digital age, the ability to record, share and analyse vast amounts of data in real time is leading to the introduction of new VAT compliance systems by governments in which transactions are recorded into tax authorities' databases as they happen and sales by one taxpayer can be matched with the corresponding purchase by another taxpayer. This can potentially limit the opportunity for fraud, but also affects how businesses operate their VAT systems and how tax authorities monitor and audit VAT returns with consequent impacts on the time and effort required for compliance. This is discussed further on page 22.

VAT compliance is faster in high income economies, possibly due to more efficient and trusted IT systems, greater reliance on audits of such systems, and stable and well understood legislation. Improvements in IT also offer the possibility of reporting transactions to tax authorities in real-time.

Figure 3

Time to comply with VAT by quintile and by income level of economies in 2015



Note: Quintile 1 is the lowest time to comply.
Source: PwC *Paying Taxes 2017* analysis.

VAT in the EU – why is the compliance burden so varied?

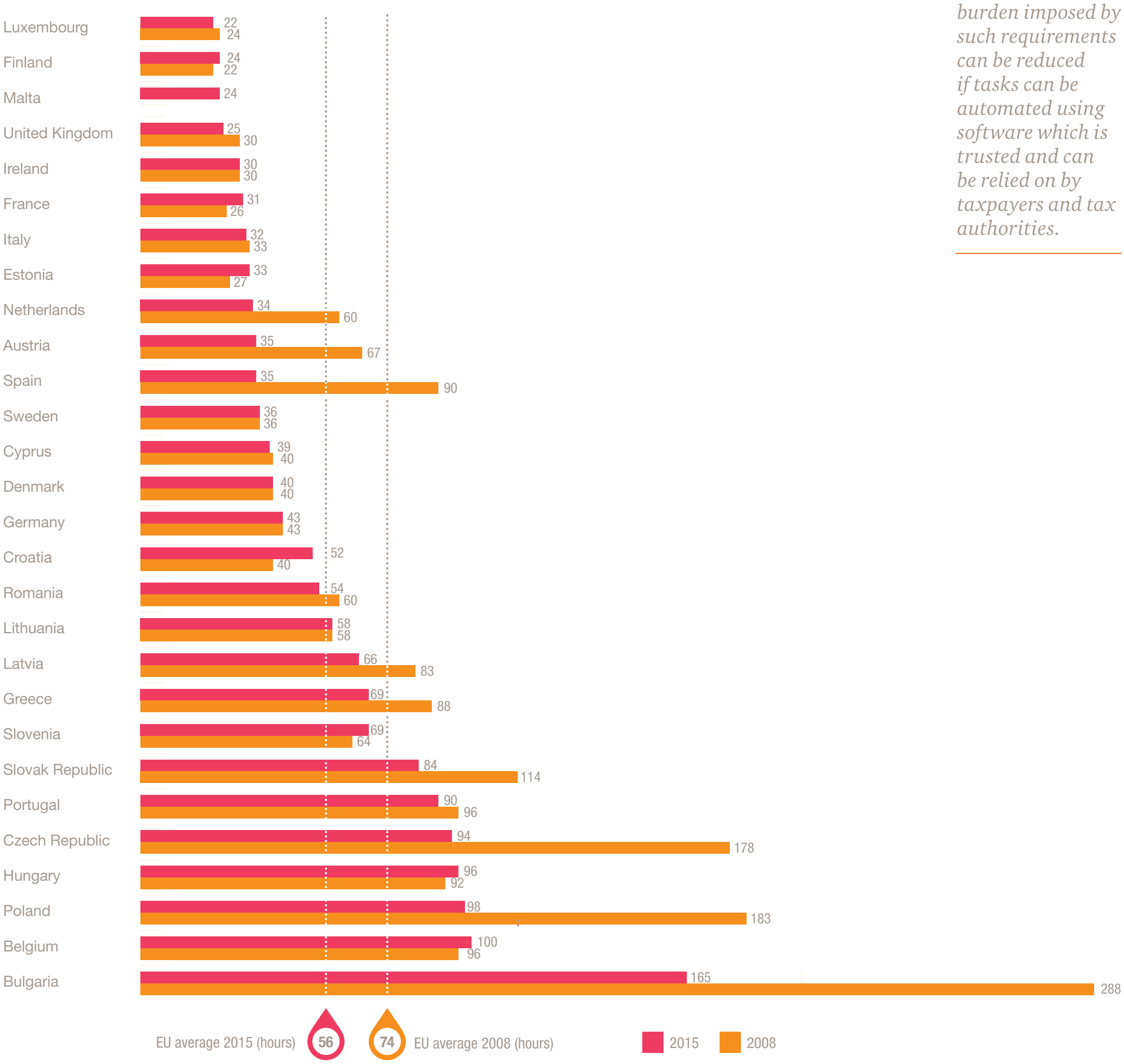
While the income level of an economy appears to affect the time to comply with VAT, there can still be large variations between economies in the same income grouping. In the European Union, all the Member States are in the high income category, except Bulgaria and Romania which are in the upper middle income band. Furthermore, there is a common legal framework for the EU VAT system (although with a large number of individual derogations available).[12]

However, there is still a wide range of results (in terms of the annual time taken to comply) from 22 hours in Luxembourg to 165 hours in Bulgaria as shown in Figure 4.

In the EU, VAT compliance generally takes longer if additional documents have to be filed with the VAT return, where extra records have to be maintained, additional analysis has to be performed, or separate VAT registers kept. The burden imposed by such requirements can be reduced if tasks can be automated using software which is trusted and can be relied on by taxpayers and tax authorities.

Figure 4

Time to comply with VAT for EU Member States for 2008 and 2015 (hours)



Source: PwC *Paying Taxes 2017* analysis.

[12] https://ec.europa.eu/taxation_customs/business/vat/derogations_en

In Luxembourg, for the *Paying Taxes* case study company, VAT return preparation activities such as gathering accounting information for analysis and calculation of the tax liability take just 16 hours, compared to 114 hours in Bulgaria. For filing and payment activities, in Bulgaria it took far longer than in Luxembourg, due in part to the requirement to submit additional documents with the tax returns (14 hours), extracting and maintaining accounting information for tax payment calculation (12 hours), and an analysis of forecast data and the associated calculation for advance tax payments (12 hours).

In general, the Member States with the longer compliance times are those where additional information, such as invoices or lists of invoices, has to be submitted at the same time as the VAT return, or where it is necessary to keep a VAT register separate from the main accounting system. Where the VAT compliance time is lower, this is often due to companies using advanced software that can automatically prepare VAT returns from their accounting data with little manual intervention. The level of trust that a business has in its software, systems and processes may also have an influence on the approach to compliance and the time taken to comply. In our experience, in some countries and in some businesses, extensive manual reviews and reconciliations are seen as standard practice while in others, light touch reviews are more likely to be the norm due to greater reliance being placed on technology, systems and related controls and processes.

While Bulgaria has the highest time to comply in the EU at 165 hours, this has reduced considerably from 288 hours in 2008 due to the introduction and improvement of electronic systems which has reduced the manual intervention required to prepare and file VAT returns from the underlying accounting information. The compliance times for the Czech Republic and Poland have also reduced significantly and, similar to Bulgaria, this is largely due to the introduction and improvement of tax and accounting software and of electronic systems used by companies for filing and paying VAT. While some of the improvements in systems come from governments and tax authorities amending filing systems and allowing information to be submitted electronically, other improvements are in the accounting systems implemented by businesses themselves.

Overall however, the average time to comply for the EU has fallen from 74 hours to 56 hours since 2008; a 24% reduction. Reductions in the time to comply have been observed in 15 (out of the 28) EU countries, including Bulgaria.

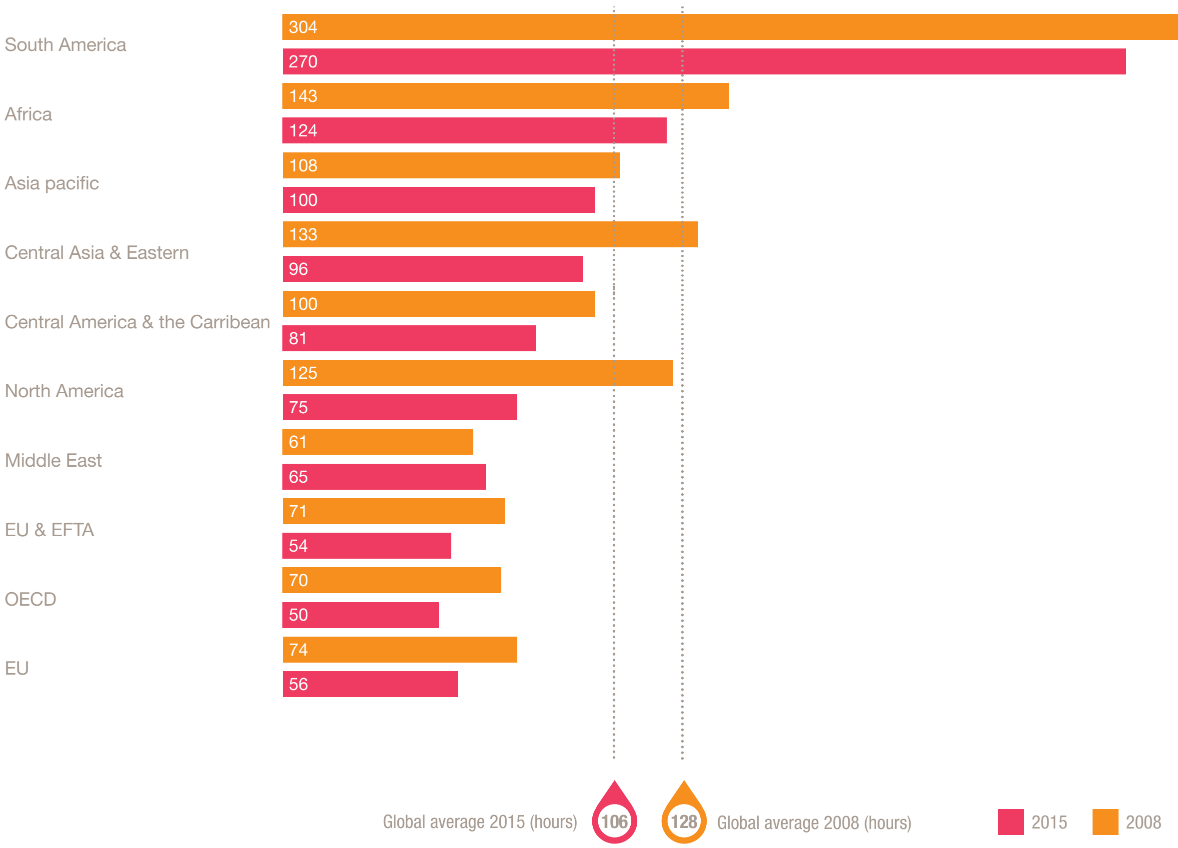
Seven EU countries have increased their VAT compliance time since 2008. The greatest increase was in Croatia where more information on some transactions was required to bring their VAT system into line with the EU's requirements as part of Croatia joining the EU in 2014. Other reasons for increases in compliance time included changes to unclear VAT legislation and new annexes being added to VAT returns.

The time to comply with VAT around the world has fallen since 2008

Across the world, the average VAT compliance time for the case study company has fallen by 22 hours from 128 hours in 2008 to 106 hours in 2015 as shown in Figure 5. With the exception of the Middle East,[13] where the time to comply with VAT has increased slightly between 2008 and 2015, all regions have shown a significant reduction in the time to comply. The increase in the Middle East is due to Iran introducing a new VAT system which requires 72 hours to comply with compared to the previous regional average of 61 hours.

Figure 5

Average time needed to comply with VAT in each region for 2008 and 2015 (hours)



Source: PwC *Paying Taxes 2017* analysis.

[13] Excludes the Gulf States at present – see page 9 for more information on the introduction of VAT in this region

A recurring finding of *Paying Taxes* has been that the introduction, expansion and improvement of online systems for filing and paying taxes leads to reductions in the time to comply with tax compliance obligations, including VAT. Figure 6 shows that the average time taken to comply with VAT in 2015 is 33 hours lower where online filing and payment is used. In 2008, this reduction was only 20 hours. In *Paying Taxes,* an economy is classified as having an online filing and payment system if in that economy the majority of companies of a similar size to the case study company file and pay their taxes online.

In 2008, of the 145 economies that had a VAT system, 48 used online filing and payment systems, but this had risen to 76 out of 162 economies by 2015.[14] The largest reduction in VAT compliance time between 2008 and 2015 was in Kenya where the time to comply fell from 300 hours in 2008 to 81 hours in 2015 largely as a result of the introduction of electronic systems. The reduction in the time to comply occurred over several years as initially the system was not particularly fast or efficient and it took taxpayers several years to become familiar with the system and to receive the maximum benefit. In addition, the VAT legislation has been simplified, and the tax authority has been providing education and information to taxpayers and taxpayers' service centres have been established.

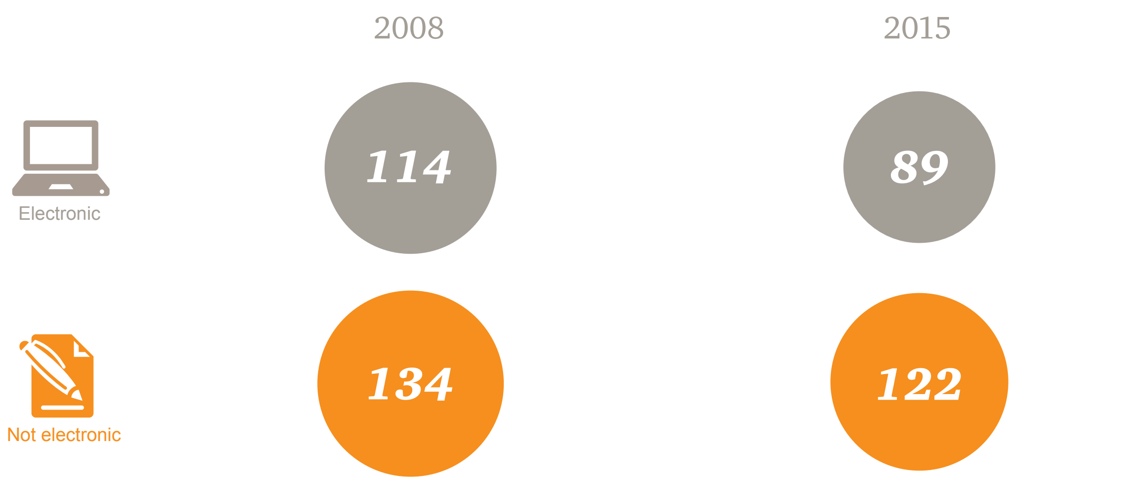
Reductions of over 100 hours in the time to comply were also seen in Armenia, Belarus and Morocco which also introduced online systems in the period. In other countries such as Chile and Jamaica, the adoption of online filing and payment only reduced the compliance time by a few hours. In our experience, taxpayers were probably already using software to prepare their tax returns, so the introduction of online filing by tax administrations only affected the submission of returns. In other economies, electronic filing and use of accounting software was already in place and the change between 2008 and 2015 related to the introduction of electronic payments which, in itself, could have had a limited effect on the overall time to comply. Nevertheless, prior to the introduction of online payments, taxpayers may have had to make payments in person at tax offices or banks which can be time consuming.

Nineteen economies reduced their VAT time to comply between 2008 and 2015 despite not introducing electronic filing and payment. Of these, the most significant reductions were in Senegal and Algeria with reductions of 195 hours and 122 hours respectively. In Senegal, the reduction is due to the increased use of, and improvements in, accounting software. Improvements in technology are also responsible for the reduction in time seen in Algeria where it is now common for companies to use software that automatically calculates VAT and prepares the relevant tax documentation.

The introduction and improvement of electronic systems for filing and paying VAT online is the most common reason for reductions in the time to comply with VAT obligations.

Figure 6

Average time to comply for economies with and without electronic filing and payment of VAT (hours)



Source: PwC *Paying Taxes 2017* analysis.

[14] The following 26 economies adopted online filing and payment between 2008 and 2015 as per the *Paying Taxes* methodology: Armenia, Belarus, Chile, Colombia, Costa Rica, Georgia, India, Jamaica, Kenya, Kosovo, Macedonia, FYR, Moldova, Mongolia, Montenegro, Morocco, Nicaragua, Paraguay, Poland, Romania, Serbia, Slovak Republic, Tajikistan, Tunisia, Ukraine, Uruguay, and Zambia. Malta joined *Paying Taxes* after 2008 and had electronic filing and payment at that time. Malaysia introduced a VAT system in 2015 with electronic filing and payment in place.

For Vietnam, there was a reduction in the time spent of 81 hours to 219 hours. While this was due in part to technological improvements, VAT filing has been changed from monthly to quarterly and the tax authority now requires less information to be included in the tax return filings. In addition, there is a better alignment of tax rules with accounting rules. In Bolivia, the time fell from 480 to 408 hours due to the increased use of accounting software to prepare VAT calculations, which in turn made performing reconciliations easier.

These examples show that the compliance time can be reduced if taxpayers have access to good software for calculating their taxes. Tax authorities can help reduce time if they are able to simplify the requirements as to what information has to be filed, or take a report in a digitally extracted format, and if changes to the tax reporting requirements and regulations remain sufficiently stable this will enable businesses to adopt automated solutions financed from the reduction in staff hours.

Five countries which have had electronic filing and payment systems in place since at least 2008, Azerbaijan, Brazil, Bulgaria, China, and Mexico, reduced their time to comply by more than 100 hours since 2008.

As explained earlier, in Brazil the reduction is largely due to the introduction of an electronic system for recording all transactions[15] and the consequent reduction in certain filing obligations. In China, there was a fundamental change in the VAT system which began in 2008 and was completed in 2016 to move from a production based to a consumption based indirect tax system. Prior to the change, the VAT on some purchases was not allowed as a deduction from output VAT which required time consuming analysis to separate the deductible and non-deductible items. This change to the underlying system, and the simplification of calculation requirements, has helped to reduce the VAT time to comply in China from 216 hours in 2008 to 132 hours in 2009. The time then continued to fall to 88 hours in 2015 mainly due to improvements in electronic systems introduced by the tax authority for reporting transactions and a greater use of tax and accounting software including an increase in the number of processes that can be carried out electronically which reduces the number of times a taxpayer needs to visit a tax office in person.

Reductions in the time to comply for Azerbaijan, Bulgaria and Mexico arose from a number of improvements to electronic systems used by businesses for preparing VAT returns and the electronic systems used for submitting returns, the use of e-invoicing in Azerbaijan, and the abolition in Mexico of an annual summary VAT return.

As well as changes in online filing and payment systems, reductions in the VAT time to comply arose from improvements in and greater use of accounting software, from reduced filing frequency, fewer information requirements, e-invoicing and simplification of VAT regimes.

[15] See the explanation of the Brazilian VAT system on p10.

In China, in 2008, VAT on some purchases was not allowed as a deduction from output VAT which required time consuming analysis to separate the deductible and non-deductible items. Making deductions universal has helped to reduce the VAT time comply in China from 216 hours in 2008 to 132 hours in 2009 and to 88 hours in 2015 (due also to improvements in technology).

Can technology and real-time systems make VAT refunds easier?

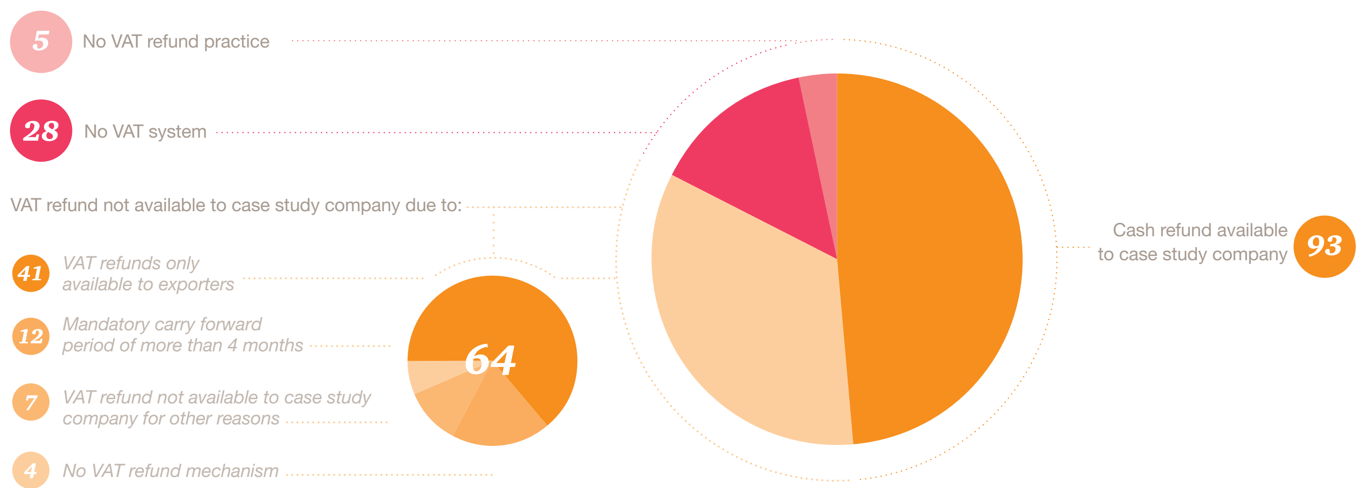
The ability to efficiently obtain a refund of excess input VAT is essential if a VAT system is to be neutral for businesses. Delays in obtaining refunds can create cashflow difficulties for companies and increase financing costs. Where refunds are not available at all, this increases the costs to business and causes economic distortions.

In *Paying Taxes 2017,* the new post-filing index considers how long it would take the case study company to obtain a VAT refund following the purchase of some manufacturing machinery. As shown in Figure 7, of the 162 economies where a VAT system exists in *Paying Taxes*, the case study company is viewed as being able to obtain a VAT refund in 93 of them. In 12 economies the mandatory carry forward period before a VAT refund claim can be made is 4 months or longer so that for our scenario the excess input VAT would be fully utilised against output VAT before a claim could be made. For the *Paying Taxes* case study therefore, these economies are treated as though no VAT refund claim is available, though a refund would in practice be available under other scenarios.

Of the remaining 57 economies, 41 only provide VAT refunds to exporters and so no refund is available to the case study company which trades purely domestically. For the remaining 16 economies, four have no refund mechanism at all, three do not allow input VAT on capital purchases to be recovered and three do not charge VAT on manufacturing machinery of the type used in our case study. In one country, VAT cannot be refunded in the first two years of a company's life, which means a refund is not available to our case study company which is in its second year of trading. In five economies there is no VAT refund practice as there is limited experience of companies receiving refunds.

Figure 7

Availability of VAT refunds to TaxpayerCo (number of economies)



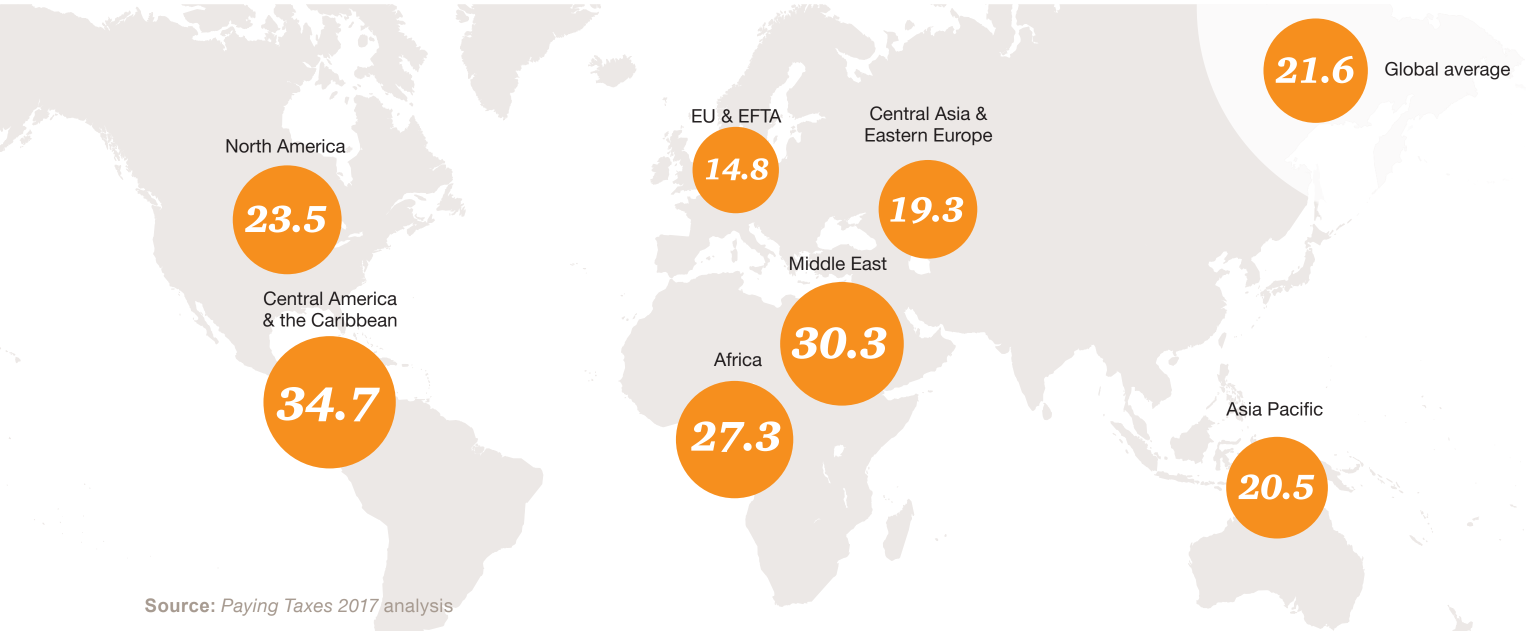
Note: In Taiwan, China a refund is available to the case study company even though there are restrictions as to the type of company that can claim a refund.
Source: *Doing Business* database

Of the 93 economies where a VAT refund is available, on average it takes 21.6 weeks between incurring the excess input VAT and receiving a refund as shown in Figure 8. The shortest time is in the EU & EFTA region where it takes 14.8 weeks, and the longest is in Central America & the Caribbean at 34.7 weeks.

In many economies, a VAT refund claim is likely to trigger a tax audit which in most cases will need to be resolved before the refund is paid. As can be seen in Figure 9, this increases the time that a company has to wait before it receives a refund. As with the time to comply, the time spent waiting for a refund tends to be shorter in higher income economies for the case study company. This may be due not just to the availability of better systems for administering VAT but also due to the fiscal capacity of governments to pay a refund. Indeed, in our experience, the availability of refunds is often heavily influenced by factors such as revenue collection targets, the cashflow position of governments and, more generally, the attitude towards the principle of VAT neutrality.

Figure 8

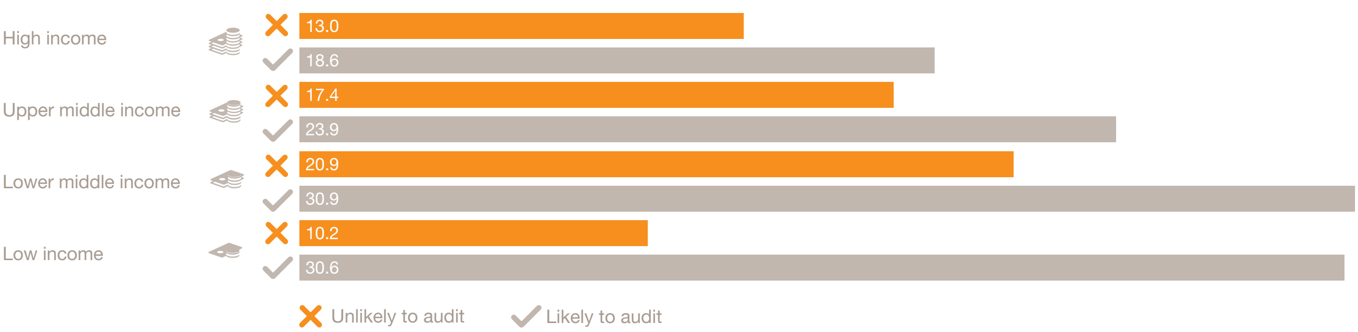
How long is it likely to take in practice for a company to receive a VAT refund? (weeks)



Source: *Paying Taxes 2017* analysis

Figure 9

Where VAT refund claims are subject to audit, it takes longer to obtain a refund



Note: In the low income economies only Ethiopia is unlikely to audit. In upper middle income and lower middle income economies, only three economies are unlikely to audit.
Source: PwC *Paying Taxes 2017* analysis.

Given the anticipated improvements in VAT systems and real-time data collection, it will be interesting to see whether VAT refunds will occur more quickly in future and whether audits of VAT refund claims reduce.

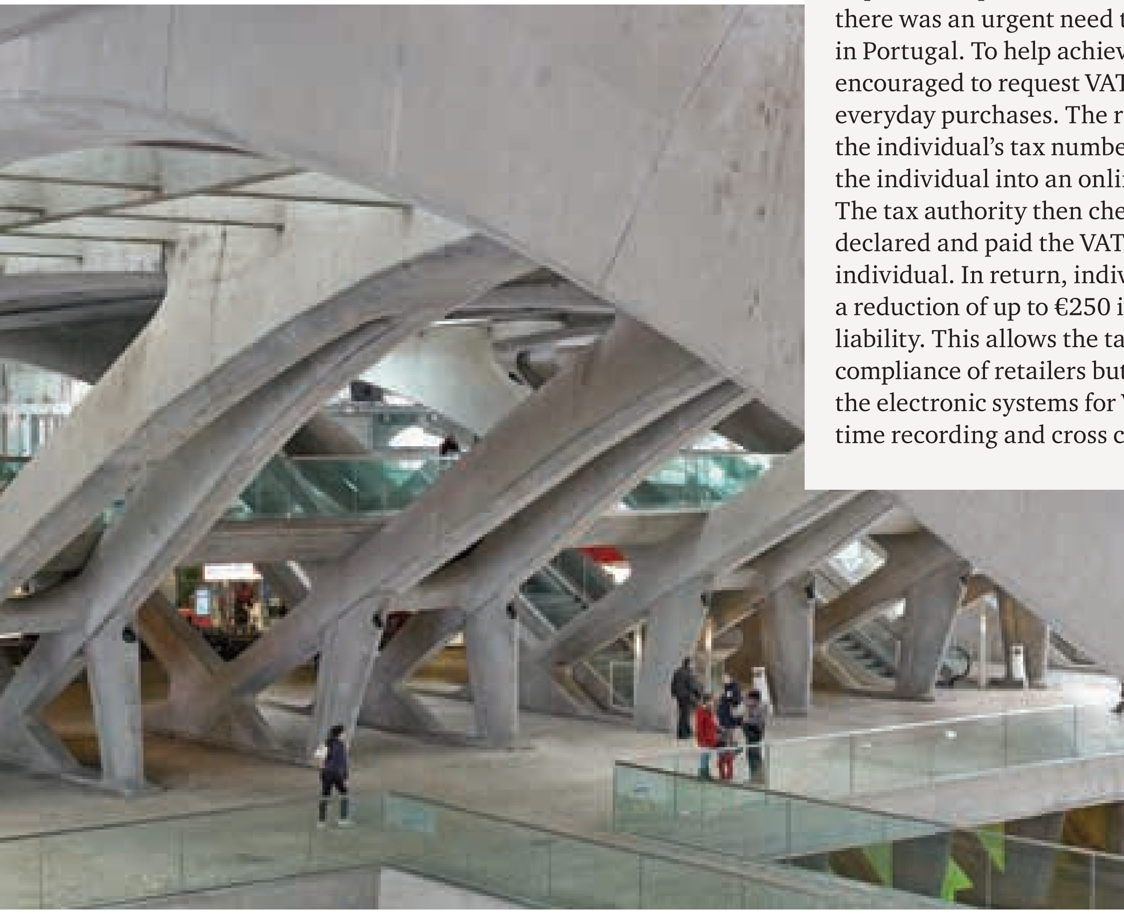
In theory, the increased use of electronic systems by tax authorities and taxpayers can make it easier to collect, transfer, store and analyse large amounts of data without significantly increasing the time spent by companies on compliance. As noted above, several tax authorities are looking to take advantage of the increased availability of data when it comes to auditing a business's VAT compliance and granting refunds. Many tax authorities hope that increased collection and evaluation of data on a real time basis will help to reduce the levels of VAT fraud while increasing the efficiency of the VAT compliance and the refund processes.

In Europe we are seeing the increased use of the OECD's Standard Audit File for Tax Purposes (SAF-T)[16] although not in a uniform manner.[17] To date SAF-T has only been fully adopted in Luxembourg, though Portugal, Austria, Germany, Poland, Norway and France all have a limited scope version. SAF-T provides an international standard for the electronic exchange of tax data, along with standard tests to be performed during a tax audit. While the compilation and provision of the data can be time consuming, it should help to speed up future audits.

Advances in technological capabilities are leading to the introduction of Standard Audit File for Tax and real-time reporting systems which have the potential to benefit both tax authorities and taxpayers.

Portugal

In Portugal, certain measures were introduced which provide a good example of the possibilities that technology affords to increase tax collection and improve compliance. Following the financial crisis, there was an urgent need to increase tax revenues in Portugal. To help achieve this, individuals were encouraged to request VAT receipts on certain everyday purchases. The receipts, which contain the individual's tax number, can then be entered by the individual into an online tax authority database. The tax authority then checks that the retailer has declared and paid the VAT that they collected from the individual. In return, individual taxpayers benefit from a reduction of up to €250 in their personal income tax liability. This allows the tax authority to check the compliance of retailers but is only possible thanks to the electronic systems for VAT which allow for real-time recording and cross checking of data.



[16] See http://www.oecd.org/tax/administration/guidancenote-guidancefordevelopersofbusinessandaccountingsoftware concerning taxauditrequirements.htm
[17] Luxembourg requires more than 200 data fields – France only 22 (max). The OECD will launch a study on the application of the SAF-T in different countries in 2017/18.

China

China's introduction of its 'Golden Tax System' to reduce fraudulent deductions of input VAT was completed in May 2016. VAT invoices for purchases have to be issued using government approved tax software. The invoices are then authenticated by the Chinese Tax Authority before the customer can claim a VAT credit. The *Paying Taxes* case study company has to report data on a monthly basis to the tax authority and visit the tax office to have its purchase invoices verified before claiming a VAT credit. Gradually, the various steps of complying with the Golden Tax System are becoming fully electronic, reducing the need for taxpayers to visit the tax office and ultimately to have a fully operational real time information system.

Real time data reporting systems are also becoming more popular as technological advances provide the potential for tax authorities to require taxpayers to submit data electronically at the time the underlying transaction takes place. China completed its implementation of its 'Golden Tax System' in May 2016, so it will be interesting to see the impact this might have on the *Paying Taxes* indicators under this system.

In Spain, from July 2017, suppliers who file monthly VAT returns (and certain other taxpayers) will need to transmit invoice data to the tax authority within a few days of the transactions being made. In Italy, a system is being introduced in 2017 that will require VAT payers to report tax data every 3 or 6 months. France had planned to introduce a real-time system for purchases in 2016, but this is currently on hold.

These processes could be expected to reduce the time that it takes for a company to receive a refund of excess input VAT. Real-time information systems that enable VAT on sales to be matched with the corresponding purchases should reduce the opportunity for fraud and consequently the need for VAT audits as part of a tax administration's process in validating VAT refund claims. Complying with real time reporting however poses several challenges for taxpayers. It requires taxpayers to introduce, by the go-live date for real time reporting, a system that enables the data to be submitted and it encourages businesses to undertake real time parallel checking of their transactions in an attempt to spot any errors in advance of the tax authorities.

Appendix

Paying Taxes 2017

This study uses data collected by the World Bank Group from contributors around the world for *Paying Taxes 2017*, with additional information and analysis provided by PwC. A summary of the *Paying Taxes* methodology is set out below, and more information can be found on the PwC and World Bank websites.[18]

Paying Taxes 2017 measures the ease of paying taxes in calendar year 2015 across 190[19] economies. It uses four indicators which cover the cost of taxes (the Total Tax Rate), the cost of compliance including the time taken to prepare, file and pay taxes and the number of tax payments made, and the time spent to complete certain processes which may take place after a tax return has been filed (the post-filing index). The post-filing index is a new indicator measuring two specific processes; obtaining a VAT refund arising on the purchase of a capital asset, and dealing with a voluntary correction of an inadvertent error in a corporate income tax (CIT) return. The data collected for the *Paying Taxes* project is extensive, and includes the time required for VAT compliance activities.

The case study company

The *Paying Taxes* indicator uses a case study company with a standard fact pattern. The case study company is a limited liability company that is fully subject to VAT. VAT is not therefore a significant cost to the company, as the tax is borne by the company's customers, but the administration of the tax imposes a compliance burden on the company. The company is domestic and does not participate in any foreign trade (no imports or exports). A high level description of the case study company is provided in Figure A.1.

In addition to the description in Figure A.1, for the post-filing index it is further assumed that the company makes a large capital purchase of machinery. This gives rise to excess input VAT, which in the ordinary course of business is considered to be recovered no later than four months from the period in which the VAT was incurred/paid. The post-filing scenario considers what would happen if the company were to try to claim a refund of the excess input VAT.

***Figure A.1:** The Paying Taxes case study company – key parameters*

- A limited liability company
- Operates in the country's most populous city
- Is 100% domestically-owned and has 5 owners
- Is in its second year of operation
- Purchased all the assets (except the asset bought in the VAT refund scenario) shown in its balance sheet and hired all its workers 2 years ago.
- Has 60 employees – 4 managers, 8 assistants and 48 workers, all nationals
- Performs general industrial or commercial activities
- Does not participate in any foreign trade (no imports or exports)
- Has a turnover of 1,050 times income per capita

This list only shows a high level summary of facts and assumptions for the *Paying Taxes* case study company. See *Paying Taxes 2017* for a complete set.

Source: *Paying Taxes 2017*

[18] www.pwc.com/payingtaxes and www.doingbusiness.org
[19] Somalia is included in the 190 economies as it is included in the *Doing Business* study, but no data is included for Somalia in *Paying Taxes 2017* as there is a lack of practical experience with the tax system,

The use of a case study company with a standard fact pattern does of course bring limitations. For example, the size of the company (60 employees) may be considered large in some countries, but modest in others, and the fact that the company does not engage in any international trade makes it unusual compared to many multi-nationals. However, it does enable the collection and comparison of data from a large number of countries on a like-for-like basis, and the potential identification of some best practices in terms of the design and administration of tax systems.

What are the compliance activities that are measured?

In the *Paying Taxes* study, expert local contributors in each country are asked to estimate the time that will be needed by the case study company to prepare, file and pay its VAT return, based on a defined list of compliance activities, as set out in Figure A.2.

The post-filing indicator measures the time required to prepare and file a VAT refund claim, and, if the claim is likely to trigger an audit, the time spent gathering further information for the auditors. It also measures the time the company has to wait to receive the VAT refund or, if longer, the time taken for any audit to be concluded. This is also set out in Figure A.2.

Inevitably, as the time required for any of these processes is an estimate, there is a degree of judgement involved. However, the World Bank Group spends considerable effort checking and confirming that the methods used are consistent, and the time estimates are the average of the views of several contributors in each economy.

***Figure A.2:** VAT compliance activities measured in Paying Taxes*

Time to comply

Preparation activities

- Data gathering from internal sources
- Additional analysis of accounting information
- Calculation of tax liability including data inputting
- Preparation and maintenance of mandatory tax records if required
- Complying with changes in tax rates and rules (if relevant in the year)

Filing activities

- Completion of tax return forms, including any additional documentation required
- Submission of forms to tax authority, which may include time for electronic filing, waiting in line at the tax authority office and travel time, etc.

Payment activities

- Calculations of tax payments required including extraction of data from accounting records, and maintenance of accounting systems
- Analysis of forecast data and associated calculations if advance payments (payments on account) are required
- Making tax payments, whether online or at the tax authority office, which may include time for waiting in line and travel

Post-filing indicator

Time to comply with a VAT refund (hours)

- Time spent gathering information for, preparing and submitting the VAT refund claim
- If the claim triggers an audit, the time spent gathering, preparing and submitting the information required by the auditors

Time to receive a VAT refund (weeks)

- Time between submission of the claim and receiving the refund
- Or, if longer, the time between submitting the claim and the conclusion of any audit
- Any mandatory carry forward period
- Time delay before being able to submit a claim (depends on frequency of filing)

Source: *Paying Taxes 2017*

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