

Distr.: General
26 September 2023

Original: English

**Committee of Experts on International
Cooperation in Tax Matters
Twenty-seventh session**

17-20 October 2023

Item 3(n) of the provisional agenda

Indirect Taxes

Co-Coordinator's Report

Summary

This note provides *a short progress report* on the work undertaken by the Subcommittee on Indirect Taxes and *seeks comments and guidance* from the Committee on the draft papers that are presented for ***first discussion*** on the following workstreams: (a) Overview of VAT/GST in developing countries; (b) VAT/GST treatment of small enterprises; (c) VAT refunds; and (d) the use of new technologies to improve VAT/GST compliance (IT systems, E-invoices/big data).

Co- Coordinators' Report on Subcommittee on Indirect Tax Issues

Background information

1. At its Twenty-third Session, the Committee of Experts on International Cooperation in Tax Matters considered a Secretariat note ([E/C.18/2021/CRP.34](#)) on a proposed new workstream on Indirect Taxes. The note indicated that indirect taxes represent an important tax base for countries since it directly supports a number of the Sustainable Development Goals. The Committee decided at that Session to establish a Subcommittee on Indirect taxes with a mandate to identify priority issues where guidance from the Committee may most usefully assist, in particular, developing countries in differing situations, on taxation issues related to indirect taxation, with an initial focus on value added tax/goods and services tax (VAT/GST) issues.
2. At the Twenty-fourth Session, the Committee considered and approved a note ([E/C.18/2022/CRP.7](#)) that identified priority areas where guidance may be most useful to developing countries.
3. At its Twenty-fifth Session, the Committee approved the workplan suggested by the Subcommittee ([E/C.18/2022/CRP.22](#)) with the aim to develop a series of good practices in the design, compliance and administration issues that developing countries may face related to VAT/GST and that consisted of seven workstreams, namely: (a) overview of VAT/GST in developing countries; (b) VAT/GST treatment of Small enterprises; (c) VAT/GST refunds; (d) interaction between VAT/GST and other taxes; (e) VAT/GST and specific sectors (Tourism and Construction); and (f) VAT/GST and government entities, charities and donor-funded projects. Also, the Committee provided inputs regarding the contents of the outlines of the first three workstreams.
4. At its Twenty-sixth Session, the Committee provided observations on the Subcommittee's work in general, as well as comments and guidance on the outline of the paper on the use of new technologies to improve VAT/GST compliance (IT systems, E-invoices/big data).

Progress made by the Subcommittee on its work program

5. The Subcommittee has held two virtual meetings, on 30 May-1 June 2023 and on 30 August-1 September 2023.
6. In the first meeting, the Subcommittee discussed inputs and recommendations made during the Twenty-sixth session. It considered that the work on issues on VAT/GST and inflation as well as VAT/GST and imports will be conducted, where necessary, and incorporated in the VAT/GST overview workstream. Whereas it is proposed that the work on e-commerce will not be developed for the moment by the Subcommittee to avoid duplication of the ongoing work led by the OECD in close partnership with the World Bank and regional organizations and developing banks. The work has already been translated into a series of detailed guidance on the VAT/GST treatment of digital trade (i.e. VAT Digital Toolkits) for Africa, Asia and the Pacific and Latin America and the Caribbean. Also, at that May/June meeting the Subcommittee examined the draft papers prepared by the working groups on the

following workstreams: (a) Overview of VAT/GST in developing countries; (b) VAT/GST treatment of small enterprises; (c) VAT refunds; and (d) the use of new technologies to improve VAT/GST compliance (IT systems, E-invoices/big data).

7. In the second meeting, the Subcommittee discussed advanced drafts of the first four workstreams, incorporating feedback received and decided to submit them to the Committee for first consideration. The main thrust of the papers is as follows:

- a. The Overview of VAT/GST in Developing Countries draft paper, which is attached to this note as Annex A, provides an overview of the VAT, which forms the foundation of the remaining papers in this series. It provides insights into the workings of the VAT and other consumption taxes, the basic design elements of the VAT, whether the VAT is regressive, and highlights compliance and administration issues associated with implementation of the tax.
- b. The VAT/GST treatment of small enterprises draft paper, which is attached to this note as Annex B, discusses options for exempting small enterprises to keep them out of the VAT system by implementing a registration threshold. It also, addresses issues related to the setting of thresholds, voluntary registration, sector-specific thresholds, gradual tax relief through multiple thresholds, and evasion relating to thresholds. Moreover, the paper analyzes policy options that may improve compliance, reduce compliance costs, or simplify the standard VAT regime for small enterprises that are registered.
- c. The VAT refunds draft paper, which is attached to this note as Annex C, considers refunds from the perspective of both tax administrations and taxpayers, provides an overview of the reasons for the existence of refunds, and discusses the various factors that should be taken into account in the administration of VAT refunds.
- d. The draft paper on the use of new technologies to improve VAT/GST compliance (IT systems, E-invoices/big data), which is attached to this note as Annex D, gives an overview of the options available to enhance the tracking of VAT data, improve tax services and tax fulfilment favouring voluntary compliance, and exploit tax data analysis to enforce compliance in an environment of high-quality data governance. It aims to present different options and encourage deeper analysis by individual countries to design and adapt new technologies to improve VAT compliance, according to their particular needs, restrictions, and possibilities.

8. The objective of those draft papers is to produce practical series in VAT/GST, which represent an important tax base for countries, to contribute to strengthening domestic resource mobilization for developing countries and meeting the Sustainable Development Goals.

Issues for the Committee

9. The Committee is invited to provide comments and guidance on the attached draft papers that are presented for first discussion:

(a) Overview of VAT/GST in developing countries;

(b) VAT/GST treatment of small enterprises;

(c) VAT refunds; and

(d) the use of new technologies to improve VAT/GST compliance (IT systems, E-invoices/big data).

Next steps

The Subcommittee will take into account the comments and guidance received, with an aim to final approval at the Twenty-eighth Session where possible, or otherwise at the Twenty-ninth Session. The Subcommittee proposes focus on these aspects of the workplan in the lead-up to the Twenty-eighth Session, all having equal priority.

ANNEX A to E/C.18/2023/CRP.29

Overview of VAT/GST in Developing Countries

Draft in Progress

Table of Contents

1	Introduction.....	2
2	Understanding the VAT and other consumption taxes	3
2.1	Introduction	3
2.2	The workings of a VAT	3
2.2.1	Standard-rated VAT and RST.....	3
2.2.2	Exempt supplies under the VAT.....	5
2.2.3	Zero-rated supplies under the VAT	8
2.2.4	VAT rate changes	11
2.3	VAT or RST?	11
3	Basic design elements of a VAT.....	13
3.1	Introduction	13
3.2	Tax incidence	13
3.3	VAT: An invoice-based tax.....	14
3.4	Defining the tax base.....	14
3.4.1	VAT: A broad-based tax.....	14
3.4.2	Destination vs origin-based tax.....	15
3.5	Selecting the VAT rate.....	15
3.6	Identifying the taxpayer	16
3.6.1	The registration threshold	16
3.6.2	Government entities	17
3.6.3	Charities	17
3.6.4	Donor-funded projects	17
3.7	International trade	18
4	Is the VAT regressive?.....	18
4.1	The Literature on VAT and Consumption Taxes in Developing Countries	19
4.2	The Effect of a Large Informal Sector on VAT Incidence	19
4.3	Policy Considerations.....	20
4.4	Conclusion.....	21
5	Compliance and administration of VAT.....	21
5.1	Registration:	21
5.2	Invoicing:	23
5.3	Reporting and payment:	23
5.4	Refunds:	24
5.5	Compliance Monitoring and Enforcement:.....	25
5.6	Dispute Resolution:	26
5.7	Small and Medium Enterprises:	26
5.8	Specific Sectors:	26
5.9	Transfer Pricing:.....	27
5.10	New Technologies:.....	27
6	Conclusion	27
7	Works Cited	28

Cover pages

In this section, we provide information on the mandate of the subcommittee and definitions of terms to be used in this report.

1 Introduction

(to be further developed)

Developing countries have multiple tax instruments, each with their preferred purpose. The income tax is the preferred instrument to increase progressivity in the tax system. The excise tax is preferred to include costs not reflected in price into market prices. Customs and import duties are preferred to protect infant industries and encourage import substitution. Simplified taxes, such as the turnover tax, are preferred to collect revenues from small businesses that cannot keep accounting records. The value-added tax (VAT), otherwise referred to as the Goods and Services Tax (GST), is the preferred instrument to raise tax revenues.

The revenue-raising purpose and capabilities of the VAT make it one of the most important tax instruments for developing countries. Since income taxes, which are the other major revenue instrument, may be difficult to administer, are prone to avoidance practices, and often used to provide tax incentives, the VAT is the major revenue instrument in many developing countries. In Africa, for instance, the largest share of tax revenues is derived from the VAT.

The revenue-raising capabilities of the VAT may also partly explain the exceptional rate at which the tax has been adopted. Over 160 countries have already implemented a VAT. About 90 percent of countries with full UN membership apply a VAT. And over the past 20 years, the VAT has been adopted by over 50 countries.

Because of the important role of the VAT in developing countries, understanding the tax, and designing and administering the tax to be revenue productive and provide favorable economic outcomes for developing countries is essential. To assist towards these aims, a series of papers that address key issues for developing countries follows. Besides this paper, the series will focus on:

- The VAT of small enterprises
- VAT refunds
- The use of new technologies to improve VAT compliance
-
-

Certain issues are not discussed in detail in this series of papers. One prominent issue for developing countries not discussed is the application of VAT on cross-border supplies, also referred to as inter-jurisdictional issues. Interested readers on this topic are referred to the Organisation for Economic Co-operation and Development's (OECD) publications, especially the *International VAT/GST Guidelines* and *Addressing the Tax Challenges of the Digital Economy: Action 1 - 2015 Final Report*.¹

¹ These publications are complemented with detailed technical guidance to support their coherent implementation and application. These include a report on *Mechanisms for the Effective Collection of VAT/GST where the Supplier is not Located in the Jurisdiction of Taxation*, a report on *The role of digital platforms in the collection of VAT/GST on online sales*, a report on *The Impact of the Growth of the Sharing and Gig Economy on VAT/GST Policy and*

This paper provides an overview of the VAT, which forms the foundation of the remaining papers in this series. It provides insights into the workings of the VAT and other consumption taxes, the basic design elements of the VAT, whether the VAT is regressive, and compliance and administration issues.

2 Understanding the VAT and other consumption taxes

2.1 Introduction

A general understanding of the VAT and other broad-based consumption taxes, specifically the retail sales tax (RST), is required to appreciate the implications of policy design. Towards such an understanding, this section provides illustrative examples of the workings of the VAT under alternative policy options and compares this to an RST. It discusses the implications of exempt supplies, zero-rated supplies, and rate changes and whether the VAT can be preferred to an RST in a developing country context.

2.2 The workings of a VAT

2.2.1 Standard-rated VAT and RST

The basic working of the VAT is illustrated below by the supply of a single good through the production-distribution chain. Consider the example where a producer has costs of zero and sells a good for 4,000 (all amounts are VAT exclusive). A manufacturer purchases it (cost of 4,000) and sells it for 10,000 to a retailer. The retailer sells the good to a final consumer for 20,000.

Production-distribution chain	Purchases (excl. VAT)	Sales (excl. VAT)
Producer	0	4 000
Manufacturer	4 000	10 000
Retailer	10 000	20 000
Consumer	20 000	-

Administration and a set of toolkits aimed at supporting their actual implementation in different regions of the world i.e. Digital VAT Toolkits for Latin America and the Caribbean, for Asia-Pacific and for Africa.

If we assume a standard rate of VAT of 10 percent and that all supplies are subjected to VAT, the VAT consequences will be:

Production-distribution chain	Input VAT	Output VAT	VAT declared
Producer	(0)	400	400
Manufacturer	(400)	1000	600
Retailer	(1000)	2000	1000
Consumer	2000	-	-

Based on these VAT consequences, the VAT inclusive sales prices will be:

Production-distribution chain	Purchases (incl. VAT)	Sales (incl. VAT)
Producer	0	4 400
Manufacturer	4 400	11 000
Retailer	11 000	22 000
Consumer	22 000	-

There are a few important observations from this example. First, the VAT paid by the manufacturer to the producer is again deducted by the manufacturer. The net VAT paid by the manufacturer on its purchases is therefore zero. Even though the producer declares and pays VAT to the authorities, it received this VAT from the manufacturer and its VAT burden is also zero. The same holds throughout the production-distribution chain, besides for the consumer. The consumer pays VAT of 2000 to the retailer, but cannot deduct this VAT since they will not use the good to make supplies charged with VAT. The burden of the VAT is therefore only on the consumer.

Second, although the VAT only burdens the consumer, it is collected at each stage of the production-distribution chain. The VAT is collected from the producer, manufacturer and retailer in proportion to the value-added by each of these suppliers. If the retailer was not VAT registered, VAT would still have been collected on the supply of the good on the value-added up to the point of retail.

Third, the amount of VAT collected throughout the production-distribution chain, being 2,000, is the same as the amount paid by the consumer to the retailer. The consumer will face a tax inclusive price of 22,000, of which 2,000 is VAT. This is the same amount of VAT that is

collected throughout the production-distribution chain. The VAT is a tax on consumers, collected throughout the production-distribution chain.

This basic working of the VAT can be contrasted with an RST. The RST does not rely on input tax deductions by producers, but exemption certificates. Assuming the same tax rate as under the VAT, the RST consequences will be:

Production-distribution chain	Input tax	RST	RST declared
Producer	Exempt	Exempt	-
Manufacturer	Exempt	Exempt	-
Retailer	Exempt	2000	2000
Consumer	2000	-	-

The same amount of tax (2,000) is collected under the RST and the VAT. The consumer faces the same tax burden under both taxes. The tax burden on persons that are not final consumers is zero for both the RST and the VAT. Where the tax is collected is, however, different. The RST is fully collected at the retail stage, while the VAT is collected throughout the production-distribution chain. The consequences of these different collection mechanisms are further discussed in Section 2.3.

2.2.2 Exempt supplies under the VAT

The example in the previous section can be further developed to illustrate the consequences of exempt supplies under the VAT, which means that VAT is not charged on a supply and no input VAT deduction is allowed. These consequences will differ depending on whether an intermediate good or service or a final good or service is exempt. Consider the consequences if the supply by the manufacturer to the retailer is exempt from VAT, but the supply of the retailer is subjected to VAT. Under this example, the VAT consequences will be:

Production-distribution chain	Input VAT	Output VAT	VAT declared
Producer	(0)	400	400
Manufacturer	400	Exempt	0
Retailer	Exempt	$2000 + \leq 40$	$2000 + \leq 40$
Consumer	$2000 + \leq 40$	-	-

With the exemption on an intermediate good (or service), the total VAT collected throughout the production-distribution chain increased, which means revenues collected increases. This is because the manufacturer cannot deduct input VAT for the VAT paid to the producer, since the manufacturer's supplies are exempt from VAT. In effect, the VAT burden on the manufacturer is 400 and the burden on the consumer is greater than the burden when there was no exemption. To understand why this burden is greater, the effect of the exemption on sales prices should be considered. Consider VAT inclusive sales prices with the exemption:

Production-distribution chain	Purchases (incl. VAT)	Sales (incl. VAT)
Producer	0	4 400
Manufacturer	4 400	10 000 - 10400
Retailer	10 000 - 10 400	22 000 - 22400
Consumer	22 000 - 22400	-

The VAT inclusive sales price is the same for the supply from the producer to the manufacturer, but, subsequently, increases by the amount of non-deductible input VAT that the manufacturer can shift forward in the production-distribution chain. The manufacturer will attempt to shift the entire 400 non-deductible input VAT unto the retailer, but may be unable to do so. If unable to do so, a portion of the non-deductible input VAT will be shifted onto the factors or production or reduce the profit margin of the manufacturer. The final sales price is greater than if all supplies were subjected to the VAT at 10 percent, raising the tax burden on the consumer.

From this example, several negative consequences of exemptions on intermediate goods and services become apparent. The first is that the exemption results in a tax on production. To avoid this tax, the retailer may purchase from a different manufacturer, use a different input, or the retailer may integrate with the manufacturer to not have a supply between these two persons, called vertical integration. In short, the retailer may not purchase from its preferred supplier and economic efficiency is therefore reduced. The consumers' decisions are also distorted since the price has increased. The exemption, therefore, has a negative effect on the economy.

The second is that the exemption may require input VAT apportionments by the manufacturer. If the manufacturer makes other taxable supplies, they will only be able to deduct input VAT to the extent that they make taxable supplies. Making such input VAT apportionments gives rise to administrative and compliance costs and presents an opportunity for the manufacturer to evade the tax by falsely increasing their input VAT apportionment ratio.

The third is that the VAT becomes more complex to comply with and administer. Since certain supplies are subjected to the standard rate and others are exempt, registered persons need to apply the correct VAT treatment to goods and services. Many countries do not sufficiently define exempt goods and services to avoid legal uncertainty. Disputes between taxpayers and

authorities on whether a supply is exempt are common and often difficult to resolve. Taken together, a more complex VAT involves greater operational costs and raises uncertainty in the market.

The fourth is that the final price of the good rises. Since the VAT is regressive when measured against income, raising the final price of goods increases the regressivity of the tax system. Further, if the good is exported, the exported good will be less competitive in the international market. The destination principle, which stipulates that VAT should be collected in the country of final consumption, will be violated since some tax is collected in the country of production.

In short, the exemption may make the VAT more regressive and reduce the international competitiveness of a country, which can add to foreign exchange shortages that is a challenge in many developing countries.

The VAT consequences are different if the exemption only applies at the retail stage of the production-distribution chain. If the good in the example is subjected the VAT at all previous stages of the chain, but exempt when supplied by the retailer, the consequences will be:

Production-distribution chain	Input VAT	Output VAT	VAT declared
Producer	(0)	400	400
Manufacturer	(400)	1000	600
Retailer	1000	Exempt	-
Consumer	Exempt	-	-

Based on these consequences, the VAT inclusive sales prices will be:

Production-distribution chain	Purchases (incl. VAT)	Sales (incl. VAT)
Producer	0	4 400
Manufacturer	4 400	11 000
Retailer	11 000	20 000 – 21 000
Consumer	20 000 – 21 000	-

Unlike the exemption on intermediate goods or services, the total VAT collected throughout the production-distribution chain has decreased, which means revenues collected decreases. The retailer will not be able to deduct input VAT of 1,000 and will attempt to shift this non-deducted VAT unto the consumer. The consumer will not pay any VAT directly, but will be

burdened with the VAT to the extent that the retailer can shift the VAT. The final price of the good paid by the consumer has decreased compared to the previous examples.

The consequences of this exemption are different to the previous example. The VAT remains a tax on production, but since the retailer can supply at a lower price compared to the previous examples, they will not be motivated to change their behavior. The exemption is therefore less distortive for producers. Consumer choices remain distorted since the price has decreased.

The retailer will be required to make input VAT apportionments and, like the previous example, this presents an opportunity for evasion and raises administrative and compliance costs. The same issues to apply the correct tax treatment to goods and services are present under this exemption.

The price of the final good will, however, decrease. This implies that the VAT when measured against income is likely to become less regressive, especially if the exemption is on a good or service predominantly consumed by the poor. The likelihood that the destination principle is violated also decreases since the exemption is further down the production-distribution chain.² Only if the retailer exports the good will VAT have been collected in the country of export. If the manufacturer exports the good, the zero-rate, discussed in the next subsection, will take preference over the exemption and no VAT will be collected in the country of export.

In summary, exemptions give rise to several negative consequences. These consequences are more severe where intermediate goods and services are exempt. If exemptions are required for distributional reasons and warrant a reduction in revenues, these should preferably be limited to final consumer goods that are disproportionately consumed by poor individuals.

2.2.3 Zero-rated supplies under the VAT

The consequences of a zero-rated supply, which means VAT is charged at nil percent and input VAT deductions are allowed, will also depend on whether the zero-rate applies to intermediate or final goods and services. Assume that the supply from the manufacturer to the retailer is zero-rated, but all supplies by the retailer are charged with VAT. The VAT consequences are:

Production-distribution chain	Input VAT	Output VAT	VAT declared
Producer	(0)	400	400
Manufacturer	(400)	0	(400)
Retailer	0	2000	2000
Consumer	2000	-	-

² If the exemption applied earlier in the production-distribution chain and applied to all further stages including the retail stage, the destination principle will more likely be violated.

The total amount of VAT collected remains unchanged compared to the first example where all supplies are subjected to VAT, being 2,000. Total VAT collected is the same as for the first example. The VAT paid by the consumer is the same and the burden of the VAT only falls on the consumer. However, unlike the first example, the manufacturer's output VAT exceeds their input VAT.

The fact that the manufacturer's output VAT exceeds their input VAT is the major drawback from zero-rate on intermediate goods or services. If the manufacturer has insufficient output VAT to offset the input VAT against, they will require a VAT refund from the revenue administration. If VAT refunds are not promptly paid, the manufacturer will change their behavior and may attempt to avoid the refund by vertically integrating with the producer. Or worse, the manufacturer may not purchase the input, which decreases investment in the economy.

The likelihood of a VAT refund will persist if final goods or services are zero-rated. Assume the retailer makes a zero-rated supply to the consumer. The VAT consequences will be:

Production-distribution chain	Input VAT	Output VAT	VAT declared
Producer	(0)	400	400
Manufacturer	(400)	1000	600
Retailer	(1000)	0	(1000)
Consumer	0	-	-

Unlike the previous example, the total VAT collected throughout the production-distribution chain is reduced to zero, which means tax revenues collected decreases. The revenue service may be required to refund the VAT collected from the producer and manufacturer to the retailer. The value of the refund has increased from 400 in the previous example to 1,000. The burden on the consumer has decreased from 2,000 to 0.

Comparing the results from a zero-rate and exemption on final goods and services shows that a zero-rate provides greater relief to consumers than an exemption, at a greater cost of revenues. It is therefore a more aggressive instrument to reduce the regressivity of the VAT. However, this benefit of the zero-rate is not without costs. The major cost is that it increases the likelihood of an increase in the number and value of VAT refund claims. If VAT refunds are not promptly paid, the input VAT represented by the refund becomes a tax on investment equal to the time value of money. Further, it distorts consumer decisions, and this may distort production decisions. In short, domestic zero-rated supplies should generally be avoided where administrations struggle to pay VAT refunds promptly.

VAT refunds may also arise where a supply is exported. Where a good or service is exported, the destination principle will apply, and the export will be zero-rated. Assume that the manufacturer exported the good. The domestic VAT consequences will be:

Production-distribution chain	Input VAT	Output VAT	VAT declared
Producer	(0)	400	400
Manufacturer	(400)	0	(400)

Since there is no final consumption in the domestic economy, it will be incorrect to say that VAT revenues decrease because of the export. However, a VAT refund may be claimed by the exporter of goods or services. Unlike the previous example, a country cannot reduce the likelihood of this refund by subjecting the export to the standard rate. If VAT refunds to exporters are not paid promptly, these suppliers may be less inclined to export, increasing the trade deficit and likelihood of foreign exchange shortages. This underlines the importance of the VAT refund practices of developing countries, a topic that will receive in-depth attention in another paper in this series.

For the importing country, assuming the same VAT rate, the VAT consequences will be:

Production-distribution chain	Input VAT	Import VAT or Output VAT	VAT collected or declared
Customs		1000	1000
Importer (Retailer)	(1000)	2000	1000
Consumer	2000	-	-

Note that if the country of import applied a different VAT rate to the country of export, the VAT consequences will reflect the rate of the country of import. For instance, if the VAT rate of the importing country was 20 percent, the import VAT would be 2,000, the output VAT charged to the consumer will be 4,000 and the total VAT collected will also be 4,000.

Besides inter-jurisdictional issues, the importation of supplies gives rise to other administrative challenges. One challenge is that the importer may not have output VAT to offset the input on the import VAT against, ending in a refund position. This is often observed in sectors with large capital inputs and delays in making taxable supplies, such as the extractive industries. Another challenge is that, since there is a break in the audit chain when goods are exported, the value of the imported goods may be underdeclared to evade the tax. Although this is of lesser concern for goods that are intermediate and whereon input VAT would be deducted, this type of tax evasion is common for small consumer goods where the importer is not registered for VAT or a final consumer. Limiting this type of evasion is further discussed in another paper in this series.

2.2.4 VAT rate changes

The effect of VAT rate changes on most macro-economic indicators will depend on many country-specific factors and is beyond the discussion of this paper. However, the effect of VAT rate changes on inflation is a general concern surrounding the VAT and is briefly discussed in this section.

If VAT rates are increased or decreased, the effect on consumer prices will depend on the pass-through of the VAT by producers unto consumers. Although VAT pass-through will depend on country and sector-specific variables, the general finding is that VAT increases are predominantly passed unto consumers, while VAT decreases are passed unto consumers to a lesser extent.³ In terms of inflation, this means that VAT rate increases are generally inflationary and reducing VAT rates may not be effective to reduce inflation.

However, the macro-economic concern regarding VAT rate increases is less whether it increases consumer prices in one period, but whether it has a persistent effect on inflation.⁴ Here, the general finding is that the effect of VAT rate increases on inflation is a short-term observation.⁵ Increases in VAT rates should, therefore, not pose a major risk to price stability in most contexts.

2.3 VAT or RST?

The VAT and the RST differ in their collection mechanisms; the invoice-credit method versus exemption/suspension certificates.⁶ The purpose of both mechanisms is to suspend the tax in production. Under the VAT, producers deduct the VAT paid on their costs, called input VAT or input credit against the VAT they charge on their supplies, called output VAT. As shown in the next subsection, the net VAT paid on their costs is therefore zero.⁷ The same result is possible by showing exemption certificates; pay nothing, deduct nothing. This is the mechanism of the RST. In theory, both mechanisms only tax consumption. Yet, these mechanisms result in dissimilarities in the feasible base, compliance, and administration of these two taxes.

Considering the base, the mechanism of the VAT has one primary benefit. Under the VAT, the tax can always be charged by suppliers and, hereafter, purchasers account for whether, or to what extent, they will use a good or service in production. Under the RST, whether tax is charged is decided at the point of sale with the purchaser showing an exemption certificate or not. Since RST is fully charged or not charged at all, exemption certificates, in contrast with

³ See, for instance, Shiraishi, K. (2022). Determinants of VAT pass-through under imperfect competition: Evidence from Japan. *Japan and the World Economy*, 61, 101120; Benedek, D., De Mooij, R. A., Keen, M., & Wingender, P. (2020). Varieties of VAT pass through. *International Tax and Public Finance*, 27, 890-930; Fuest, C., Neumeier, F., & Stöhlker, D. (2020). The pass-through of temporary VAT rate cuts: Evidence from German retail prices (No. 341). ifo Working Paper; Benkovskis, K., & Fadejeva, L. (2014). The effect of VAT rate on inflation in Latvia: evidence from CPI microdata. *Applied Economics*, 46(21), 2520-2533;

⁴ There are different ways that the effect may be persistent, depending on the theory of inflation relied on.

⁵ See, for instance, Gautier, E., & Lalliard, A. (2013). How do VAT changes affect inflation in France?. *Quarterly selection of articles-Bulletin de la Banque de France*, (32), 5-27; Carare, A., & Danninger, S. (2008). Inflation smoothing and the modest effect of VAT in Germany; Tait, A. A. (1991). I. VAT Policy Issues: Structure, Regressivity, Inflation, and Exports. In *Value-Added Tax*. International Monetary Fund.

⁶ The VAT can also be applied using the subtraction method, but the invoice-credit method is the common approach.

⁷ If the producer does not only make taxable supplies, they will only deduct a portion of input VAT.

the invoice-credit method of the VAT, do not allow the consumption part of dual-use goods and services (part production, part consumption) to be taxed.

Some goods and many services are dual-use in nature and cannot feasibly be included in the base of the RST. In contrast, the base of the VAT can feasibly include all value-added in the formal economy, besides the value-added by small businesses that opt not to register, financial intermediation services and residential accommodation services to the extent that there is real growth in the residence's value. These are input taxed under the VAT, meaning some tax is still collected. The feasible base of the VAT is, therefore, broader than the RST.

The VAT base may also be broader since, unlike the RST, the VAT provides incentives to register for the VAT. Since the VAT provides for input VAT deductions, firms may want to be registered to deduct input VAT and, consequently, charge VAT on their supplies. The RST provides no incentive to register since it is, in theory, only charged on supplies to consumers. This important feature of the VAT is especially relevant for developing countries that may struggle with extensive informality. Once registered for VAT, other taxes can be charged and businesses will enter the formal economy.

The VAT and RST give rise to different compliance costs. The number of firms required to be registered under the two taxes differs. Retailers and non-retail producers whose supplies exceed the compulsory registration threshold must register and account for VAT, but only retailers must register under the RST. This means the average firm size may be greater under the VAT, which may make compliance costs less regressive, but more firms are also likely to be registered under the VAT than RST, which raises administrative costs.

Besides the number of registrants, both the VAT and RST present their own administration challenges. Two unique challenges under the VAT are only registering bona fide firms and paying legitimate refunds due. Only registering bona fide firms is important because the deductibility of input VAT opens the door for fraud. VAT refunds are the primary drawback of the VAT's collection mechanism. The RST avoids most administrative challenges by exempting dual-use goods and services. Including these would present administrative challenges that cannot feasibly be overcome. However, one administration challenge that cannot be avoided under the RST is preventing fraud from the use of falsified exemption certificates or the use of legitimate exemption certificates on the purchase of consumer goods and services.

An administrative advantage of the VAT over the RST is that, generally, VAT will still be collected if there is evasion in the supply chain. Under the RST, if tax is not charged on a sale, no tax is collected on the value of that sale. Under the VAT, if tax is not charged on a supply, input VAT cannot be deducted, and it is only tax on the value-added of the supply that is not collected. The VAT is therefore more difficult to evade in its entirety than the RST, which is important for countries with limited administrative capacity.

In summary, the VAT has greater revenue potential as compared to an RST. It allows for a broader base, includes incentives for firms to register and formalize, and fewer revenues are foregone because of evasion. It can exempt small firms from the tax and avoid regressive compliance costs. These features result in it being regarded as the instrument of choice for developing countries. However, under the VAT, special attention needs to be given to administering VAT refunds, setting the threshold at an appropriate level, and only registering

legitimate businesses. These issues, amongst others, are discussed in greater detail in the series of papers to follow.

3 Basic design elements of a VAT

3.1 Introduction

Most VAT systems are based on the principle of consumption (Bird & Gendron, 2007). Consequently, the person who consumes the goods and services is the person who ultimately carries the burden of paying the tax due on them (OECD, International VAT/GST Guidelines, 2017). To achieve neutrality, in international trade, the destination principle⁸ is the most widely used approach, under which VAT revenue accrues in the jurisdiction of final consumption. (OECD, VAT Digital Toolkit for Africa, 2023). In the main, two types of VAT exist. These are classified as the modern VAT systems that are largely based on the New Zealand GST system (see also Singapore and the Southern African Customs Union Countries) and traditional VAT systems that are largely based on the European Union’s common VAT Directive (2006) based on the anglophone, francophone or lusophone version (Cnossen S. , 2019). Except for the United States of America, all the OECD countries follow a VAT system (OECD, Consumption Tax Trends: VAT/GST and Excise Rates, Trends and Policy Issues, 2022). More than 160 jurisdictions the world over apply a version of a VAT system (de Mooij & Swistak, 2022). As the Nigerian and Chinese VAT systems distinguish between capital and revenue inputs, some experts are of the view that it is not a VAT system in the strict sense (Cnossen S. , 2019). In this section, we discuss the decisions involved in a) defining the tax base, b) selecting VAT rates, c) identifying the taxpayer, including an introductory discussion on the registration threshold and government entities, charities and donor-funded projects, and d) inter-jurisdictional issues, including an introductory discussion on place of taxation and the destination principle.

3.2 Tax incidence

Under a VAT system, output VAT is charged on the value added at each stage in the production-distribution chain (Schenk & Oldman, 2007). To ensure that only the final consumption is taxed, the tax paid on all goods and services acquired to render the supply for final consumption, should be refunded in the hands of such purchasers as inputs (OECD, International VAT/GST Guidelines, 2017). In other words, the tax rolls forward from each intermediary transaction until the final point of consumption. This ensures tax neutrality. To ensure that tax credits relate to production and not the consumption of goods and services, certain restrictions must be imposed on input credits (James, 2011). For example, in South Africa, input credits are fully or partly denied on motor vehicles and entertainment. Motor vehicles and entertainment, despite their application in the production stages, are mainly used as consumption goods and not necessarily in the production of income or in the making of taxable supplies.

If VAT is not appropriately levied and recovered at each level of the production chain, it will no longer be a consumption tax (Ebrill, Keen, Bodin, & Summers, 2001). Breaks in the tax chain can lead to the failure to collect VAT by revenue authorities. Breaks in the tax chain can

⁸ The destination principle is sanctioned by World Trade Organisation (“WTO”) rules. See Footnote 1 of the WTO’s Agreement on Subsidies and Countervailing Measures.

also lead to the failure to recover VAT paid by intermediaries,⁹ which would ultimately lead to double taxation.

3.3 VAT: An invoice-based tax

To avoid breaks in the tax chain, a VAT system is based on an invoice system (Cnossen S. , 1991). The invoice forms the basis for input and output taxes. The invoice-based system not only creates a good audit trail, but also allows for cross checking with the income tax system (Huxham & Haupt, 1991). For example, where an input tax deduction is sought based on an invoice for goods or services rendered by a supplier, the supplier's financial statements should reflect the amount received on the invoice as part of its gross income. Under an invoice system, the amount of tax paid for goods or services can be determined with precision. In addition, each trader charges VAT on the sale of goods or services to the purchaser and delivers an invoice to the purchaser reflecting the VAT paid. The purchaser is, in turn, able to credit the VAT as an input against the output VAT charged on its own sales. The balance is paid to revenue authorities, while any excess credits are refunded. Each country has its own requirements of what constitutes a VAT invoice. As a minimum, a VAT invoice contains the name and address of the VAT vendor/supplier; a description of the goods and services to be supplied; the value of the goods and services, the VAT applicable to the supply of goods and services, and a date. In respect of international trade in digital goods, the OECD recommends doing away with invoicing (OECD, VAT Digital Toolkit for Africa, 2023). However, where that is not feasible, the OECD recommends electronic simplified invoicing (OECD, VAT Digital Toolkit for Africa, 2023).

3.4 Defining the tax base

3.4.1 VAT: A broad-based tax

Ideally, VAT should be applied on a broad range of both goods and services. Taxing one commodity and excluding another distorts consumer choice and negatively affects revenue potential. Some concessions based on policy can be made, for example, to redistribute wealth, or to protect domestic produce from cheaper imports (Cnossen S. , 1991). VAT is regressive. To mitigate the regressivity of VAT, countries may zero-rate or exempt a limited number of basic foodstuffs. Further concessions may be necessary in sectors which are hard to tax administratively, for example financial services. In South Africa, only a limited number of financial services are exempt while in Angola, the financial service sector is fully exempt from VAT. The long lists of exemptions and zero-rating in VAT legislation in developing countries is a critical issue from a revenue and administrative perspective. Exemptions and zero-rating create opportunities for VAT fraud. Moreover, once exemptions and zero-ratings exist, they are very hard to remove. Exemptions further cause breaks in the input VAT chain. When the products re-enter the production chain as an input for taxable commodities, it has a cascading effect. Also, an exemption from VAT does not mean a total exemption from tax. This is because taxes on inputs at early stages of production remains embedded. This leads to a loss of transparency. Other mitigating measures to address the regressivity of VAT, as discussed in Section 4, are more appropriate than exemptions and zero-rating. In an ideal VAT system, sectors which are hard to administer, like financial services, are partially exempt, and only

⁹ Also see part 3.7 in which VAT collection by intermediaries in respect of international digital trade is discussed.

exports are zero-rated. Exports are zero-rated to ensure neutrality and compliance with the destination principle.

3.4.2 *Destination vs origin-based tax*

VAT can be levied based on either destination or origin. In terms of the destination basis, VAT is levied at the level of consumption based on the location of the consumption. Put simply, VAT is levied at the domestic level. This means that imports are taxed while exports are zero-rated. Some economists are of the view that the destination-based VAT system discourages imports and encourages exports (Metcalf, 1995). This argument is based on the fact that domestic goods and services can enter the international market stripped of VAT, while imported goods are subject to import taxes (OECD, International VAT/GST Guidelines, 2017). This may be true in a transition when the VAT replaces a predecessor tax, such as a manufacturer's sales tax like in the case of Angola. On its own, however, the VAT does not exhibit those properties. Actually, if all countries apply the destination principle, the VAT should be close to neutral on trade.

In terms of the origin basis, VAT is levied at the consumption level based on the origin of the goods, irrespective of where the goods are finally consumed (Metcalf, 1995). This means that imports are not taxed while exports are taxed. This system could be seen to encourage imports as imported goods from low VAT jurisdictions, are placed at an advantage over domestic goods in jurisdictions with a high VAT rate (Cnossen S. , 1991).

Since VAT is primarily characterised as an indirect tax on consumption, the destination-based system can be classified as an out and out VAT system. The destination base ensures greater tax neutrality in cross-border transactions (OECD, International VAT/GST Guidelines, 2017). This can be attributed to the fact that imported goods are taxed on par with domestic goods and services. In the case of the origin base, imported goods are taxed in the country of origin. These goods often compete with domestic goods, especially where the foreign VAT rate is lower than the domestic rate. Tax neutrality is not achieved, and market distortions occur frequently.

3.5 **Selecting the VAT rate**

The widespread use of excise taxes means that VAT is not the only tax on consumption. As a result, and because of the multi-stage nature of VAT, it is, sometimes, practical to set multiple VAT rates. Taxes on some commodities may have a distortionary effect. For efficiency, some countries may adopt the inverse elasticity approach – that is – to levy a lower tax on commodities for which the demand is more elastic and higher taxes on inelastic commodities to minimise the impact of taxation on consumption patterns (Ebrill, Keen, Bodin, & Summers, 2001). In some cases, however, a higher tax on elastic commodities is necessary to achieve a specific environmental or health objective. For example, higher taxes on tobacco and incandescent light bulbs. Yet, for these externalities, excise taxes are more appropriate than VAT. In the presence of other instruments that assists to achieve equity, a single VAT rate is more appropriate. In some countries, lower VAT rates are applied to stimulate certain sectors. For example, the tourism sector in Myanmar is taxed at a reduced VAT rate. Differentiated VAT rates for different types of commodities create an additional administrative burden and compliance cost for both taxpayers and revenue authorities. For example, in India the first standard rate of 18% applies to telephone, banking, insurance, restaurants with alcohol license, tickets to cultural events and cinema, TVs, gaming consoles, while the second standard rate of

12% applies to non-air-conditioned restaurants, construction, intellectual property, some foodstuff, and mobile phones. A reduced rate of 5% applies to privately provided transport, advertising, sugar, tea and coffee, and medicine, while the zero-rate applies to basic foods, postal services, books and newspapers. In the case of India, costly field-audits are required to ensure that restaurants have both air-conditioned and non-air-conditioned sections, apply the appropriate VAT rate on food supplied to its patrons. It is also costly on the supplier to print different menus for the air-conditioned and non-air-conditioned sections of the restaurant.

Multiple VAT rates may also lead to a deliberate misclassification of commodities in an attempt to avoid taxes or to create VAT refunds. It must be noted, however, that exemptions may, in instances of a single VAT rate, result in different effective VAT rates (Ebrill, Keen, Bodin, & Summers, 2001). In considering the regressive nature of VAT, the burden distribution of other progressive taxes must be considered (Cnossen S. , 2019). Alternatively, setting higher VAT rates or excise duty on commodities that are largely consumed by the upper wealthy decile of the community may address the regressivity of VAT. Moreover, to address the regressivity concerns, it must be noted that the proceeds of VAT can finance expenditure that benefits the lower income deciles of the community – for example, education, health care and social grants.

In the main, the choice between zero-rating, differentiated lower than standard-rating, standard-rating, luxury tax rating, and exemptions are premised on administrative and compliance considerations rather than distribution issues (Cnossen S. , 2019). It cannot be emphasised enough that differentiated VAT rates create an additional administrative burden on revenue authority as well as the taxpayer. Moreover, the prevalence of VAT fraud is higher in VAT systems with multiple VAT rates. Section 4 deals with multiple VAT rates as a distribution consideration.

3.6 Identifying the taxpayer

In VAT, the tax burden is on the final consumer of commodities. However, as VAT is levied at every level of the supply chain, the administrative task of collecting VAT from the consumer and to remit it to the revenue authority lies with the supplier at every stage of the supply-chain. Yet, for administrative and cost efficiency, not every supplier is a VAT registered vendor/supplier that is required to account for VAT. To ensure that the cost of administering and monitoring registered VAT vendors/suppliers remain manageable, VAT registration thresholds exist.

3.6.1 The registration threshold

In the early years of VAT, experts advised that the VAT threshold must be set as low as possible. The VAT threshold is generally expressed in terms of annual turnover. The difficulty of administering VAT in fragmented economies and economies with large informal sectors dictate a much higher VAT threshold (Bird & Gendron, 2007). Even if some revenue is lost because of a higher VAT threshold, it is likely to be recouped if the administrative cost and effort is rid from processing numerous low-return taxpayers (Keen & Mintz, 2004). The compliance burden is shifted to medium and large taxpayers who account for most of VAT revenues anyway. Compliance cost for micro and small enterprises are relatively burdensome. Where the VAT threshold is very low to include micro and small enterprises in the VAT vendor pool, simplified VAT compliance regimes must be developed for these taxpayers (Kabwe &

van Zyl, 2021). Certain types of entities provide goods and services for the public good. As they are not in competition with the private sector, VAT is not charged on the goods and services they provide. These entities often supply both taxable and non-taxable supplies which makes it difficult to allocate input VAT correctly. These entities may be exempted from VAT registration. Some of these entities are government entities, charities, and donor-funded projects. The administrative burden and the cost of compliance must be measured when the tax exemption of entities is considered.

3.6.2 Government entities

Generally, government entities (except entities that provide service delivery such as water, electricity, telecommunication and entertainment to identifiable consumers) provide services for the public good. For example, the national defence force protects the public at large. The service it renders cannot be attributed to a specific recipient nor do they provide services in exchange for consideration. These entities acquire consumables (on which they incur VAT) to perform their functions. Yet, they do not recover the input VAT from the recipients of the service that they render. Where government entities are exempt from registering for VAT, the cost of unclaimed input VAT must be factored in the government budget. Importantly, government entities that render services to specific recipients - for example, electricity, water, education et cetera – must still register for VAT. This is because these entities can recover VAT from its customers the same way the private sector does.

3.6.3 Charities

Charities and non-profit public benefit organisations generally provide goods and services for no consideration. As such, the goods and services they provide do not attract VAT. It is sensible, thus, to exempt charities and non-profit public benefit organisations from VAT. However, as these entities often fulfil the socio-economic needs of society that the government is unable to fulfil, some tax benefits for these entities may be considered. For example, a charity may be allowed to register as a VAT vendor/supplier in order to recover the input VAT paid on the consumables it acquired in the making of charitable supplies. To avoid fraudulent registration, a charity must apply to the government (for example, the minister of finance) to be recognised as a charity. Moreover, only charities recognised by the government, and whose names are published by the relevant government department, may register as VAT vendors/suppliers.

3.6.4 Donor-funded projects

Similar to charities, some projects are conducted by entities that are funded by donations, the purpose of which is for the public good. Special arrangements can be made for these projects to register as VAT vendors/suppliers to allow them to claim input VAT on the commodities acquired in the making of supplies under the donor-funded project. Another concession is to exempt the donation received by the entity from VAT. Importantly, to avoid abuse, strict parameters must exist within which the donor-funded project must operate for it to qualify for the VAT concessions. For example, some criteria may include the following: the funding originates from a foreign non-vendor entity; the project must be administered and completed by a government recognised non-profit organisation; the project must be aimed to achieve one or more of the Sustainable Development Goals.

3.7 International trade

The overarching purpose of VAT is to levy a tax on final consumption in the taxing jurisdiction, and VAT laws must therefore have mechanisms for limiting their scope to domestic consumption and excluding foreign consumption. There are in theory two possible mechanisms for allocating taxing rights, the destination principle (which allocates taxing rights to the country of consumption) and the origin principle (which allocates taxing rights to the country of production). Perhaps because it seems intuitively correct to tax consumption where it takes place,¹⁰ but also because it has been sanctioned by World Trade Organisation (“WTO”),¹¹ the destination principle is the most widely used approach, with aspects of the origin principles sometimes applied within economic unions.¹²

Despite the widespread use of the destination principle, its implementation in practice is complex, particularly because VATs are structured as multi-stage transaction taxes, which tax both business-to-business (B2B) transactions (which do not involve consumption) and business-to-consumer (B2C) transactions (which do). There are considerable differences in the ways that countries understand the destination principle and implement it in their laws, and there are no equivalents of the Model Tax Treaties and networks of bilateral tax treaties that exist for income tax. To date, the OECD has taken the lead in developing guidance on how the destination principle should operate in practice.¹³ The 2017 OECD *International VAT/GST Guidelines*,¹⁴ which focus primarily on services and intangibles, set out the key outcomes that countries should achieve through their ‘place of taxation’ rules and the mechanisms for ensuring that VAT is neutral for businesses. As mentioned in the introduction, interested readers are referred to the publication by the OECD.

4 Is the VAT regressive?

Consumption taxes, such as value-added tax (VAT), are commonly considered regressive as they disproportionately affect lower-income individuals who spend a higher proportion of their income on consumption¹⁵. The regressivity or progressivity of VAT in developing countries is a debated topic, and a large informal sector may affect the extent of VAT's regressivity or progressivity.

This section discusses the evidence of the existence and extent of regressivity of VAT in developing countries, including the role of the informal sector. The literature on VAT pass-through to prices and the distribution of the tax burden is summarized, and finally, the section weighs the potential policy options and examines their viability in addressing the potential regressivity of VAT in a developing country context.

¹⁰ Liam Ebrill, Michael Keen, Jean-Paul Bodin, and Victoria Summers, *The Modern VAT* (2001: IMF, Washington D.C.) p. 180.

¹¹ See Footnote 1 of the WTO’s Agreement on Subsidies and Countervailing Measures.

¹² Senyk, M., 2020. *The Origin and Destination Principles as Alternative Approaches towards VAT Allocation: Analysis in the WTO, the OECD and the EU Legal Frameworks*.

¹³ See <https://www.oecd.org/tax/consumption/> for the relevant materials published by the OECD.

¹⁴ OECD (2017), *International VAT/GST Guidelines*, OECD Publishing, Paris, <https://dx.doi.org/10.1787/9789264271401-en>

¹⁵ In Economics, this stylized fact is formalized in the Engel’s law.

4.1 The Literature on VAT and Consumption Taxes in Developing Countries

A study on the progressivity of value-added tax (VAT) in Bangladesh revealed that the burden of the VAT is disproportionately higher for lower-income individuals compared to those in higher-income groups¹⁶. However, when certain goods and services are made exempt from the VAT, the burden decreases for lower-income individuals. This finding is consistent with previous research conducted by Fourie (1993) in South Africa, which also discovered a significant degree of regressivity in VAT and showed that zero rating creates a significantly more even distribution of burden¹⁷.

In Pakistan, research found that the general sales tax (GST) is slightly progressive because many goods and services consumed by lower-income individuals are exempt from GST¹⁸. The VAT system in the Dominican Republic is very progressive as tax administration focuses on collecting taxes from establishments where the cost of collection is low, primarily small shops and open markets which are frequented by lower-income households¹⁹. The study recognises that tax administrations do not put much effort into the collection of indirect taxes from small shops and open markets because the cost of tax collection is likely to be greater than the VAT revenues collected.

An analysis of the distribution of Ghana's VAT burden and benefits from VAT exemptions across different households revealed that changes in VAT rates between 1998 and 2015 caused a shift in the distribution of the VAT burden from progressive to regressive²⁰. The trend was primarily caused by changes in household consumption expenditure, where the poorest households experienced increased expenditure on necessities like housing, utilities, transportation and communication. The study also found that as the VAT rates increased, the distribution of benefits from VAT exemptions and zero rate favoured richer households relative to poorer households, possibly because of changes in consumption dynamics, gross abuses of the generous exemptions, or wealthy taxpayers consuming more of these products.

4.2 The Effect of a Large Informal Sector on VAT Incidence

VAT burden can be “passed through” to consumer prices in both formal and informal markets. A high pass-through effect to informal prices may worsen the regressivity of VAT as informal consumers pay higher prices, while a low pass-through effect may make VAT progressive as the formal sector bears most of the burden.

Keen (2008) suggests that informal retailers may pass on VAT costs to consumers by purchasing inputs from VAT-registered suppliers²¹. A more recent study by Brusco (2022) delves deeper into this concept, proposing that VAT pass-through to informal prices can occur through two channels: the supply chain, where informal firms purchase inputs from formal markets, and at the final consumption stage, when they compete with formal firms to sell their output goods²². The study also provides evidence of the existence of VAT pass-through effect

¹⁶ Faridy, N., & Sarker, T. (2011). Incidence of Value Added Tax (Vat) in the Developing Countries: A Case in Bangladesh. *International Journal of Trade, Economics and Finance*, 2(5), 437

¹⁷ Fourie, F., & Owen, A. (1993). Value-added tax and regressivity in South Africa. *South African Journal of Economics*, 61(4), 281-300.

¹⁸ Refaqt, S., “Social Incidence of the General Sales Tax in Pakistan”, IMF Working Paper WP/03/216 (2003).

¹⁹ Jenkins, G. P., Jenkins, H. P., & Kuo, C. Y. (2006). Is the value added tax naturally progressive?

²⁰ Francis Kwaw Andoh & Richard Kwabena Nkrumah (2022) Distributional Aspects of Ghana's Value-Added Tax Forum for Social Economics, 51:4, 394-414, DOI: 10.1080/07360932.2021.1977970

²¹ Keen, M. (2008). “VAT, tariffs, and withholding: Border taxes and informality in developing countries.

²² Brusco, Giacomo, and Tejaswi Velayudhan. "Does the Informal Sector Escape the VAT?." (2022).

in the informal sector of India's manufacturing industry. The study found that the pass-through effect in the informal sector is lower compared to the formal sector. However, prices in the informal sector still respond to changes in the VAT rate.

Bachas (2020) found that in 32 low-and middle-income countries, as income increases, the proportion of the budget spent on informal stores decreases, resulting in a higher effective tax rate for a broad consumption tax on higher-income households, making the tax progressive. He found evidence of tax pass-through for informal stores (14%) and formal stores (77%) from a VAT increase reform in Mexico. He further applied the estimates to the whole sample and the study results showed that VAT is progressive in all these countries and accounting for the pass-through of taxes to informal prices under a VAT system just led to the slight decline in the progressivity.²³

Arsic & Altiparmakov (2013) using Serbian data presents an interesting finding that VAT tends to be more progressive in developing countries, owing to the substantial presence of subsistence farming of food²⁴. This research suggests that in developing countries with large informal sectors that rely on subsistence farming, the VAT system may not be as regressive as it is in developed countries where the informal sector is less prevalent, and households rely more on the formal markets for their food needs. Thus, the minimal participation of low-income households in formal food markets disrupts the VAT pass-through channels and protects them from being affected by the VAT, making it more progressive.

4.3 Policy Considerations

Literature has presented mixed results on VAT burden across income distributions. There are several options available for addressing the potential regressivity of VAT in developing countries such as;

- Exempt or zero-rate certain goods and services which are disproportionately consumed by lower-income groups. To maintain the effectiveness of this policy, the list of goods and services should be frequently reviewed to account for changes in the consumption expenditure of lower-income households over time.
- Progressive VAT rates with proper allocation of goods and services across these rates. This can help reduce the VAT burden on low-income households by setting higher rates on luxury goods and providing targeted tax credits or cash transfers. It should, however, be kept in mind that multiple VAT rates raise the compliance and administrative costs of the VAT.
- Progressive income taxes to offset the regressive nature of VAT. Governments can consider implementing progressive taxation, such as income tax, which can help to redistribute wealth and reduce income inequality.
- Use VAT revenue to fund public goods and services: It is important for developing countries to consider how the revenue from VAT is used. Using the revenue from VAT to fund important public goods and services, such as education and healthcare, can help to offset the burden of VAT on lower income households and make the tax system more progressive.

²³ Bachas, P., Gadenne, L., & Jensen, A. (2020). Informality, Consumption Taxes, and Redistribution (No. w27429). National Bureau of Economic Research.

²⁴ Arsić, M., & Altiparmakov, N. (2013). Equity aspects of VAT in emerging European countries: A case study of Serbia. *Economic Systems*, 37(2), 171-186.

Having noted that the informal sector can great impact VAT regressivity, policymakers must have a good understanding of how VAT is passed through to prices in the informal sector as this knowledge is crucial to the success of implementing policies such as exemptions, zero rating or progressive VAT rates which can address the regressive nature of VAT.

4.4 Conclusion

Essentially, it is important for governments in developing countries to deliberate the specific design of their VAT system and how it might affect different income groups. By making adjustments as needed, they can help to ensure that VAT is not regressive and does not disproportionately affect lower income individuals.

5 Compliance and administration of VAT

VAT administration involves several key elements, including registration, reporting, and compliance. These elements are designed to ensure that businesses and individuals comply with VAT laws and regulations, and that the government can collect the appropriate amount of tax revenue. They are also elements that determine the complexity of VAT compliance thus, it is imperative that they are geared to facilitate voluntary compliance. A tax system can be notionally perfect but deemed inadequate if it is challenging to implement and manage (IMF 1992).

There are several key elements of VAT administration that a tax authority must manage to effectively collect and enforce the tax.

5.1 Registration:

The registration and numbering of each taxpayer is fundamental to key administrative processes such as filing, payment, assessment, collection, and reporting to government authorities (IMF TADAT 2019). Performance Outcome Area 1 of the TADAT²⁵ Field Guide 2019 has the desired outcome that all businesses, individuals, and entities that are required to register are included in the taxpayer registration database. It espouses that the information in the database should be complete, accurate, and up to date.

Businesses are typically required to register for VAT if they exceed a certain threshold of revenue or if they provide taxable goods or services. This may differ from general registration for tax purposes as it is not all persons registered for tax that will be liable to register for VAT purposes e.g., a person may be registered for income taxes or other taxes but do not meet the threshold for VAT registration purposes. In some jurisdictions where a VAT registration threshold is applicable, provision is made for voluntary registration by persons that meet certain requirements such as appropriate record keeping.

According to the African Tax Outlook 2021, the average VAT threshold for African jurisdictions is USD 180,552.18 with Morocco having the highest threshold at USD 510,690.33 and Malawi with the lowest at USD 33,465.07.

²⁵ Tax Administration Diagnostic Assessment Tool (TADAT) is designed to provide an objective assessment of the health of key components of a country's system of tax administration. This framework focuses on the nine key performance outcome areas that cover most tax administration functions, processes, and institutions.

VAT registration in developing countries can be a complex and challenging process because of issues such as lack of capacity within the tax administration, weak legal frameworks, and lack of compliance among businesses (Bird and Gedron 2007).

Unreliable or inaccurate information can severely undermine the effectiveness and integrity of a tax administration. According to the TADAT assessments, many African tax administrations struggle with this issue, particularly at the registration stage. This includes misclassification of taxpayers into their respective sectors. This problem makes it difficult for tax administrations to plan for revenue mobilization and to effectively evaluate the impact of tax policy changes on specific sectors or segments. This ultimately negatively affects the efforts to increase domestic revenue mobilization (ATAF & TADAT 2022). A survey by the African Tax Administration Forum (ATAF) in 2018 though specific to construction industry, shows that sixty-three percent of participating tax administrations could not ascertain the number of taxpayers registered for VAT purposes while fifty percent of the respondents (taxpayers) indicated that there was an insufficient acquaintance with their VAT obligations including registration.

The TADAT Field Guide 2019 suggests that tax administrations can improve their efficiency and effectiveness by implementing certain practices such as using unique taxpayer identification numbers (TINs), maintaining accurate and reliable databases, identifying, and flagging dormant registrations, ensuring the authenticity of registration applications, and implementing initiatives to detect unregistered businesses and individuals.

Additionally, the guide also describes the essential elements of an IT system that can support these initiatives, these are elements such as validating TINs with check digits, linking associated entities and related parties, mitigating the risk of duplicate or conflicting records, interfacing with other IT subsystems to support filing and payment enforcement, providing a whole-of-taxpayer view of a taxpayer's details across all core taxes, allowing for deactivation or deregistration of taxpayers and archive information, generating registration-related management information, providing an audit trail of user access and changes made to registration data, and providing secure online access to businesses and individuals to register and update details.

The ISORA²⁶ survey results for 2018 indicate that in-person registration remains the most common method among surveyed countries, with 93.6percent offering it. However, there has been a significant increase in the availability of digital registration channels, such as online or through apps, with 73.7percent of countries offering this option in contrast to 55.8percent for paper registration via mail. The survey also revealed a significant gap in adoption of digital registration channels between high-income and low-income countries, with 92.2percent of high-income countries utilizing them compared to 38.9percent of low-income countries. This highlights the need for digitalization efforts in low-income countries to enhance tax administration and revenue mobilization. (CIAT 2021).

²⁶ International Survey on Revenue Administration

5.2 Invoicing:

VAT registered taxpayers are typically required by law to issue VAT invoices. The invoices must include the VAT amount charged, as well as the VAT registration number of the business amongst other information which may differ across jurisdictions.

VAT invoicing can be a complex and challenging issue for tax administrations in developing countries. The lack of compliance among small and medium-sized enterprises (SMEs) is a major concern, as these businesses may not fully understand their VAT obligations or may not be keeping accurate records or issuing proper invoices. This can make it difficult for tax authorities to effectively assess and collect VAT, which can lead to a loss of revenue for the government.

While use of technology such as electronic invoicing as done by Chile, Rwanda and Peru has facilitated compliance, the lack of technology infrastructure still poses a challenge, as many developing countries may not have the necessary infrastructure to support electronic invoicing and other digital systems. This can make it difficult for tax authorities to effectively track and analyse VAT data, which can further complicate the compliance and enforcement of VAT laws and regulations.

5.3 Reporting and payment:

Submitting tax declarations, also known as tax returns, is the primary method by which a taxpayer's tax liability is determined and the amount due to be paid is established. (IMF TADAT 2019).

VAT registered persons are required to file VAT returns to the tax authority on a regular basis, typically monthly or quarterly. The returns must include the VAT collected and paid during the reporting period. The business must also pay the VAT due to the tax authority by the deadline for the return.

According to CIAT²⁷, VAT is reported and paid monthly in most revenue administration of Latin America and Caribbean jurisdictions, although some revenue administrations have different requirements for certain category of taxpayers. Out of 19 LAC jurisdictions, 16percent require bi-monthly filings, 5percent require quarterly filings, 21percent require semi-annual filings, and 26percent require annual filings (CIAT 2016).

Considering that filing of tax returns remains a critical process for all jurisdictions, on-time tax return filing is increasingly being used as a critical performance indicator in tax administration (IMF ISORA 2021). The POA4 of the TADAT Field Guide 2019 provides three performance indicators for evaluating timely declaration of tax declarations. They comprise on-time filing rate, management of non-filers and use of electronic filing facilities.

Based on the ISORA 2018 survey report, the global on-time filing rate for VAT is 86percent, which is higher than that for other major tax categories and stable from 2015 to 2017. In both 2017 and 2015, higher-income areas consistently had higher filing rates for all taxes than other groupings. Small states have lower on-time filing rates, which may be related to a lack of progress in tax administration, challenges brought on by scale, and an inability to benefit from

²⁷ Inter-American Center of Tax Administrations

specialization in contemporary tax administration (IMF ISORA 2021). According to CIAT, the rate at which returns are filed in LAC varies based on the frequency of reporting with 66percent of monthly forms submitted on time, while the percentages decrease to 50percent and 49percent for bi-monthly and quarterly reports, respectively.

In terms of filing channel, 79percent of returns were filed electronically in LAC, with the highest percentage being for monthly returns (81 percent), followed by semi-annual (79 percent) and annual (31 percent) returns. Similarly, electronic payments were made for 74 percent of monthly payments and 31 percent of semi-annual payments (CIAT 2016). For African jurisdictions, 73 percent of the tax administrations have an online filing system and 88 percent have an online payment system with use of mobile payment systems being at 57percent (ATO 2021).

Notwithstanding the progress made in online filing and payment, more is to be done to improve the on-time filing and payment rate in developing countries. The comparative analysis of TADAT assessments in Africa shows that on-time filing of declarations and on-time payment of tax liabilities rates are low (ATAF & TADAT 2022).

5.4 Refunds:

Taxpayers can claim a refund of the VAT they have paid on their purchases if they have collected from sales to customers. Some taxpayers may be eligible for a refund if they are exporting goods or services, or if they are providing goods or services that are used for charitable or other non-profit purposes. The process for claiming VAT refunds can be complex and time-consuming, and taxpayers may need to provide documentation and proof of their eligibility for the refund.

Jurisdictions have varying rules on the treatment of refunds ranging from cash refunds to VAT credits to be set off against future output VAT or other taxes. The VAT refund offset is practiced in jurisdictions such as Kenya, Angola, Colombia, Pakistan, Cameroon, Ethiopia, Mexico, and Tanzania. It is important note that some of the jurisdictions may also have a cash refund system for claims of certain values or conditions.

VAT refund typically constitutes a third of gross VAT revenue with VAT refunds in the EU, for in the range of 40 to 50 percent and less than 20 percent (often below 10 percent) in Africa, Asia, and Latin America (Harrison, G. & Krelove, R. 2005). Governments in developing countries often have a low level of VAT refund due to a combination of factors such as inadequate infrastructure and technology to effectively track and monitor VAT transactions, complex or cumbersome refund rules and process, a lack of trained personnel to handle VAT refund processes, a lack of transparency and accountability in the government's financial systems, and a lack of political will to prioritize VAT refund processes amidst competing demands for government resources and attention.

Beyond the above challenges, refund rules put in place in place to mitigate fraudulent claims can also become impediments to the efficiency of the process. For example, some jurisdictions require that VAT refunds are subject to application by the taxpayer accompanied by submission of additional documents and /or verification exercise (tax audit). In Africa, such provisions have led to compliance with refund claim being an average of twenty-eight hours to comply with a refund claim 38.6 to 109.9 weeks to obtain VAT refund (Marius van Oordt 2021).

The comparative analysis of African Tax Administrations that have undergone TADAT assessment found that in most cases, the processing time for VAT refunds is not tracked, and even when it is, the refunds are not issued in a timely manner with only 10 percent of them granting refunds in line with the minimum internationally accepted good practice, which requires at least 7 percent of claims to be paid, offset, or declined within 30 days. It also found that the process for granting VAT refunds is also not risk-based, as 8 percent of the assessed tax administrations do not have a risk-based process for VAT refunds thus resulting delayed refund processing.

Notwithstanding the above, good practices can be found in some developing countries such as the use of a risk-based approach in granting VAT refund in Pakistan (Harrison, G. & Krelve, R. 2005) and the application of automatic refund system in South Africa, Mauritius, Namibia, and Rwanda (ATAF 2019).

The TADAT Field Guideline 2019 emphasizes the importance of promptly paying legitimate tax refunds while implementing measures to prevent fraud, as a crucial aspect of efficient revenue management. It highlights good practices for managing the administration of VAT refunds as below:

- Requiring proof of identity checks for VAT registration to prevent fictitious traders from accessing the VAT system.
- Use of specialized software to evaluate all VAT refund claims based on risk factors, to differentiate between claimants with good compliance records and those with poor or unknown records. Higher-risk claims will undergo pre-refund audits or other verification, while lower-risk claims may be verified after the refund is issued.
- Legitimate VAT refunds are paid or applied to other tax liabilities within a timely manner (for example, 30 days from the date the refund claim is submitted), and interest is paid to taxpayers when legitimate refunds are not issued in a timely manner.
- Implementing forecasting and monitoring systems to predict levels of VAT refunds and ensure that adequate funds are available to pay all valid refund claims as they arise.

5.5 Compliance Monitoring and Enforcement:

The tax administration is tasked with ensuring that taxpayers are complying with the VAT rules and regulations, including registering for VAT, issuing correct invoices, submitting accurate VAT returns, and paying the VAT due. Thus, it is pertinent for the tax administration to have effective enforcement measures in place to ensure compliance among taxpayers. This can include regular audits, penalties for non-compliance, and information sharing between tax authorities and other relevant agencies.

ISORA 2018 survey provides some insight on compliance activities by tax administrations. It states that tax administrations dedicate approximately 42 percent of its staff to compliance enforcement activities with an increase in the rate of comprehensive and desk audits in low-income countries, as against decrease in issue-oriented audits. This is different for high-income countries, with increase in issue-oriented and desk audit percentages and decrease in the comprehensive audit percentage. 70 percent of the survey participants put a high priority on VAT fraud in consistency with the higher level of VAT audit coverage as against income tax.

The survey also showed that low-income countries prioritized cooperative compliance and exchange of information followed by pre-assessment verification and tax compliance by design.

As resources are deployed to compliance activities especially verification (audit), the eminent question is on its effectiveness as a deterrence to non-compliance. A study by Best, Shah and Waseem (2021) on the deterrence value of VAT audit in Pakistan showed that while one-third of firms engage in some tax evasion with 40% of their true tax liability evaded on average, detection without recovery is not an effective deterrent. It is suggested that developing countries allocate more resources towards post-audit recovery which has more significant impact in creating deterrence.

Also, increasingly data is playing an integral role in improving compliance monitoring and enforcement using compliance risk framework especially in an automated environment to analyse and gain insight on the compliance behaviour of taxpayers and deploy the appropriate enforcement mechanism towards non-compliance.

5.6 Dispute Resolution:

Dispute resolution process can take place at both the administrative and judicial levels and can include a variety of methods such as negotiation, arbitration, and litigation. At the administrative level, taxpayers can raise objections and appeals to tax assessments, while at the judicial level, they can take their disputes to court. Effective dispute resolution in taxation can help to ensure that tax laws are applied consistently and fairly and can also help to improve taxpayer compliance by providing a clear and efficient process for resolving disputes. It also helps in creating a sense of trust between taxpayers and tax authorities, which in turn can lead to increased voluntary compliance. The dispute resolution process should be impartial and autonomous, easily accessible to taxpayers, and proficient in settling disputed issues expeditiously (IMF TADAT 2019).

5.7 Small and Medium Enterprises:

VAT compliance and administration can be a complex and challenging task for small and medium-sized enterprises (SMEs). These businesses often have limited resources and expertise to navigate the VAT system and may face difficulties in complying with VAT regulations and filing VAT returns. VAT simplification is a key component of making tax compliance less burdensome for these businesses. This can be achieved by implementing measures such as simplifying VAT registration and compliance procedures, reducing the frequency of VAT returns, and providing more accessible and user-friendly guidance on VAT compliance. Additionally, providing SMEs with the option to use simplified VAT accounting systems or flat-rate schemes can also help to reduce compliance costs. These measures can have a significant impact on reducing the administrative burden of VAT compliance for SMEs, making it easier for them to comply with their VAT obligations and allowing them to focus on growing their businesses.

5.8 Specific Sectors:

Certain sectors may present unique administration and compliance challenges to the tax administration. For example, the construction industry often presents challenges particularly when it comes to the supply of goods and services between different companies in the supply

chain and the predominance of periodic and retention payment in the sector. The tourism and hospitality industry may also present specific VAT compliance challenges, particularly when it comes to the application of VAT to accommodation and related services. The treatment of financial services can also be a source of challenges as some financial services may be exempt or out of scope from VAT while others are not. Another sector worthy of note is donor funded projects and Non-Governmental Organizations (NGOs) where there is potential for abuse of VAT exemptions and reduced rates. Donor-funded projects and NGOs may be eligible for VAT exemptions or reduced rates, but there is a risk that some entities may take advantage of these concessions and claim them improperly.

5.9 Transfer Pricing:

Transfer pricing refers to the prices that are charged for goods or services that are traded between related parties, such as subsidiaries or affiliates of the same company. Transfer pricing can impact VAT compliance and administration, as it may affect the amount of VAT that is due on the supply of goods or services. However, tax administration must consider if the concept of arm's length principle (largely an income tax concept) is applicable under VAT in the jurisdiction especially if it is not clearly provided for in VAT legal framework.

5.10 New Technologies:

Technology can play a significant role in helping tax administrations in developing countries improve VAT compliance. There is potential for new technologies, such as blockchain and integrated tax administration systems, to improve VAT compliance and administration. One way technology can assist is by automating VAT returns through software solutions, reducing the administrative burden on taxpayers, and increasing compliance. Another way is through implementing electronic invoicing systems, which can improve the accuracy and completeness of VAT records and make it easier for taxpayers to comply with VAT requirements while enabling the tax administration to monitor VAT compliance and providing early warning of potential non-compliance. Furthermore, by using data analytics, tax administration can identify patterns and trends in VAT compliance and non-compliance, helping them to focus their compliance efforts where they are most needed. Technology also facilitates internal and external integration of systems for exchange of information. However, there are also challenges associated with the adoption of new technologies, including the need for investment and training, as well as potential concerns around data privacy and cybersecurity.

6 Conclusion

(to be written once body of paper is agreed on).

In this section, we conclude the report, and we provide further details on the reports to be published by this subcommittee.

7 Works Cited

- Bird, R., & Gendron, P. (2007). *The VAT in Developing and Transitional Countries*.
- Cnossen, S. (1991). Design of the Value Added Tax: Lessons from Experiences. In J. Khalilzadeh-Shirazi, & A. Shah, *Tax Policy in Developing Countries*.
- Cnossen, S. (2019). *Modernizing VATs in Africa*. Oxford University Press.
- de Mooij, R., & Swistak, A. (2022, March). Value-Added Tax continues to expand. *Finance and Development*, 52-53. Retrieved from <https://www.imf.org/en/Publications/fandd/issues/2022/03/b2b-value-added-tax-continues-to-expand>
- Ebrill, L., Keen, M., Bodin, J., & Summers, V. (2001). *The Modern VAT*. The International Monetary Fund.
- Huxham, K., & Haupt, P. (1991). *South African VAT- The Book*.
- James, K. (2011). Exploring the Origins and Global Rise of VAT. *Tax Analysts*, 17.
- Kabwe, R., & van Zyl, S. (2021). VALUE-ADDED TAX IN THE DIGITAL ECONOMY: A FRESH LOOK AT THE SOUTH AFRICAN DISPENSATION. *OBITER*, 42(3), 499-528. doi:<https://doi.org/10.17159/obiter.v42i3.12899>
- Keen, M., & Mintz, J. (2004). The Optimal Threshold for a Value-Added Tax. *Journal of Public Economics*, 88(3/4), 559-576.
- Metcalf, G. (1995). Value Added Taxation: A Tax whose time has come? *The Journal of Economic Perspectives*, 9(1), 4.
- OECD. (2014). *Addressing the Tax Challenges of the Digital Economy*. OECD. doi:<https://doi.org/10.1787/9789264218789-en>
- OECD. (2017). *International VAT/GST Guidelines*. Paris: OECD. doi:<http://dx.doi.org/10.1787/9789264271401-en>
- OECD. (2021). *VAT Digital Toolkit for Latin America and the Caribbean*. Paris: OECD. Retrieved from <https://www.oecd.org/tax/consumption/vat-digital-toolkit-for-latin-america-and-the-caribbean.htm>
- OECD. (2022). *Consumption Tax Trends: VAT/GST and Excise Rates, Trends and Policy Issues*. OECD. Retrieved from <https://www.oecd-ilibrary.org/sites/1ca62ced-en/index.html?itemId=/content/component/1ca62ced-en>
- OECD. (2022). *VAT Digital Toolkit for Asia-Pacific*. Paris: OECD. Retrieved from <https://www.oecd.org/tax/consumption/vat-digital-toolkit-for-asia-pacific.htm>
- OECD. (2023). *VAT Digital Toolkit for Africa*. Paris: OECD. Retrieved from <https://www.oecd.org/tax/consumption/vat-digital-toolkit-for-africa.htm>

- Schenk, A., & Oldman, O. (2007). *Value Added Tax: A comparative approach*.
- van Zyl, S. (2013). Determining the place of supply or the place of use and consumption of imported services for Value Added Tax purposes: Some lessons for South Africa from the European Union. *South African Mercantile Law Journal*, 25, 534-554.
- van Zyl, S. (2013). The place of supply rules in Value Added Tax. *South African Mercantile Law Journal*, 25, 255-265.
- IMF (1992). *Improving Tax Administration In Developing Countries*
- Bird, R., & Gendron, P. (2007). *The VAT in Developing and Transitional Countries*.
- IMF TADAT (2019). *TADAT Field Guide April 2019*
- ATAF (2019). *Application of Value Added Tax in the Construction Industry*
- ATAF & TADAT (2022). *Tax Administration Challenges in Africa: A Comparative Analysis from Findings of the Tax Administration Diagnostic Assessment Tool (TADAT) Assessments*
- CIAT (2016). *The Revenue Administrations in Latin America and the Caribbean (2011-2013) / 2016*
- IMF ISORA (2021). *ISORA 2018: Understanding Revenue Administration*
- ATAF (2021). *African Tax Outlook 2021*
- Harrison, G. & Krelove, R. (2005). *VAT Refunds: A Review of Country Experience*
- Marius van Oordt (2021). *VAT Refunds in Developing Countries*
- Best, M., J. Shah, and M. Waseem (2021). *The Deterrence Value of Tax Audit: Estimates from a Randomised Audit Program*

ANNEX B to E/C.18/2023/CRP.29

The VAT treatment of small enterprises

Table of Contents

1	Introduction	2
2	Policy options	2
2.1	Small enterprise exemption	2
2.1.1	Registration threshold	2
2.1.2	VAT registration.....	6
2.1.3	Voluntary registration	6
2.1.4	Sector-specific thresholds	7
2.1.5	Gradual tax relief by multiple thresholds.....	8
2.1.6	Registration evasion.....	8
2.2	Administrative simplifications for small enterprises within the VAT system	9
2.2.1	Simplifying VAT obligations	10
2.2.2	Adjusted deadlines and procedures.....	13
2.2.3	Cash accounting.....	14
2.3	Flat-rate or fixed amount of tax schemes (Special schemes) for small enterprises ..	14
2.3.1	Scope	15
2.3.2	Requirements	15
2.3.3	Taxes covered	17
2.3.4	Categories	18
2.3.5	Advantages and disadvantages	18
3	The use of technology for assisting small enterprises and tax authorities.....	19
4	Conclusions	19

1 Introduction

VAT compliance for small enterprises and the administration of these enterprises for the tax administration can be a complex and challenging task. These enterprises often have limited resources and expertise with which to navigate the VAT system and may face difficulties in complying with VAT laws and regulations and filing VAT returns. The most common option used by countries for small enterprises is to exempt them, keeping them out of the VAT system by implementing a registration threshold (see section 2.1.).

VAT simplification measures for small enterprises can also make tax compliance less burdensome. This can be achieved through measures such as simplified VAT registration and compliance procedures, reduced frequency of VAT returns, and the provision of accessible and user-friendly guidance on VAT compliance (see section 2.2.).

Additionally, providing small enterprises with the option to use simplified regimes for VAT and other taxes and/or flat-rate schemes can also help to reduce compliance costs. These measures can have a significant impact on reducing the VAT compliance burden for small enterprises, making it easier for them to comply with their VAT obligations and allowing them to focus on growing their enterprises (flat-rate or fixed amount of tax schemes (special schemes) will be discussed in section 2.3.).

For the purpose of this report, the term ‘small enterprise’ covers any VAT taxpayer to whom a country might consider applying special VAT rules in view of its small size and/or low turnover.

2 Policy options

2.1 Small enterprise exemption

In this section, we discuss the options for exempting small enterprises to keep them out of the VAT system by implementing a registration threshold. We discuss issues related to the setting of thresholds, voluntary registration, sector-specific thresholds, gradual tax relief through multiple thresholds, and evasion relating to thresholds.

2.1.1 Registration threshold

An essential policy choice in the design of a VAT is the threshold above which businesses must register for VAT. The registration threshold determines who is a taxable person for VAT purposes, and is usually the primary policy instrument for exempting small enterprises from the VAT.

The appropriate registration threshold for a particular country will depend on a number of factors, which may be of different levels of importance for different economies. Considerations should include:

- (i) Effect on revenue: the threshold should be set at a level provide that does not adversely impact on the country’s revenue-raising ability;

- (ii) Ensuring administrative efficiency: the threshold should enable tax administrators to focus on enterprises that contribute the greatest share of VAT revenues, which in some countries also requires excluding small-scale farmers from the VAT net;
- (iii) The distribution of compliance costs: the threshold should exempt small businesses to limit the regressivity of VAT compliance costs;
- (iv) Avoiding economic losses: the threshold should be set at a level where marginal administrative and compliance costs do not exceed marginal revenues.

2.1.1.1 Effect on revenue

To collect sufficient revenues under the VAT, the threshold cannot be too high. Some countries, such as Armenia, Madagascar and Singapore, have a threshold of exceeding USD 300,000. Such a high threshold exempts most businesses from VAT and compared to a benchmark VAT threshold, is often a VAT expenditure.¹ Further, such a high threshold generally gives rise to competitive distortions between persons below and above the registration threshold. It also results in over-reliance on the tax instrument applied to persons below the registration threshold, which is generally a turnover or presumptive tax. Although simplified taxes, such as the turnover tax, reduce compliance costs, they give rise to tax cascading and significant economic distortions.

2.1.1.2 Administrative efficiency

To allow tax administrators to focus on large businesses, the threshold should not be too low. Some countries adopt a low or even no registration threshold. As a general rule of thumb, ninety percent of VAT revenues are collected from ten percent of VAT registered persons. Lowering the threshold to an inappropriately low level is an inefficient policy to obtain additional tax revenues or reduce informality. Broadening the base of the VAT by removing exempt or zero-rated supplies will generally provide greater additional revenues.

Many countries apply special regimes to farmers under the VAT. Farmers are often in remote locations, may not have accurate accounting records, and represent some of the poorest individuals in developing countries. Including small-scale farmers under the VAT may therefore give rise to high administrative and compliance costs. To avoid these consequences, the VAT threshold should be high enough to exclude small-scale farmers from the VAT.²

2.1.1.3 Distribution of compliance costs

VAT compliance costs are regressive since, as a proportion of turnover, they decrease with business size. If the registration threshold is too low, small businesses will be required to register and comply with the VAT. Since these businesses may not have accurate or complete accounting records, their cost of compliance may be substantial. An appropriate threshold will

¹ A benchmark VAT threshold can be estimated by relying on the model proposed by M. Keen & J. Mintz, *The optimal threshold for a value-added tax*, 88 *Journal of Public Economics* 3-4, pp. 559-576 (2004), but excluding compliance costs.

² Excluding small-scale farmers from the VAT may reduce the regressivity of the VAT, but this would depend, amongst others, on the extent of informality in a country, the extent that foodstuffs are imported, and how capital inputs are treated under the VAT.

reduce the regressivity of VAT compliance costs by not requiring small enterprises to comply with the tax.³

2.1.1.4 Avoiding economic losses

Economists approach the setting of a VAT threshold by estimating the optimal threshold for a VAT, taking into consideration the characteristics of the country under study.⁴ This optimal threshold is determined to avoid economic losses, which will generally be avoided if the compliance and administrative costs from having one more person registered is equal to or less than the additional revenues that will be collected from this person.⁵

Although determining actual compliance costs is difficult and economists generally rely on approximated compliance costs, knowing the optimal threshold for a country is useful since collecting tax revenues should be, as far as possible, to the economic benefit of a country. Thinking in terms of the cost-benefits of the registration threshold is useful to inform an appropriate threshold level.

Once a threshold that approximates an optimal threshold is established, economists revise the threshold to take into consideration economic changes. Especially in high-inflation environments, the registration threshold may need to be raised regularly since without these adjustments, the threshold in real terms decreases over time. To have some indication of changes in administrative and compliance costs, economists sometimes consider the change in GDP per capita over time. GDP per capita is viewed as a proxy for administrative and compliance costs, since these are correlated with the level of development of a country. An increase in per capita GDP suggests a decrease in the sum of administrative and compliance costs, which will in terms of an optimal threshold be reflected by lowering the threshold.

Table 1 provides average registration thresholds by region, applicable at the start of 2020.⁶ The average threshold generally exceeds USD 50,000 and is higher in less developed regions with lower per capita GDP than more developed regions.

³ Other instruments, such as a presumptive tax applied to small businesses, limit the regressivity of compliance costs for other taxes.

⁴ M. Keen & J. Mintz, *The optimal threshold for a value-added tax*, 88 *Journal of Public Economics* 3-4, pp. 559-576 (2004).

⁵ To be precise, it is the social value of the additional revenues and administrative costs that should be considered in determining the optimal threshold. [Does this help? Without explanation, it seems out of place.]

⁶ Data obtained from www.imf.org and includes data for 128 countries.

Table 1. Average VAT registration threshold by region.

Region	Average Threshold (USD)
Australasia	45,120
Baltic States	184,811
Caribbean	66,918
Central America	37,500
Central Asia	102,865
Eastern Africa	68,478
Eastern Asia	93,292
Eastern Europe	48,897
Melanesia	57,385
Middle Africa	493,206
Middle East	97,988
Northern Africa	69,427
Northern America	22,263
Northern Europe	93,811
Polynesia	72,476
South America	36,425
South-Eastern Asia	190,949
Southern Africa	57,518
Southern Asia	91,956
Southern Europe	15,782
Western Africa	325,325
Western Asia	127,582
Western Europe	50,428

2.1.2 VAT registration

Generally, businesses are required to register for VAT if their turnover exceeds the registration threshold over a period, which is generally 12 months. Each country has its own approach to establishing turnover, with a common approach being that turnover refers to the value of all sales, whether taxable supplies or not. Some countries do not use turnover, but rather taxable supplies to determine whether a business should register for VAT. Businesses only making exempt supplies would, therefore, not be required to register for VAT or submit VAT returns. This approach has the benefit of reducing administrative and compliance costs. However, since businesses that make exempt supplies would therefore not file returns, VAT return data cannot be used for policy analysis. Policy analysis should therefore be conducted using other sources of data and more advanced methods.

To reduce administrative and compliance costs, rules are required to keep businesses that temporarily exceed the threshold from registering. Common rules would exclude once-off transactions of large value from consideration when determining whether a business should register. Other rules allow businesses to provide reasons that their turnover will only temporarily exceed the threshold.

2.1.3 Voluntary registration

The registration threshold only determines when businesses must register for VAT. If appropriately designed, it does not exempt all businesses below the threshold from VAT. Businesses should be able to select to not be exempt, but rather VAT registered, even if their turnover is below the registration threshold. If not, the registration threshold will give rise to greater competitive distortions and increase informality.

Businesses will generally opt to voluntarily register under the VAT if they predominantly supply to other VAT registered businesses or make zero-rated supplies. Registration allows input VAT to be deducted by the small business and the output VAT charged will be deductible by registered recipients, registering for VAT results in a competitive advantage for businesses predominantly supplying to registered businesses. For zero-rated supplies, including exports, businesses do not charge output VAT but would prefer to be registered to deduct input VAT. Another reason that businesses may opt to register is if they have large capital costs and experience cash flow constraints. Cash flow constraints may force businesses to register even where it may give rise to a competitive disadvantage to do so.

A well-designed VAT system therefore provides incentives to register and enter the formal tax system, which may reduce informality and raise tax collections from other tax instruments, such as the income tax. Since these incentives relate to claiming input VAT, the broader the base of the VAT the stronger these incentives. Applying the VAT to capital inputs and common business inputs such as fuels, water, and electricity, is particularly important to motivate voluntary VAT registration, as businesses once registered would be allowed to deduct VAT on these items. Taxing these supplies will not only raise additional VAT revenues because of a broader base but also raise revenues from other tax instruments because of more businesses being in the formal tax system.

Although voluntary registrations should be allowed, tax administrations should determine the legitimacy of a business before registering it for VAT, considering that VAT registration is the

entry point to VAT fraud. VAT provides unique opportunities for fraud, and especially VAT refund fraud may be prevalent and difficult to detect.

To limit VAT fraud, some countries such as South Africa apply a low, voluntary registration threshold where below most businesses may not register. Other countries rely on other requirements that a business needs to meet to show that it is legitimate, such as business licenses and physical presence in the case of Mauritius and third-party data in the case of Ukraine. Irrespective of the approach adopted, objective requirements to establish the legitimacy of a business are required prior to VAT registration.

2.1.4 Sector-specific thresholds

Since the value-added of a transaction varies by sector, and certain sectors such as agriculture and forestry face higher compliance costs⁷ while others, such as professional services, can easily evade the VAT,⁸ some countries set sector-specific thresholds. These may also take the form of requiring businesses of a certain legal form to register for VAT irrespective of their turnover, which is effectively a threshold of zero. Separate thresholds for suppliers of goods and suppliers of services are also found in, for instance, Senegal, Côte d'Ivoire, Ireland, France, Algeria and Malta.

Although setting sector-specific or supply-specific thresholds may appear appropriate when only considering tax policy, this approach results in significant administrative challenges. The primary challenge is classification. Determining the sector that a person operates in, or whether a person only made supplies of goods or services, poses a challenge to tax administrators. Without sufficient administrative capacity, businesses can often evade tax registration by arguing or presenting themselves to belong in a different sector. If businesses are not allocated to the sector that they appropriately belong, competitive distortions will arise.

When deciding on a threshold for foreign suppliers that supply electronic services or low value imported goods, the threshold applicable to domestic businesses will generally be appropriate. Although the ratio of compliance costs to turnover of foreign businesses may, on average, be less than domestic businesses, this approach avoids competitive distortions between domestic and foreign businesses. As a general principle, small foreign businesses should not be required to register for VAT in the import jurisdiction since the revenues collected from these businesses may exceed its administrative costs.

As a general principle of VAT, whether the tax is charged should, as far as possible, be determined by easily verifiable factors alone. It is for this reason that, as often done in developing countries, basing the tax treatment on the use of goods or services, or the nature of the recipient is considered poor policy. Similarly, the difficulty of verifying the sector that a business belongs to may give rise to costs that exceed the benefits of sector-specific thresholds. Generally, a single registration threshold that applies to all persons, irrespective of sector or type of supplies made, is considered best practice under a VAT.

⁷ The compliance costs in these sectors tend to be higher due to operating in remote locations and, in many developing countries, comprising many smaller businesses.

⁸ Professional services in developing countries are often cash-based businesses with turnovers or taxable supplies that exceed the registration threshold. Operating in cash eases VAT evasion.

2.1.5 Gradual tax relief by multiple thresholds

Another reason why countries may have more than one compulsory registration threshold is to ease businesses into the VAT, or provide gradual tax relief, by providing reduced rates on the supplies of persons below the primary threshold, but above a secondary threshold. Persons with turnover between the two thresholds will charge output VAT at a reduced rate and can deduct input VAT at the rate paid on their purchases, or the rate applied to their supplies.

This practice gives rise to some negative consequences. The primary consequence is the challenges that arise in applying a VAT with multiple rates. Multiple rates raise the compliance and administrative costs of the VAT since they require increased verification to ensure that the correct rate is/was charged. Multiple rates also increase the likelihood that VAT refunds will arise and, especially developing countries, find VAT refunds difficult to administer.

Another consequence is that competitive distortions that arise between persons charging the reduced VAT rate and those above the primary or general registration threshold, who must charge the standard rate. These distortions will be greater if the businesses charging the reduced VAT rate are allowed to deduct input VAT at the rate paid on their purchases. If input VAT deductions are reduced by limiting them to the rate charged on supplies, this also raises administrative and compliance costs and leads to tax cascading.

Reduced rates for small businesses also distort consumer choices. Since the VAT treatment is inconsistent between different suppliers, similar goods and services will be taxed at different rates, depending on the supplier. Since this results in economic distortions, the overall efficiency of the VAT is reduced. These consequences suggest that gradual tax relief by multiple thresholds should generally be avoided under the VAT.

2.1.6 Registration evasion

Persons evading VAT registration provide an administrative challenge. In particular, businesses that predominantly supply to final consumers will have incentives to avoid or evade VAT registration, particularly if they do not have significant input VAT deductions (for example, service providers whose main inputs are labour). Since final consumers cannot deduct input VAT on their purchases, non-registered suppliers to consumers will generally have a competitive advantage to registered suppliers.

There are two prominent methods of evading VAT registration if a single registration threshold is applied. The first is under-reporting of turnover to remain below the threshold. Liu et al. (2019) show that businesses with less inputs, who face greater competition, and predominantly sell to consumers tend to under report turnover to remain below the registration threshold.⁹ Although this type of evasion can be difficult to detect, identifying businesses that persistently have turnover below the threshold to be audited is an important first step. Cross-checking VAT return data with other data available to the revenue authority may detect under-reporting. If the threshold is changed, this also presents an opportunity to identify persons whose reported turnover follows the threshold to further investigate the reasons for the observed change in turnover.

⁹ L. Liu, B. Lockwood, M. Almunia & E.H. Tam, *VAT notches, voluntary registration, and bunching: Theory and UK evidence*, 103 *Review of Economics and Statistics* 1, pp. 151-164 (2021).

The other method of evading the threshold involves splitting businesses into branches that each have turnover below the threshold with the purpose of avoiding VAT registration.¹⁰ As a business' turnover approach the threshold, persons will attempt to evade the threshold by creating a second business, often in proximity to the first. To limit this form of evasion, anti-avoidance rules that do not allow the calculation of the threshold on a branch-by-branch basis or deem multiple businesses to be a single person for VAT purposes are required. Administrators may consider the financial, economic and organizational links of a business to identify splitting of businesses. Further, only providing business licenses to individuals, and not businesses, may help detect this form of evasion since multiple businesses can be linked to the individual.

Where businesses evaded the threshold or did not register when they ought to, rules are required to determine the VAT liability of these businesses. Some countries deem such businesses to have been registered for VAT from the date registration was due. Businesses are then required to re-invoice all supplies from the date registration was due and the VAT over the tax administration. Other countries may make a deemed assessment of the VAT payable. Penalties are also common.

While determining appropriate rules to limit evasion, not overburdening businesses with excessive documentary and other requirements is important. A balance between limiting threshold-related evasion and limiting compliance costs and other disincentives towards registration is required. VAT registration regulations should be kept as simple as possible, while limiting legal uncertainty. In more developed countries, requiring electronic invoicing may provide further robustness to tax administration.

2.2 Administrative simplifications for small enterprises within the VAT system

In this section, we discuss policy options that may improve compliance, reduce compliance costs, or simplify the standard VAT regime for small enterprises that are registered.

Simplification measures may apply in countries where there is no exemption from VAT for small enterprises (the exemption for small enterprises or "registration threshold" discussed in section 2.1). Simplifications may also apply in countries where there is a registration threshold. In the latter case the simplifications are targeted for enterprises that are below the registration threshold but opt for voluntary registration, as well as for enterprises having a turnover exceeding the registration threshold, but still considered as being small enterprises that should benefit from simplifications. In this case a second threshold must be set to determine which small enterprises may benefit from simplifications.

Example: If the exemption threshold is set at USD 10.000 (annual turnover), simplifications could apply to small enterprises whose annual turnover ranges between USD 10.000 and USD 100.000.

¹⁰ This method is not illegal in all countries and may in such cases constitute tax avoidance.

2.2.1 *Simplifying VAT obligations*

2.2.1.1 Registration process

Registration is a crucial step because this is the moment when taxpayers are “entering” the VAT system.

It is undisputed that tax administrations need to collect and verify data regarding the taxpayers before they can validate a registration. Nevertheless, registration should not become an unnecessarily cumbersome process. If the burden associated with registration is too high, this may indeed jeopardise the whole process. In contrast, it is widely acknowledged that simple registration procedures increase the level of compliance to the registration requirement.

Too complex registration procedures may also lead to errors. If these errors lead to sanctions for the taxpayers, it may also cause frustration and distrust in the tax system and administration.

Accordingly, the right balance should be struck between what the tax administration needs to monitor the functioning of the system and to avoid abuse and fraud and what small enterprises may legitimately be expected to provide. The practicalities of the registration process (online versus offline options) are also of utmost importance.

It is therefore recommended to limit the requested information to what is necessary to clearly identify the small business and to ensure the collection of the VAT. This can be limited to:

- The full name and date of birth (DOB) of the natural person (if applicable – not applicable if legal entity);
- The name of the legal entity and full name and DOB of the natural person legally representing the legal entity (if applicable – not applicable if natural person);
- Postal and registration address + name and contact details (email address + telephone number) of a contact person for the tax administration;
- Website of the small business (if applicable);
- Turnover during three previous years (if applicable – not applicable for new businesses);
- Sector of activity;
- Expected percentage of exempt activities (if applicable);
- Expected application of reduced VAT rates (Y/N and which ones);
- Date of commencement of activity;
- Registration in other countries (if applicable).

Both an online and offline options should be considered for the actual submission of the registration request. In practice an online form on the tax administration website *and* paper forms to be sent by mail or email, or submitted directly at a tax office should all be acceptable forms of registration.

Some countries require the appointment of a fiscal representative for taxpayers as a prerequisite for registration, particularly foreign taxpayers, to register. This adds a layer of costs, complexity and administrative burden. Moreover, in many cases it is almost impossible to find a person/company willing to act as a representative due to joint and several liability risk for that company. The requirement to have a fiscal representative may also be counterproductive as, while it does not help addressing the situation of those that avoid registering, it provides a disincentive to them registering in future.

2.2.1.2 Tax returns

The tax return is typically structured in two main parts:

- VAT collected by the taxpayer (output VAT)
- VAT incurred by the taxpayer (input VAT)

Further breakdowns are required to enable the tax administrations to understand how the taxpayer calculated these respective amounts and to reconcile the numbers. However, it is once again recommended to keep the number of *boxes* to a minimum, in particular for small enterprises, in order to facilitate and therefore increase compliance. Explaining why each piece of information is necessary, for example in the form of guidelines published on the tax administration website, may also increase acceptance and compliance by the taxpayer.

In order to monitor the correct application of the VAT, the information that must be reported to the tax administration can be limited to the following:

- Total amount of output VAT collected during the taxable period?
- Total amount of deductible input VAT incurred during the taxable period?
- Turnover related to supplies in which the taxpayer applied reduced VAT rates (and which ones) during the taxable period?¹¹
- Turnover related to supplies in which the taxpayer applied exemptions (without a right to deduct) during the taxable period?¹²
- Turnover related to exports or other supplies subject to a zero-rate made during the taxable period?¹³
- Expenditure related to supplies in which it is the customer was liable to self-assess the VAT (domestic reverse charge) during the taxable period?¹⁴
- Turnover related to supplies treated as domestic supplies in a foreign country during the taxable period, in relation to which a right to deduct is exercised?¹⁵
- Amount of adjustment notes issued during the taxable period?¹⁶
- Amount of adjustment notes received during the taxable period?¹⁷
- Amount of VAT deduction adjustment in favour of the Treasury?¹⁸
- Amount of VAT deduction adjustment in favour of the taxpayer?¹⁹

It is further recommended to:

¹¹ This information is necessary to understand how the total amount of output VAT was reached.

¹² This information is necessary because when such supplies are made, the taxpayer does not have a full right to deduct.

¹³ This information is necessary because in this case there is no related output VAT, but the taxpayer probably incurred expenses (with input VAT) for which they will require a deduction. In the absence of information regarding these supplies, the amount of input VAT may seem disproportionate as compared to the amount of input VAT.

¹⁴ Id.

¹⁵ Id.

¹⁶ This information is important because in this case, a reduction of the output VAT is made by the taxpayer.

¹⁷ This information is important because in this case, the taxpayer is required to adjust the input VAT deducted in relation to this amount (if VAT was applied on the supply).

¹⁸ This information is necessary to monitor adjustments made by the taxable person (in case of credit notes received or other corrections to the right to deduct).

¹⁹ This information is necessary to monitor adjustments made by the taxable person (in case of credit notes received or other corrections to the right to deduct).

- Allow taxpayers to submit paper and electronic tax declarations.
- Allow for the possibility not only to submit returns online but also to *fill in* online returns (in an electronic format).

2.2.1.3 Invoices

The obligation to issue tax invoices in B2B transactions is linked to the monitoring of the VAT deductions made by the taxpayers throughout the supply chain. Taxpayers usually need tax invoices to support their deduction claims. Tax invoices should therefore include the information necessary to determine whether the right to deduct was legally exercised. At the same time, the invoicing process should remain simple.

To reach that objective it is recommended to only require the following information on tax invoices issued by small enterprises:

- A serial number²⁰
- A date of issuance²¹
- The name and VAT number of the supplier²²
- The name and VAT number of the customer²³
- The date of the supply²⁴
- The nature of the supply (description should be detailed enough and include location if relevant)²⁵
- The net price, the VAT rate applicable, the VAT due and the price including VAT²⁶
- If applicable, the legal provision according to which the liability to pay the VAT is switched to the customer (domestic reverse charge)²⁷

It is also recommended to:

- Allow both paper and digital invoices (for digital invoices, both PDF and XML formats should be accepted).
- Provide a template on the tax administration website.

2.2.1.4 Record keeping

Taxpayers must keep records of their transactions for audit purposes. In order to minimise the financial burden related to record keeping obligations, it is however recommended to limit the data that needs to be collected and the time period during which it should be kept. In general, it is recommended to limit the obligation to [10 years]. A shorter period [(i.e. 4 - 7 years)]

²⁰ This is needed to clearly identify each invoice and make the invoice a unique document.

²¹ This may be needed to determine the time when the VAT is due to the Treasury.

²² This is needed because only supplies made by taxable persons are in principle subject to (deductible) VAT.

²³ This is needed to identify the person who will be allowed to deduct the VAT included on the invoice. In a cross-border situation, the name and VAT number of the customer are needed to determine whether VAT is due in the jurisdiction of the supplier.

²⁴ This is needed to determine the time when the VAT is due to the Treasury.

²⁵ This is needed to confirm that the correct rate was applied on the invoice and whether VAT is due in the jurisdiction of the supplier.

²⁶ This is needed to confirm that the calculation is made correctly. In case of application of a reduced rate, some additional mentions may be required.

²⁷ This is needed to explain why in this case no VAT is included on the invoice.

could be adopted for small enterprises for whom the costs of keeping data are proportionately greater than for larger enterprises.

2.2.1.5 Payment of the VAT

Cash and electronic payments should be allowed.

2.2.2 *Adjusted deadlines and procedures*

2.2.2.1 Taxable periods

Under the VAT system, taxpayers are collecting the tax and passing it on to the tax administration on a periodical basis. The longer the tax period, the higher the risk that the taxpayer collects the VAT but does not remit it to the tax administration. At the same time, requiring from taxpayers that they remit VAT at too short intervals is overly burdensome.

In the case of small enterprises in particular, a balance must be struck between the risk of revenue loss (which is smaller than in the case of larger businesses) and the associated compliance burden.

It is therefore recommended to adopt longer taxable periods for small enterprises than for other businesses, i.e. at least quarterly and at most annually.

2.2.2.2 Refunds

When a taxpayer collects less output tax than its deductible input tax, it suffers a VAT burden that can only be relieved if the situation is not repeated in the next period (i.e. if, in the next period the taxpayer is able to deduct all the input VAT incurred against the output VAT collected) or if a refund of input VAT is offered.

Usually, countries do not pay refunds that are under a certain amount (refund thresholds) for tax administrative efficiency reasons (because organising the refund is costly for the tax administration). Yet, these small amounts can be important for small enterprises where cash flow is typically lower.

Also, some small enterprises may also always be in a credit position, for example because they incur VAT in their jurisdiction for the purpose of transactions that will take place abroad or in relation to exports (and for which no output VAT can be collected in their jurisdiction). For these taxpayers the refunds payable are likely to exceed the refund thresholds, but the refund process may take some time because the refund request is usually made via the VAT return, and the tax period is likely to be longer for small enterprises (see section 2.2.2.1).

To address this situation, it is possible:

- To apply reduced refund thresholds for small enterprises (keeping the related administrative burden in mind);
- To organise separate refund procedures for those small enterprises that sells abroad on a recurrent basis (a threshold based on the turnover related to sales abroad should be set).

- To allow regular exporters, e.g., taxpayers whose turnover deriving from exports is at least certain percentage (e.g. 10%) of their annual turnover, to purchase goods/services without VAT.

2.2.3 Cash accounting

2.2.3.1 Concept

Cash accounting concerns the time when the taxpayer is required to pay the VAT to the Treasury. Under general rules, the taxpayer will usually be required to pay the VAT at the end of the taxable period during which the supply subject to VAT was made or invoiced. However, it is not because the supply was made or invoiced that the VAT was already paid to the supplier by the customer.

Under the cash accounting method, the time when the VAT must be paid to the Treasury is calculated, not taking into consideration the time of the supply or of the invoice but taking into consideration the moment when the customer pays the VAT to the supplier. With this method, taxpayers do not have to prefinance the VAT.

If the right for the customer to deduct the input VAT arises at the time the VAT becomes due to the Treasury, the cash accounting method also prevents a situation where the customer would already benefit from a possibility to deduct a VAT that it has not yet paid (based on the invoice issued by the supplier but that it has not yet paid).

2.2.3.2 Applicability to small enterprises

Under the general rules, taxpayers may have to prefinance the VAT and wait until the customer pays it. For larger businesses, the cash flow disadvantage related to these rules is usually considered bearable. For small enterprises, in contrast, it may be very problematic.

This is why the reliance on the cash accounting method is recommended for small businesses, in particular in countries where there is no registration threshold. In countries where there is a registration threshold, cash accounting could still be applied to small enterprises below a (second) threshold to be determined.

2.3 Flat-rate or fixed amount of tax schemes (Special schemes) for small enterprises

In this section, we describe the flat-rate or special schemes used in some jurisdictions for small enterprises and discuss the advantages and disadvantages of such special schemes. These systems are different from those described in sections 2.1 and 2.2, as these sections concern systems where only VAT is involved, whereas section 2.3 covers also other taxes and contributions.

These special schemes involve taxpayers paying a fixed amount of tax, a flat-rate or a tax amount that is based on a factor as explain below; in a taxable period (usually monthly, but it can be quarterly or annually). These special scheme covers in general not only VAT but also income tax and, in some jurisdictions, other taxes or contributions, such as social security contributions or health insurance. The special schemes were introduced in some Latin American countries at the end of the 1990s. In the European Union, Spain and Italy have also

introduced a special scheme for small enterprises, and outside the European Union, Belarus and Ukraine have done the same.

It is important to mention that the main objective of these type of special schemes is not only to collect taxes, but to lower compliance and administrative costs, and to solve the problem of informality for these small enterprises.

2.3.1 Scope

These special schemes apply, in general, to individuals and small enterprises that perform certain economy activities and, that meet certain requirements as explained in section 2.3.2.

Each jurisdiction has different criteria to determine who can be covered by the special schemes. In general, the turnover is the main condition to enter into the special schemes, but the type of activity/activities that the small enterprises carry out are usually also considered. In addition to these criteria, the number of activities and establishments where those activities take place is considered (e.g. Argentina, Costa Rica). The number of employees is a determinate factor in some countries (e.g. Belarus). In other countries, the taxpayer' status for income tax purposes has to be considered (e.g. Spain).

2.3.2 Requirements

The special schemes apply to those who meet certain requirements, here below, we included a list of requirements that countries consider when designing this special schemes.

2.3.2.1 Turnover threshold(s)

In order to be qualified for the special schemes, the turnover should not be higher than a certain threshold(s) based on gross turnover, covering specific activities or sectors. This means that the main condition to enter the special schemes is to have a turnover under a certain threshold. This threshold needs to be adjusted regularly, mainly to consider inflation.

Jurisdictions apply different thresholds for different types of activities. In Argentina, the maximum thresholds to qualify for special scheme of small enterprises are different for the supply of services than for the supply of goods, as the threshold for supplies of services is lower than the threshold for supply of goods. The reason for this difference is that VAT is a general, broadly based consumption tax assessed on the value added of goods and services, so in order to reach the same added value in a sale of goods, a higher turnover must be achieved. In case that the small enterprise performs supplies of goods and services, he needs to take into account his main activity to determine in which category of the special scheme he qualify.

Other examples are, Spain which has a single threshold to be under the special scheme; Peru establishes two thresholds based on turnover or acquisitions per monthly basis and Ecuador has established seven different thresholds based on annual turnover.

2.3.2.2 Activities

Regarding the activities that the special schemes comprise, each jurisdiction has its own limited and restrictive list.

In Uruguay, the list covers around 40 types of activities, for example, handcrafts, maintenance of vehicles, tourist guides, trainers and dog walkers. However, there are also countries that do not use a list of activities to apply for the special scheme, but instead they use a list of restricted activities, so if the taxpayer is engaged in any of them, they cannot benefit from the special scheme. For example, Ecuador has a list of this type, where activities such as stockbroker, advertising or commercialization and distribution of fuels are excluded from the possibility to be under the relevant special scheme. Another example is Peru, where stockbroker, notaries, travel agencies or passenger transport cannot benefit from the special scheme.

Most jurisdictions do not allow taxpayers who perform cross-border transactions to be included in the special schemes.

2.3.2.3 Number of activities, establishments, or employees

Some jurisdictions also limit the number of activities, the number of establishments where these activities can be carried out and the number of employees that these enterprises can have.

In Argentina, taxpayers under the "monotributo" are not allowed to import goods and may not exercise more than three activities or develop activities in more than three places at the same time. In Costa Rica and Peru, if the small enterprise has more than one establishment open to the public, regardless of the number of activities, it cannot benefit from the special scheme.

In Spain, the special scheme applies to each of the activities carried out by the entrepreneur or professional where the activities must be considered independently. For example, if a small enterprise is registered as performing three activities (e.g. trade in household appliances; trade in building materials; trade of doors, windows and shutters), but only two of those activities are under the scope of the simplified scheme (e.g. trade in household appliances and trade of doors, windows and shutters), the simplified regime applies to each of those two activities carried out by the entrepreneur or professional.

In Belarus, there are several special schemes available for small enterprises:

- the single tax on individual entrepreneurs and other individuals (type of presumptive taxation that is mandatory for certain types of economic activity);
- individual entrepreneurship, which applies to individuals registered as individual entrepreneurs who are allowed to hire up to three employees that are their relatives of the first degree;
- The simplified tax regime (covers VAT and CIT), which does not depend on the nature of the supply but on the following criteria:
 - the average number of employees does not exceed 50 persons;
 - gross revenue does not exceed the registration threshold during the fiscal year; and
 - companies having subsidiaries on the territory of Belarus cannot benefit from this regime.

2.3.2.4 Who can be a taxpayer?

The special schemes, in general, apply to individuals (natural persons) that perform an economy activity and, in some jurisdictions, also to small enterprises that meet certain requirements.

In Argentina, the special regime is open to individuals, sole proprietorships, and undivided estates of natural persons, engaged in primary activities (e.g. farming activities), trade in goods and rendering of services (including professional services, but excluding management of companies and board members) with certain thresholds based on annual turnover.

Costa Rica allows individuals and legal entities to register under the special scheme. In Ecuador, only natural persons can be included in the special scheme. In Peru, natural persons and undivided estates of natural persons are comprised. In Uruguay, both individuals and certain partnerships can benefit from special schemes.

In Spain, the special scheme applies to individuals and enterprises that are considered individual entrepreneurs and pass-through entities for personal income tax purposes (e.g. joint property entities or entities without a legal personality) that pursue certain commercial activities (e.g. restaurant services, repairs, transportation, hairstyling), provided that, in relation to such activities, the enterprise does not exceed the limits established for each of the activities.²⁸

2.3.3 *Taxes covered*

The special schemes cover not only VAT, but also other taxes such as income tax and, in some jurisdictions, contributions such as social security or health insurance.

In Argentina, the special scheme called “monotributo” unifies the tax component (that includes VAT and income tax) with the pension component (that includes retirement contributions and health insurance) in a single monthly instalment. Argentinian legislation also exempts the social security component for the first two lowest categories of taxpayers that do not have other sources of income in addition to the respective commercial activity (such as employment income, pension or rents).

Uruguay covers retirement contributions, and the health insurance is optional. In Belarus, Costa Rica and Ukraine, VAT and income tax are included. In Brazil, all indirect taxes are comprised in the “Micro Empreendedor Individual” (MEI). The SIMPLES National²⁹ covers eight indirect taxes (six federal, one estate level and one municipal).

²⁸ In Spain, an activity is under the application of the special scheme (simplified) when it is specifically included in the Ministerial Order regulating the special system. The special scheme is applied to all those who meet the following requirements:

- They are (i) individuals or (ii) enterprises using the income allocation regime of personal income tax, provided that, in the latter case, all partners, heirs, co-proprietors or stakeholders are individuals.
- That each of its activities is included in the Order that develops this regime and that the specific magnitudes established there are not exceeded.
- Their income volume in the previous year does not exceed any of the following amounts (when an activity has been started in the previous year, the volume of revenue is raised for the year):
 - 250,000 euros for the total of all economic activities, excluding agricultural, forestry or livestock farming activities.
 - 250,000 euros for the total of all agricultural, forestry and livestock farming activities.
- The volume of acquisitions or imports of goods and services in the previous financial year, excluding acquisitions of fixed assets, does not exceed 250,000 euros per year (excluding VAT).
- Who have not renounced the regime.
- They have not waived or are not exempt from the objective estimate regime of personal income tax.
- No activity is under direct estimation of personal income tax or under any of the VAT regimes that are incompatible with the simplified system.

²⁹ Simples Nacional is an optional taxation regime that allows the unified collection of municipal, state and federal taxes. In addition to unifying all taxes, the rates are lower compared to the payment of all of them separately and progressively, always calculated based on the monthly gross turnover of the enterprise.

2.3.4 *Categories*

The categories in the special schemes determine the tax that the taxpayers must pay. This amount could be a fixed amount of tax or an amount of tax that is based on different factors.

In Argentina, the category is assigned according to the following three factors: (i) the type of commercial activity that is carried out (provision of services or the supply of goods); (ii) if the activity is carried out in a physical establishment: the square meters of the establishment, the total electrical energy consumed and the rental cost of the establishment; and (iii) the gross annual turnover (an estimate of the income obtained from carrying out the activities). Based on these parameters, the “monotributo” is divided in eleven categories with a fixed amount to be paid monthly.

Uruguay has four categories which are also based on gross income, the cost of the rent, and not exceeding the number of establishments with a fixed amount. Ecuador has seven categories based on annual income that is subdivided in eight categories based on type of activities. Each category has a fixed amount to pay monthly. Peru has two categories based on monthly income and the value of acquisitions with a fixed amount to be paid. Costa Rica has several categories depending on the type activities carried out, based on two factors: one to determine income tax and the other to determine VAT, which apply in general over the value of acquisitions over the quarterly period.

Spain considers, among others, the salaried staff, the non-salaried staff, area of the premises and electric power consumption.

2.3.5 *Advantages and disadvantages*

The special schemes are different in every country that applies it, but the main incentive is to bring into the tax any net businesses that, due to their size or activity, operate in the informal sector because it is costly to comply with the administrative obligations of a regular tax system. The aim is to improve the tax culture in the jurisdiction.

The special schemes are not intended to generate revenue. However, they can result in beneficial for tax authorities to control the large taxpayers through the small enterprises and their acquisitions. Hence, it is good practice for tax authorities to request small enterprises to keep information on the value of their acquisitions (e.g. Costa Rica and Peru).

An advantage of the special schemes when they cover social security contributions and retirement pension or health insurance, is that they provide a minimum coverage on them, as usually these businesses do not have access to them.

The special schemes are beneficial for tax authorities, as they reduce the amount of resources targeted to audit small enterprises (e.g. they are not obliged to issue invoices).

An advantage for the small enterprises is the low compliance costs to fulfil with the special schemes as their administrative burden is not extensive. This is an incentive to be identified for tax purposes.

A disadvantage of the special schemes is that certain small enterprises may have no incentive to grow, and they may decide to remain in the parameters in order to continue benefiting from the rewards of being part of the special scheme.

3 The use of technology for assisting small enterprises and tax authorities

In this section, we discuss how technology can be used to reduce compliance and administration costs and to improve the enforcement of the VAT. We will in particular focus on technology tools (e.g. cash registers) underlying the simplifications/special regimes discussed in section 2.1, 2.2 and 2.3 will be directly discussed in these sections.

E-invoicing will be covered in a dedicated chapter and will therefore not be discussed here.

In this section, we will refer to the document of the use of new technology to improve VAT compliance, which also includes information about small enterprises.

4 Conclusions

In this section, we conclude by summarising the main findings of the report and provide suggestions on policy options and implementation tools that developing countries may consider for small enterprises under a VAT system.

ANNEX C to E/C.18/2023/CRP.29

VAT/GST Refunds

Table of Contents

1. Introduction	2
2. The reality of the existence of refunds in a VAT	7
3. Mechanisms to request refunds	8
4. Budgeting for refunds, including the development of a model to estimate the likely level of refunds that may be refunded in a fiscal year	9
5. Tax Administration - Reasons for refunds not being paid timeously or not being paid at all	9
6. Impact on taxpayers where inefficient refund mechanisms/processes exist	11
7. Tax administration considerations	12
8. Fraudulent refund schemes	12
9. Country experiences -.....	12
10. Conclusion	12
Annexures	13

1. Introduction

Refunds are a reality of a value added tax¹. The extent to which a country's VAT policy and resultant legislation provides for the offsetting of expenses (including capital and operational expenses) against sales income (including both zero rated and standard rated sales) will be evident in the extent of legitimate refunds claimed by taxpayers.

Refunds pose an inherent risk to revenue collections, which can only be mitigated by a range of risk mitigating interventions that should be undertaken by tax administrations; on the other hand, legitimate businesses who have submitted valid refund claims rely on the prompt payment of such refunds which if delayed, may have a devastating impact on their very existence. Striking a balance between these 2 competing realities for tax administrations is an ever-present challenge which is exacerbated by the ever-increasing reality of fraudulent refund claims.

This paper considers refunds from the perspective of both tax administrations and taxpayers. It provides an overview of the reasons for the existence of refunds and discusses the various factors that should be taken into account in the administration thereof². Due to the number of papers that have been published on this particular topic, this paper does not intend to repeat what has already been published. It is therefore strongly recommended that these papers are read. (For ease of reference, see footnote 3.)

A key feature in a VAT/GST system is that the tax is intended to be borne by the end consumer, and to a limited extent by VAT-registered businesses, where both the policy intent and enabling legislative provisions provide for exemptions and/or limitations on input tax deductions. Further to this, an integral part of an efficient VAT system is the use of VAT-registered businesses to collect VAT from consumers³ and paying such VAT to the tax administration.

Based on the fundamental principle of neutrality, VAT should not be a cost in business-to-business transactions⁴. Just as the VAT received from customers is not income earned by the VAT registered business (because it must be paid to the revenue administration) (see footnote 6), so too the VAT reported to the revenue administration in respect of a business-to-business transaction is not tax 'revenue' because it must be repaid to the business customer through a

¹ The terms "value added tax" and "VAT" are used to refer to any national tax by whatever name or acronym it is known such as Goods and Services Tax (GST) that embodies the basic features of a value added tax, i.e. a broad-based tax on final consumption collected from, but in principle not borne by, businesses through a staged collection process, whatever method is used for determining the tax liability (e.g. invoice-credit method or subtraction method). [Home | OECD iLibrary \(oecd-ilibrary.org\)](https://www.oecd-ilibrary.org/)

² [How to Manage Value-Added Tax Refunds in: IMF How To Notes Volume 2021 Issue 004 \(2021\)](#)
[VAT Refunds: A Review of Country Experience; Graham Harrison and Russell Krelove; IMF Working Paper 05/218; November 1, 2005](#)

³ VAT may be separately added to (VAT-exclusive) prices at the time of sale or factored into (VAT-inclusive) prices. It may also be legally imposed on businesses (the commonest approach) or imposed on customers but with a collection responsibility imposed on businesses (less common). Whichever approaches are taken, the tax fraction of the money collected by the business is not part of its income from the sale because the business is required to pass the VAT proportion of the price to the revenue administration.

⁴ [Home | OECD iLibrary \(oecd-ilibrary.org\)](https://www.oecd-ilibrary.org/)

deduction against its output tax liability. Where that deduction results in a negative amount, the revenue administration is generally obligated to pay a refund.

It follows that any VAT borne by a VAT registered business (the taxpayer) that is in excess of the VAT collected in respect of sales made by that taxpayer, will result in a credit (i.e. refund) due to the taxpayer. The prompt and full cash/electronic payment of VAT refunds is necessary to ensure that the VAT achieves its intended purpose of taxing final consumption. Where the VAT is not refunded at all, businesses may have to resort to recovering such unrecovered VAT from its customers where the business cannot afford to fund such VAT cost from its profits. In addition, in those instances where the VAT refund is delayed, businesses who incur expenses until such time that the VAT has been refunded (for example, interest charges) may recover such additional costs in the form of an increase in the price of the goods or services supplied to customers.

The VAT Value Chain (VVC)

The VVC encompasses the core functions undertaken by a tax administration when administering a VAT. Set out below are the various elements of the VVC and the proposed minimum activities that are required to be undertaken by tax administrations with particular reference to the risks posed by the processing of refund claims.

- I. VAT registration is a high-risk activity. It is the first engagement that a tax administration will have with potential taxpayers who have requested to register for VAT. It is essential that the information requested to be provided by the taxpayer when applying to register can be verified, preferably through 3rd party data sources, to improve the likelihood of legitimate taxpayers being registered and thereby being given access to claim VAT⁵ incurred.

The following information should at a minimum be requested at the time of application:

- The name and address of the business
- Email address and website where applicable
- Contact details of the designated representative person
- Names, address and tax reference numbers of owners/shareholders
- The type of business entity (where applicable)
- The date that it commenced trading
- The date that it is liable to register for VAT
- Any reference number with another regulated authority
- Bank account details
- The sector in which the business activities fall e.g. agriculture, construction etc.

⁵ 'Pay-only registrations' – a regime that provides for a registered VAT person to only declare the VAT on sales made in a particular jurisdiction. In this regime, the VAT incurred on any expenses incurred in the particular jurisdiction is not allowed as a deduction. This regime is prevalent in jurisdictions that require non resident suppliers of goods and services to register and account for VAT on sales made to customers in that jurisdiction.

- The value of expected sales to be made in a predetermined period e.g. 12 months from date of registration

It is proposed that taxpayers are compelled to update their registered particulars within a specific time of any changes being made.

Depending on the relevant legislative provisions, VAT registration applications may also require in-depth evaluation to determine whether the applicant qualifies to register. Where the application is successful, the tax administration should notify the taxpayer and such notice should at a minimum, contain the VAT reference number as well as the effective date of registration.

- II. The electronic filing of VAT returns allows tax administrations to continuously monitor non-compliance at an individual taxpayer level and to promptly react when non-compliance is identified e.g. non filing of returns / non-payment of the VAT liability as reported on the relevant taxpayer's VAT return. The data obtained from the submission of VAT returns should be continuously analysed in order to provide in depth insights into *inter alia*, sectoral trends and the attendant risks and opportunities to revenue collection as well as taxpayer compliance behaviour. These insights should then be used as input into the risk identification process.

Valuable data insights pertaining to refunds in particular include -

- The value of refund claims made per period
- The value of claims processed per period
- The value of sales (for all rates of VAT) per period
- The value of expenses per period

- III. The prompt identification of risk e.g. fraudulent refund claims, fraudulent schemes, the over or invalid deduction of VAT incurred on expenses and/or under declaration of VAT due is crucial in protecting revenue. In order to improve the likelihood of correctly identifying taxpayer's returns that may pose a risk, it is recommended that the risk identification methodology is continuously updated with new identified risks. It is also recommended that taxpayers who are in a constant refund position e.g. exporters are validated for a specific period of time – such validation will then ensure that the affected taxpayers are not continuously identified as posing a risk whenever a refund return is submitted.

It is furthermore recommended that the risk identification processes and the relevant algorithms /thresholds etc remain classified and limited to a small number of resources to limit the possibility of such rules being leaked. Once the cases are identified as posing a possible risk, the decision must then be taken regarding the type of enforcement action to be followed.

- IV. VAT deregistration may be regarded by some tax administrations as not being a core function, particularly where resource constraints are prevalent. Furthermore, the deregistration process may not result in additional revenue being collected. Tax

administrations with limited resources may therefore be inclined to ignore this function in favour of better utilising resources in revenue generating activities. It is recommended that regular monitoring of the VAT register is undertaken to identify those registrants who are continuously non-compliant (i.e. continuous outstanding returns or incorrect submission of nil returns) as opposed to those registrants who no longer meet the requirements of being registered, the latter having been confirmed by 3rd party data. It is therefore only in the latter case that registrants should be deregistered.

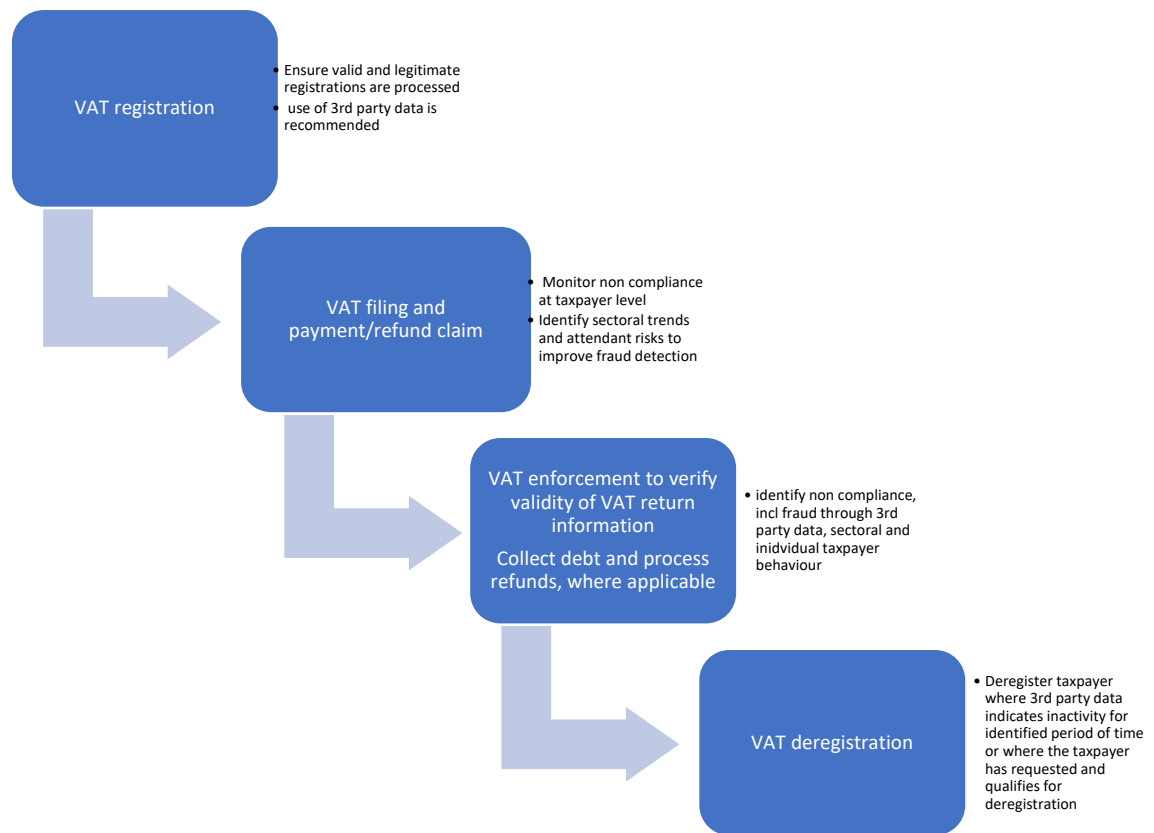


Figure 1 The VAT Value Chain

The reality of fraud⁶

For a refund mechanism to be credible, the tax administration must ensure that it is equipped with the strategies, processes, and abilities needed to identify VAT refund fraud. It must also be prepared to act quickly to combat such fraud/schemes⁷

Whilst a VAT is premised on the principle that refunds are paid timeously, the reality of fraudulent refund claims as well as the claiming of input tax deductions/credits to which the registered business is not entitled that result in a refund claim, is a constant reality and burden

⁶ [r-de-la-feria_a-schoeman.zp103860.pdf \(up.ac.za\)](#)

⁷ [How to Manage Value-Added Tax Refunds \(imf.org\)](#)

faced by tax administrations. Balancing the efficient and timeous processing of refunds with the risk of refunding fraudulent and non-qualifying refunds is a difficult balancing act for tax administrations. Insufficient resources to identify possible non-compliance or suspicious refund claims, high claim volumes, financial constraints, and a lack of data capacity and capability are a few of the factors that negatively impact the timeous payment of refunds.

A balancing act

Despite all these obstacles, the implementation of a VAT requires tax administrations to develop solutions to timeously process refunds (where the legislative provisions allow for such) so as to ensure that the VAT achieves its intended purpose of taxing final consumption. Failure by tax administrations to timeously pay refunds without drastically increasing the compliance burden for taxpayers claiming such refunds continues, for the most part, to be an elusive goal. What is however crucial (and beneficial) to both taxpayers and tax administrations is to ensure that refunds are timeously paid, which may have a positive impact on increasing the likelihood of business sustainability and continuity, and ultimately result in additional tax revenue being collected.

The Impact on business

Businesses experiencing cash flow constraints would depend on the prompt refunding of refund claims in order to assist such business in remaining operational; The non or late payment of refunds may also result in businesses requesting temporary credit facilities from financial institutions and thereby incurring additional expenses such as interest and overdraft fees. Such additional expenses may be the final death knell for already struggling cash strapped businesses.

Processing of refund claims

There are various mechanisms utilised by tax authorities to process a claim submitted by a taxpayer or other person who is entitled to a refund. These include –

- I. The cash (or electronic) payment of the full value of the refund within a specified time;
- II. The partial or full offsetting of refunds against a taxpayer's other outstanding or future tax liabilities;
- III. delayed payment of the refund;
- IV. the issuing of government bonds or tax certificates in lieu of refunds that are due.

The electronic payment of qualifying refunds into the registered banking account of the taxpayer is obviously preferred by taxpayers. Similarly, the non-payment of refunds as well as the offsetting of refunds in future tax periods is not recommended both in terms of the overall VAT design and also due to the negative impact that such non-payment has on the registered business.

2. The reality of the existence of refunds in a VAT

In order to determine its VAT liability, a taxpayer is generally required to submit a VAT return on predetermined dates, for a specific period, indicating at a minimum, the value of its standard and zero-rated sales and the VAT that is due in respect thereof. The taxpayer is also entitled to deduct the VAT incurred on qualifying purchases. Where the VAT collected exceeds the VAT incurred, the taxpayer is required to submit its return and pay such VAT to the tax authority within the requisite time. Conversely, where the VAT incurred exceeds the VAT collected, the taxpayer will submit a return reflecting the refund that is due to it.

Factors that give rise to refunds

- Exports

In line with the principle that VAT is a consumption tax due in the jurisdiction of consumption, it follows that exports should be zero rated (i.e. in accordance with the destination principle) whilst imports should be taxed at the standard rate.

A VAT refund would arise where exporters incur local standard rated VAT when purchasing goods and services required to produce the exported goods or services. As there would be zero VAT levied on the exported sales, the VAT incurred should qualify for an input tax deduction, which will result in the exporter claiming a refund from the tax administration.

- Zero rating local consumption

The rationale for zero rating the local supply of goods and services is generally based on the principle that such goods qualify as ‘merit goods’ and as such are deserving of a different VAT rate. Studies have however shown that the zero rating of local supplies benefits the more affluent in society due to the fact that there are higher levels of consumption by this sector of society.⁸

It is recommended that the policy rationale for zero rating locally consumed goods and services is reconsidered with a view to identifying whether the original policy intent is being achieved and whether there are viable alternative options that would better achieve the original policy intent.

- Capital expenditure

Newly established businesses will generally incur capital expenditure which may in all likelihood be incurred prior to any income being earned or which may exceed any income that has already been earned. In addition, established businesses may incur capital expenditure due for example to expansion or replacement of capital goods. Capital expenditure may also extend to the importation of goods. The VAT on such expenditure should be allowed as a deduction,

⁸ [REDI3x3 Working paper 3](#)

together with the VAT incurred on importation, and where such VAT exceeds the taxable income earned, a refund will be due to the taxpayer for the particular period.

- Seasonal expenditure

VAT refunds may occur at certain times during the year when the VAT incurred on expenses exceeds the VAT collected on sales. Common examples include stock purchases and the importation of goods for future high trading periods. Farmers and other primary producers also tend to have seasonal imbalances between high revenue tax periods and high expenditure tax periods.

- Multiple rates

Multiple rates present compliance challenges for both tax administrations and taxpayers alike. The imposition of VAT at a higher rate on the acquisition of goods/services that are ultimately used to produce goods/services that qualify to be supplied at a reduced rate, would likely result in the taxpayer submitting a refund claim.

- A refund scheme for tourists

In this instance, in line with the consumption principle, and where legislative provision is made for such dispensation, the VAT incurred on goods purchased and subsequently exported by the purchaser to a country of destination, may result in a claim for the refund of VAT incurred by the tourist. The refunding of such VAT, may, depending on the refund mechanism, fall outside the standard process provided to registered taxpayers. In this instance, it is recommended that such claims are budgeted for and subject to relevant risk processes.

- Refunds to non-established businesses as well as diplomatic missions

The refunding of VAT incurred by non-resident businesses and diplomatic missions is dependent on whether legislative provision is made for such claims. The likely impact of such refunds on the forecasted refunds value should take these claims into account, particularly where such claims fall outside of the standard refund process.

It is likely that the value of the VAT incurred by non-resident businesses would not be material when compared to that of local businesses, coupled with the fact that the destination principle should result in minimal VAT being levied on supplies made to the non-resident. Examples of VAT being incurred by non-resident businesses would be hotel accommodation and transport.

3. Mechanisms to request refunds

- a. There are various processes that have been implemented by jurisdictions for taxpayers and VAT refund claimants to request a refund of the VAT incurred. These include the submission of -
 - i. a VAT return reflecting the refund due
 - ii. a specific form, other than the registered taxpayer's VAT return

- iii. a letter requesting the refund addressed to the relevant department of the tax administration

- b. Submission of supporting documents

There may also be instances where the claim for the refund must be accompanied by the relevant qualifying documents substantiating the VAT incurred. In the event that the tax administration does not always review the documents that are required to be submitted, it is recommended that such requirement be reconsidered. The removal of the mandatory submission of qualifying documents would positively impact taxpayers as there would be a reduction in the taxpayer's compliance burden.

Tax administrations may request specific documentation in the event that the refund claim has been identified for audit. In this instance, it is recommended that the request for documentation should be specific to the risk being identified and be limited, as far as possible, to a reasonable amount of information to be provided. General and vague requests for information impose an unnecessary burden on taxpayers and furthermore, if not used by the tax administration, can be regarded as an effective use of both taxpayer and tax administration resources.

The manual submission of documents, as opposed to the digital transfer of documents to the tax administration, presents a risk due to the likelihood of the documents being lost or destroyed after they have been submitted to the tax administration. It is therefore recommended that tax administrations issue and receive all documentation electronically, the obvious benefit being that there is an automated audit trail of all correspondence.

4. Budgeting for refunds, including the development of a model to estimate the likely level of refunds that may be refunded in a fiscal year

(To be developed)

5. Tax Administration - Reasons for refunds not being paid timeously or not being paid at all

- a. *Cash flow limitations*

The deduction of VAT incurred by a taxpayer, which may result in a refund due to the taxpayer, can present cash flow difficulties to tax administrations. Inadequate budgeting for the payment of qualifying refunds and/or a shortage of tax revenue to process the qualifying refund are realities that are faced by tax administrations.

- b. *Refunds below a certain threshold (de minimis rule)*

To reduce the cost of administration, tax administrations may elect not to process refunds below a certain threshold. Such refunds should then be offset against future VAT liabilities.

c. Resource constraints

The inherent risks associated with refunds may lead administrations to delay refunds, particularly if they have inadequate resources, including skilled personnel, to establish an effective risk identification and management process.

The identification of risk and the tax administration's appetite for paying refunds without first auditing the claims, have an inevitable impact on the time within which refunds are processed.

d. Low compliance levels

Provision may be made for the non-payment of refunds where the taxpayer is non-compliant in respect of its VAT and/or other tax obligations. In this instance, depending on the legislative provisions, interest on the outstanding refund may not be payable on the outstanding refund.

The view may be held that the payment of refunds to non-compliant taxpayers would not encourage the regularisation of non-compliance. On the other hand, the non-payment of refunds, where such refund is legitimately due, may have dire consequences for the taxpayer. Consideration should therefore be given to the most appropriate course of action to be taken by tax administrations which may include taxpayer education and compliance improvement initiatives.

e. Invalid taxpayer details on register

A tax administration may be unable to effect payment of a refund into a taxpayer's designated bank account if the details provided by the taxpayer are incorrect. In this instance, it is recommended that taxpayers are afforded various opportunities through designated channels offered by the tax administration to amend/update their registered particulars, together with the necessary supporting documentation and third-party validation, to enable tax administrations to effect the payment of the refund.

f. Time limitation to submit refund claims / deduct input tax

One of the mechanisms for managing the claiming and payment of a refunds is to prescribe the time period within which the refund claim must be submitted.

Whilst revenue authorities require a degree of certainty in projecting the value of their refunds to be paid in current and future periods, it is recommended that a balance is struck between the period that provides taxpayers to submit their refund claims and the certainty that tax administrators require.

In addition, legislative provisions may provide for limiting the time within which a taxpayer may deduct VAT incurred. Possible considerations include limiting the period to align with the corporate income tax prescription period or determining a period that is either in excess of or less than the aforementioned period; the reason being that expenses deducted for corporate income tax purposes should generally be exclusive of the VAT where such VAT is allowed to be deducted in the taxpayer's VAT return.

g. Payment of interest for delayed refunds

In order to achieve the VAT's overall intent, policy makers should ensure that legislative provision is made to refund legitimate refunds within a specific time period. Failure by the tax administration to refund the VAT due, should result in the payment of interest to the taxpayer. Such interest payment which would negatively impact the revenue collected in that it is a drawback on the revenue collected, in compensation to those taxpayers who were not refunded timeously. It is furthermore intended to be a deterrent to tax administrations. However, the payment of interest for the late refunding of VAT refunds may by no means be adequate compensation to the taxpayer particularly where the taxpayer is reliant on the refund for business continuity.

6. Impact on taxpayers where inefficient refund mechanisms/processes exist

Acknowledging that VAT-registered businesses play a key role in the collection of VAT emphasises the importance of an efficient and robust for managing and paying VAT refunds.

There may be systems in place to pressure tax administrators to pay the VAT refunds, but these processes are time consuming and costly.

a. Negative cashflow / Interest expense/ exchange rate fluctuations

VAT registered businesses are required to pay over VAT charged on sales despite not having actually collected the VAT from their customers at the time that such VAT is paid to the tax administration. This requirement places a strain on the cashflow of the VAT registered business as the business is required to fund the payment of VAT due.

This is further compounded when there are delays in the payment of VAT refunds. Businesses may in some instances be forced to fund the payment of VAT and the delayed VAT refunds by raising funds from external sources. This creates an additional interest expense for businesses. Businesses that are unable to raise external funding may face dire consequences, which can lead to business closure or default on its other financial commitments.

b. Costs incurred e.g. Professional services to engage with tax administration due to *inter alia* the increased likelihood of audits, follow up regarding outstanding refunds.

The processes of VAT refund verifications and obtaining outstanding VAT refund pay-outs have become very complicated and time consuming for businesses. Whilst there is an acceptance that tax administrators have to implement steps to prevent tax evasion and the payment of undue refunds, caution should be exercised in the demands placed on taxpayers to communicate and provide information to the tax authority, which may create a burden on taxpayers' available resources.

Many businesses may therefore prefer to hire external professional service providers.

Both these options (additional resources or external professional service providers) are expensive and impose an additional cost on businesses.

- c. Impact on business – contradicts principle of VAT not being a cost to VAT registered business
 - i. Increases cost for business that –
 - will ultimately be passed on to the customer; or
 - decrease business profits; and
 - ii. results in tax cascading where customers are businesses.

7. Tax administration considerations

a. Registration risk

The registering and subsequent issuing of a VAT number requires a taxpayer to levy VAT on its taxable transactions and account for and pay such VAT to the tax administration. In addition, the taxpayer is entitled to deduct the VAT incurred on qualifying expenses. The registration process is therefore the most important line of defence against admitting fraudulent taxpayers into the VAT net.

b. Revenue risk mitigation

Efficiently identifying risk in the refund process is key to reducing unnecessary engagements with taxpayers. It is recommended that general as well as sectoral specific risks are continuously identified and implemented to reduce the likelihood of processing invalid refund claims. Engaging with other tax administrations to obtain information on current and past refund scams would assist tax administrations in pre-empting fraudulent claims being processed.

c. Resource allocation

Tax administrations should consider the adequate allocation of resources throughout the VAT value chain in order to improve service delivery and overall taxpayer experience. The use of data and automation in the value chain may assist tax administrations to effectively allocate appropriate resources. Upskilling appropriate staff would enable tax administrations to reallocate staff to different business units when required.

8. Fraudulent refund schemes

(To be developed)

9. Country experiences -

(To be developed)

10. Conclusion

(To be developed)

Annexures

Refund statistics ⁹

Set out below is a recommended list of analyses that can be performed by a tax administration as a means of monitoring VAT performance. Anomalies in refund claims and overall VAT performance can therefore be identified and action taken, where necessary.

- VAT as % of GDP
- Refunds as a % of VAT collections including import VAT
- Best practice – monitoring of refunds YoY, sectors, trends
- Analytical tools to estimate refunds for an identified period including the functionality to monitor and adjust where necessary
- Refund claims vs refunds paid (i.e. liability management)
- Highest contributing sectors in terms of value and number of claims
- Comparison to prior years of VAT refund claims and values
- Import VAT paid by importers and the impact if any on importers' VAT liability
- The impact of standard rated purchases and VAT paid on import where such results in the submission of credit returns
- Trends in VAT registration applications – nature of persons and regular monitoring of new registrants' VAT liability / refund claims
- The yield arising from VAT refund audits including the number of cases resulting in litigation and the final outcome thereof.

⁹ [RA-FIT Data 2021 - Standard Tables - ISORA \(rafit.org\)](#)

ANNEX D to E/C.18/2023/CRP.29

The use of new technologies to improve Value Added Tax (VAT) compliance

Table of contents

1. Background: sources of information on current developments on Tax Administration, VAT, and technology	2
2. New technologies to track commercial transactions and VAT data.	6
2.1. Goals, technologies, and options.	6
2.2. Available approaches to implement a national strategy.	9
3. Making VAT compliance easier through technology	15
3.1. VAT voluntary compliance and technology	15
3.2. Overview of country experiences and case studies.....	17
4. Enforcing VAT compliance via tax data analysis and digital innovations	22
4.1. 360 degree and real time analysis of VAT data.....	22
4.2. Examples of innovations on enforced tax compliance	25
5. Other issues to implement new technologies for VAT compliance: data and its use. ...	28
6. References	30

Introduction

Due to the relevance of VAT in tax revenue -everywhere, but specially in developing countries¹- and the huge amount of microdata involved for its fair and efficient administration, new technologies offer a promising field to improve VAT compliance.

Departing from the work already done to collect and review these new technologies (1), this chapter summarizes the options opened to enhance the tracking of VAT data (2), improve tax services and tax fulfillment favoring voluntary compliance (3) and exploit tax data analysis to enforce compliance (4), in an environment of high-quality data governance (5).

This paper aims to give an overview of all these topics, presenting the different options and encouraging deeper analysis by individual countries to design and adapt new technologies to improve VAT compliance, according to their particular needs, restrictions and possibilities.

1. Background: sources of information on current developments on Tax Administration, VAT, and technology

The use of new technologies to improve Tax Administration (TA) performance and VAT compliance is now clearly the mainstream, and fortunately we can count on several different sources to track the new developments around the world. This section reviews some of them that can be used as a source of information on how technologies are changing the way Tax Administrations (TAs) operate and where are they being implemented².

To begin with, the International Survey of Revenue Administrations (ISORA)³ offers free-access information⁴ on all basic features of TAs⁵ in more than 160 countries updated annually. Regarding digitalization, innovation, and new technologies, ISORA provides evidence on:

- Operational Digitalization: electronic payment ratios, electronic filing ratios for the main taxes (Income Taxes and Value Added Tax), the effective use of digital contact channels for taxpayer services, and the availability of digital tax registration channels.
- Technological Innovation: the effective use of innovative techniques and tools oriented to tax management such as data analytical science, cloud computing, artificial intelligence, distributed ledger technology (Blockchain), application

¹ According to OECD statistics, VAT accounts for around 20% of total tax revenue (including taxes and social security contributions) on average in OECD countries, while the percentage is higher in other regions as Latin America and the Caribbean (27%), Asia-Pacific (23%) and Africa (28%).

² Previous overviews of this topic are available in CIAT (2020) or OECD (2021), for example.

³ Developed by CIAT (Inter-American Center of Tax Administrations), IMF (International Monetary Fund), IOTA (Intra-European Organization of Tax Administrations), OECD (Organization for Economic Cooperation and Development), and with the collaboration of the ADB (Asian Development Bank).

⁴ Access is available at this [link](#).

⁵ Revenue collection, resources and ICT infrastructure, staff, operating metrics (registration, filling, payment, arrears, audit, dispute resolution, etc.), stakeholders' interactions, etc.

programming interfaces (APIs), digital identification technologies, virtual assistants, whole-of-government identification systems, and robotic automation of processes.

- Other innovations for compliance Improvement: cooperative approaches, behavioral insight, electronic invoicing or pre-filled tax returns, among others.
- Resources and Budget: availability and effective use of human and economic resources available to each TA.

Based on this database, the Innovation, Digitalization and Technology Index (INDITEC)⁶ provide a detailed and systemic picture of the status of tax collection agencies around the world in terms of the incorporation of technological innovations to improve tax compliance and statistical information management, the digital transformation of operational processes and the strategic orientation of available financial and human resources.

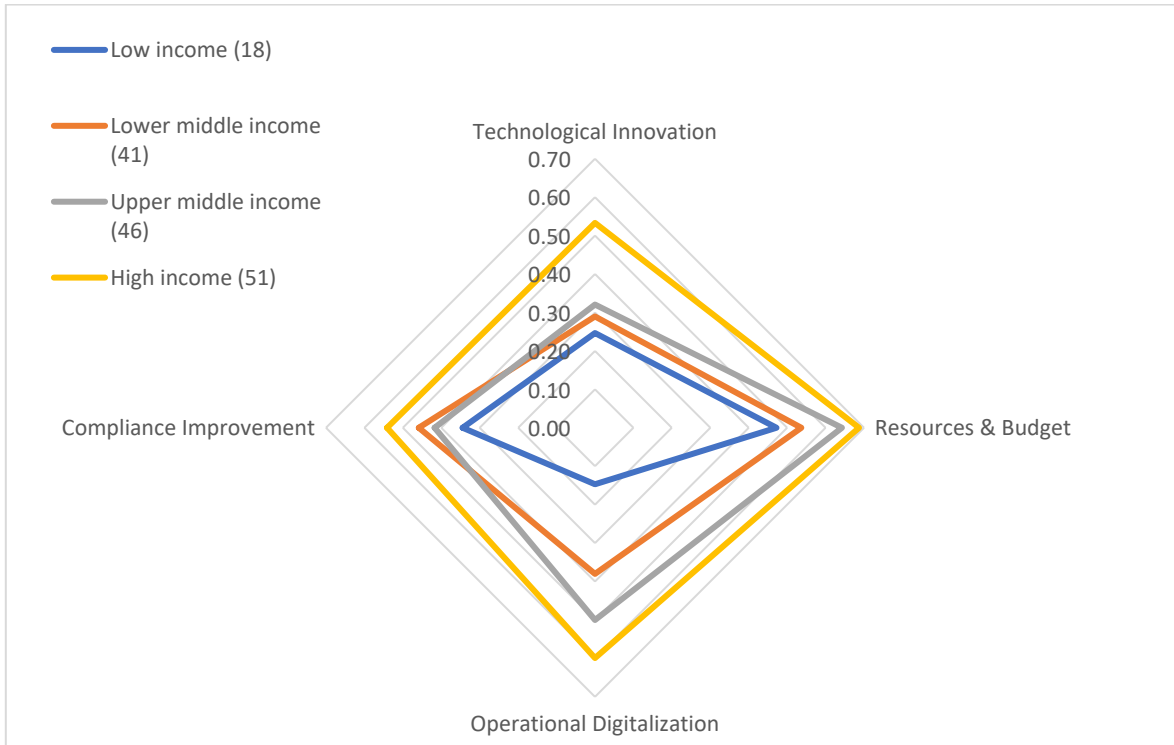
Table 1. Innovation, Digitalization & Technology Index (INDITEC) for Tax Administrations around the world (2019 data; based on ISORA Survey 2020)

Index	Jurisdiction			
	Low income (18 countries)	Lower middle income (41)	Upper middle income (46)	High income (51)
Technological Innovation	0,25	0,29	0,32	0,53
Resources & Budget	0,47	0,54	0,64	0,69
Operational Digitalization	0,15	0,38	0,50	0,60
Compliance Improvement	0,34	0,46	0,42	0,54

Source: Díaz de Sarralde, S. and Morán, D. (2022) based on ISORA

⁶ <https://www.ciat.org/tax-performance/?lang=en>

Figure 1. Innovation, Digitalization & Technology Index (INDITEC) for Tax Administrations around the world (2019; based on ISORA Survey 2020)



Source: CIAT (2022) based on ISORA

Table 1 and Figure 1 synthesize the overview of the use of new technologies in TAs. If the individual results are summarized according to the income level (World Bank classification criteria), a clear positive association can be detected, where the average values grow with income and reach their maximum in the group of High-Income countries, being the gaps most noticeable with regard to the dimensions of technological innovation and operational digitalization.

OECD's Inventory of Tax Technology Initiatives (ITTI), is another essential source of information, containing evidence on technology tools and digitalization solutions implemented by tax administrations⁷. Specifically in relation to VAT, the ITTI⁸ database can assist with better understanding on how Administrations and policy makers are increasingly

⁷ Currently 80 countries have filled the survey. ITTI has been put together by the OECD with the assistance of the ISORA Partners (the Inter-American Center of Tax Administrations, the International Monetary Fund, the Intra-European Organisation of Tax Administrations and the OECD), the Asian Development Bank, the African Tax Administration Forum, the Cercle de Réflexion et d'Échange des Dirigeants des Administrations fiscales, the Commonwealth Association of Tax Administrators and the Study Group on Asia-Pacific Tax Administration and Research. Available at <https://www.oecd.org/tax/forum-on-tax-administration/tax-technology-tools-and-digital-solutions/>

⁸ <https://www.oecd.org/tax/forum-on-tax-administration/tax-technology-tools-and-digital-solutions/value-added-tax.htm>

looking at the opportunities offered by digitalization to help reduce their VAT gap, including by:

- Increasing electronic recording and/or reporting requirements on transactions for example through requirements to use e-invoices, to store transaction information on approved devices, or to provide tax administrations access to invoice information electronically.
- Developing new approaches to VAT collection on online sales, in particular by imposing collection obligations on digital platform operators for the VAT on e-commerce sales that are carried out on their platforms.
- Enhancing risk assessment through the incorporation of a greater range of data sources and the use of new analytics tools including, in some cases, the use of artificial intelligence (AI).
- Improving online services to make it easier for taxpayers to understand their tax obligations, to interact with the tax administration and to report their activities that are subject to VAT. This can include providing third parties with software that allows them to embed tax services and processes in the natural systems used by businesses.

Additionally, to these benchmarking tools, TAs digital maturity models have been developed to assist TAs in self-assessment or experts assisted assessment of their organizations. For example, OECD's Digital Transformation Maturity Model⁹, developed in 2021 and updated in 2022, explore six key building blocks of future tax administration (Digital Identity; Taxpayer Touchpoints; Data Management and Standards; Tax Rule Management and Application; New Skill Sets; and Governance Frameworks), establishing for each of the themes, descriptor of maturity classified into emerging, progressing, established, leading and aspirational¹⁰.

In its turn, IDB's Digital Maturity Index (DMI)¹¹ aims at evaluating, in a standardized form, the efforts carried out by TAs to transform themselves into digital institutions and providing a roadmap for those responsible for tax collection to advance the digital transformation process. DMI identified that the best practices are based on the following principles: Data enters the system only once (data-only-once); Data is managed and processed centrally for various products and services (single source of truth); Data travels and is stored on digital media (paperless); and Information is received and processed in real time (real time). Under these principles and best practice experiences, the index builds a scale with four levels of maturity: beginner, intermediate, advanced, and best practices. The DMI dimensions are

⁹ <https://www.oecd.org/ctp/administration/digital-transformation-maturity-model.htm>

¹⁰ This model could be complemented by the Analytics Maturity Model, developed by the Analytics Community of Interest in the Forum on Tax Administration (FTA) -together with the FTA Secretariat-, to facilitate self-assessments by tax administrations globally of their maturity in the area of analytics. This set of products developed by the OECD could be grouped in its Tax Administration 3.0 Action Plan. OECD (2020, 2022a). Additionally, different Data Governance maturity models have been developed and could be applied to Tax Administrations, see, for example, CIAT (2022) Data Governance for Tax Administrations: A Practical Guide.

¹¹ <https://blogs.iadb.org/gestion-fiscal/en/digital-maturity-index-how-to-measure-digital-transformation-progress-in-tax-administrations/>

grouped, on the one hand, in the enablers of the digital transformation process, such as the country's digital environment and the resources available to the TA. On the other hand, the model group the digital transformation under the information process approach, the collection of data, and the generation of digital products and services.

Finally, other well-known more general tax administration's assessments tools, as TADAT (Tax Administration Diagnostic Assessment Tool)¹² and Tax DIAMOND (Development of Implementation and Monitoring Directives for tax reform)¹³, include valuable information about tax administration's digitalization and ICT developments in some of their sections.

All these developments offer TAs some tools for benchmarking, self-assessment and good practices in the field of new technologies and digitalization, the next sections will deepen in the key stages of an efficient strategy to take advantage of that innovations to improve VAT compliance.

2. New technologies to track commercial transactions and VAT data.

The cornerstone of VAT's administration and control, is the reliable, timely and complete knowledge of commercial transactions, minimizing, at the same time, compliance costs for taxpayers.

Traditionally, the control of these market operations rested on paper-based invoices, bookkeeping requisites, information obligations by taxpayers about their transactions, analogic auditing of this information and control of point-of sales. Innovations that digitalized the registration of transactions and its transmission to TAs have the potential to transform radically VAT's administration, improving both taxpayers experience and TAs capabilities. In this section we will review the different options available, including e-invoicing, e-reporting, digital cash registers, products and services classification, e-solutions for e-commerce and low value imported goods taxation, etc.

2.1. Goals, technologies, and options.

The first thing to take into account is that there is a nominative or terminological debate around the different innovative technologies that have been introduced to facilitate digital record of transactions, to allow the transition from paper-based invoicing systems to electronic invoicing and how to use it all for a better tax administration¹⁴. This debate has run parallel to the diverse trajectories and country experiences during this journey, adapting each of them to their own restrictions, business environment and legal framework. Our approach is not going to focus on solving this debate, neither to advocate to a one-size-fits-

¹² <https://www.tadat.org/home>

¹³ <https://www.taxdiamond.org/Authentication/Login.aspx>

¹⁴ See, for example, pages 13-14 of OECD (2022b). The results of the survey quoted in this paper show that even if the majority of TAs identify the e-invoice with a structured data set allowing for automated digital data processing, still many of them indicated that images of paper documents, like PDFs, could be considered to be an e-invoice.

all solution, but to highlight desirable goals and, according to them, raise the options available to help each country to design its own national strategy.

The starting point of the use of new technologies to improve VAT's administration is to get access to the information on sellers and buyers' transactions in a reliable and timely way, minimizing compliance costs, promoting voluntary compliance and making easier control and enforced compliance when needed. To reach these goals it is recommended to implement a technological system that provides a digital identification and electronic validation/signature of the subjects involved, tamper-proof digital register of transactions and secure digital communication of the information. And currently, three options, not necessarily mutually exclusive, are being implemented. Departing from the point of view of the tax administration, these options may be label -for the sake of explanation- as: e-invoicing, e-reporting and digital cash registers.

In an e-invoicing system taxpayers are required to issue a structured -according to a machine-readable standard- electronic invoice with a specific format established by the authorities and the e-invoice (or a set of data from it) must be transmitted to the tax administration¹⁵.

These would be its basic characteristics, even if the system could vary in many different aspects:

- a) the set of taxpayers involved, on voluntary or mandatory basis.
- b) the format of the e-invoice¹⁶.
- c) the way in which it is issued (web services provided by the tax administration and or private authorized services) and "travels" from the seller to the buyer, and to the tax administration (with or without previous authorization or clearance); and
- d) the moment in which the tax administration receives the information (prior to its issuance, as it takes place, or shortly thereafter).

E-reporting could be described as any digital reporting system that does not require the existence of a predefined e-invoice (even if this e-invoice could exist in some systems, especially if it is used a broad definition of it, including unstructured ones like PDFs, digital images, scanned paper invoices, etc.) but focus on establishing the obligation to transmit digitally a set of data of the transactions that is relevant to the tax administration, periodically or in real time.

Digital (or electronic) cash registers are the evolution of traditional cash registers that began to be used for tax control purposes of the points of sale (under different names as fiscal registers or fiscal printers), evolving to include a device where each and every sale is registered in a way that identify digitally the seller and the details of the transaction, that

¹⁵ This terminology can be found in CIAT and IDB (2018) and European Commission (2022), for example.

¹⁶ UN/CEFACT cross-industry invoice (CII), the OASIS UBL (ISO/IEC 19845) International Standard, and the European standard on e-invoicing (EN 16931) which was developed and published by the European Committee for Standardisation (CEN), are among the standard formats used -OECD (2022b)- but many countries have adapted and developed their own formats to domestic requirements and legislation -CIAT and IDB (2018)-.

cannot be erased, and that is accessible to the tax administration, even, in the most advanced systems, on-line in real-time basis.

All the options offer tax administrations the possibility to access to better and faster information for VAT management and control but differ in the degree of information collected and the implementation process, as well as in the complementary advantages that could associated with them.

E-invoicing system would provide the maximum amount of information while minimizing the possibility of errors¹⁷, as the information contained in the invoice will be transmitted automatically to the tax administration: the document is the same for seller, buyer, and tax administration. At the same time the process of implementation of the system may foster digitalization and innovation of the economy and businesses in general -encouraging the adoption of better business management processes, increasing IT capacity, promoting digital innovations as electronic signature, facilitating the standardization of electronic relationships among businesses and customers and the e-commerce in general, and minimizing the use of paper-. Once implemented, the system would reduce compliance costs (decreasing invoice processing costs and processing errors, allowing the removal of other burdensome tax reporting and compliance regimes, etc.) and foster formalization. The information collected could be used to provide further services, as we will survey in the next sections.

E-reporting systems do not require to transform the legislation and business practices on invoicing and could provide timely the basic information needed for tax administration and compliance purposes. On the other hand, this option does not offer (at least not at the same degree) the other advantages enumerated for e-invoicing¹⁸.

Finally, digital cash registers focus only on the retail stage and require an additional investment in hardware. Consequently, their potential to improve VAT administration and to provide additional advantages and services have a more limited range. In general, this was the first system introduced in most countries and its use can be simultaneous to the others, even if the maturity of e-invoicing systems, reaching the retail sector and business to consumer (B2C) operations, could leave to its substitution.

The choice among the above-mentioned options to improve control and information on commercial transactions and VAT administration is affected by each country particular circumstances -including the degree of technological maturity, business environment and legal framework- and temporal goals -short-term solutions or medium and long-term

¹⁷ Always depending, of course, on the validation rules applied to the process of e-invoice issuing.

¹⁸ In case the authorities plan to move to a e-invoicing system in the future, the potential duplication of efforts should be also taken into account.

strategies¹⁹. The next section provides more information on implementation and country experiences to help to evaluate the best scenario for each country²⁰.

Another specific area where technological innovations are fundamental to improve VAT compliance and administration is e-commerce of digital goods and services and low-value imports of goods. The global policy dialogue organized by the OECD identified internationally agreed rules and mechanisms that allow governments to secure important VAT revenues on e-commerce and to ensure a level playing field between e-commerce and traditional businesses, without stifling innovation and economic growth²¹. Of particular relevance in the context of this technology-oriented report is that the recommended rules and mechanisms promote the design and implementation of a simplified registration and collection regime via a secure, user-friendly online portal through which non-resident suppliers and digital platforms can register for VAT and manage their VAT obligations. The development of an IT infrastructure for a simplified VAT compliance regime could be done by the tax administrations themselves or could resort to digital solutions developed by other entities²². Over 90 jurisdictions around the globe have implemented VAT reforms directed at digital trade based on these recommended approaches.

2.2. Available approaches to implement a national strategy.

Given the already cited ambiguous use around the world of some terms that define the strategies previously exposed, it is not easy to synthesize the overview of its implementation. Fortunately, we can resort to ISORA for an approximation good enough. Following the Overview published by CIAT²³ and based on ISORA, the implementation of electronic invoicing and its requirement as a mandatory tool for recording sales and other transactions is one of the most important innovations in the fight against tax fraud. Of all the countries in

¹⁹ Along the technical considerations, attention should be given to the collaboration with private sector, considering, for example, ICC (International Chamber of Commerce) set of Practice Principles for the Implementation of Continuous Transaction Controls (<https://iccwbo.org/news-publications/policies-reports/icc-continuous-transaction-control-ctcs-practice-principles/#single-hero-document>). These principles aim at: consider the need for balance between the legitimate interests of tax collection and economic growth; ensure efficiency and maximum benefits for both the private and public sectors ('Provide data only once' principle; Consistency; Interoperability; Harmonization; Robustness and continuity); communicate a holistic and long-term strategy embedded into a broader strategy of the digitalization of the public administration; stimulate cooperation; facilitate possible changes; provide data protection and privacy; and ensure non-discrimination, considering and minimizing trade impacts.

²⁰ From the international perspective, some degree of harmonization should be encouraged and promoted in order to reduce compliance costs.

²¹ Further guidance on the design and implementation of these rules and mechanisms can be found in the VAT Digital Toolkits for Latin America and the Caribbean, Africa and Asia-Pacific developed by the OECD and other regional partners. For example: <https://www.oecd.org/tax/consumption/vat-digital-toolkit-for-latin-america-and-the-caribbean.htm>

²² As the Digital Economy Compliance (DEC) software, developed by CIAT with the support of NORAD (Norwegian Agency for Development Cooperation). This open source and free software offers a simplified voluntary mechanism for registration, declaration, payment and communication of companies operating without a physical presence in a country (<https://www.ciat.org/the-dec-tool-digital-economy-compliance-tool-adds-new-functionalities/?lang=en>). Aligned with the OECD VAT toolkit, DEC completed its implementation in Bolivia, Guatemala and Nigeria, and it is planned to be implemented soon in Dominican Republic, Honduras, Panama and five Pacific Islands

²³ Morán and Díaz de Sarralde (2021), page 71.

ISORA, 32.1% of them have a mandatory electronic invoicing system for some or all taxpayers registered by their respective TAs. CIAT countries lead, by groups of countries, in the degree of adoption of this tool with 48.6% of the total, while in LAC this percentage reaches 41.9% (Figure 2). Unlike most technological innovations for tax management, the implementation of electronic invoicing is not led by high-income countries (25.5%), since its dissemination and incorporation are currently more intensive among middle-income countries (39.0% Lower-Middle Income; 37.0% Upper-Middle Income). Looking ahead, electronic invoicing seems to continue to be a higher priority for lower-income countries, given its potential as an instrument for reducing tax evasion.

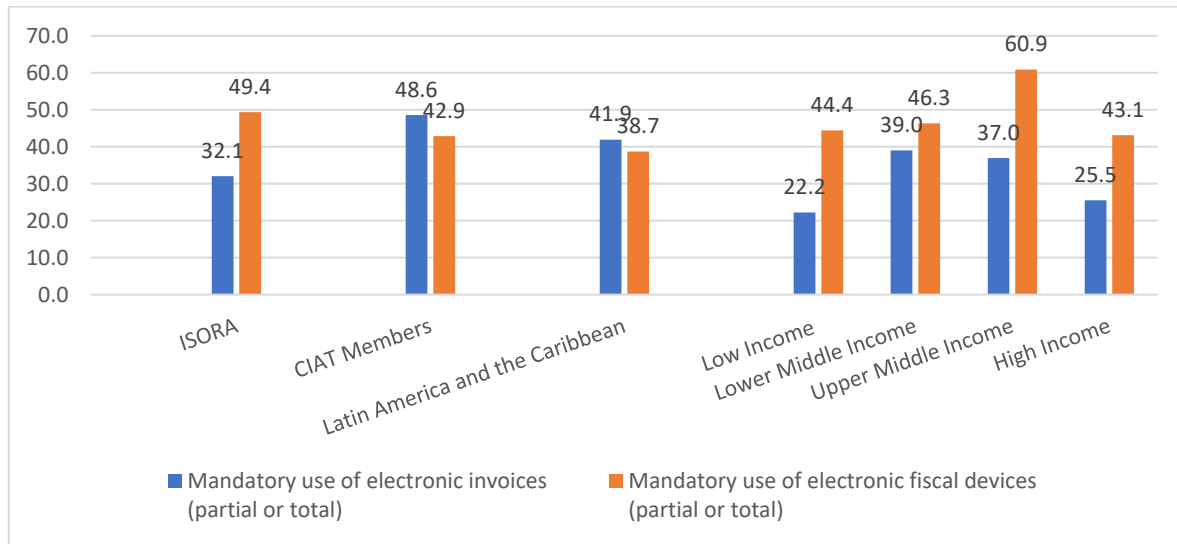
Other techniques, aimed at the same objective of improving levels of voluntary compliance, are represented by the requirement by TAs for taxpayers (sellers of goods and services) to record their transactions through the use of electronic fiscal devices or duly certified cash registers. In ISORA this practice is observed in almost half of the cases, while in CIAT in 42.9%, with relatively similar values for other groups of countries according to income level, except for the Upper-Middle Income with a use of these elements in more than 60% of the cases (Table 2).

Table 2. Mandatory use of electronic invoices and fiscal devices. (2019 data; based on ISORA Survey 2020)

Country Groups	Mandatory use of electronic invoices (partial or total)	Mandatory use of electronic fiscal devices (partial or total)
ISORA	32,1	49,4
CIAT Members	48,6	42,9
Latin America and the Caribbean	41,9	38,7
Low Income	22,2	44,4
Lower Middle Income	39,0	46,3
Upper Middle Income	37,0	60,9
High Income	25,5	43,1

Source: Morán and Díaz de Sarralde (2021).

Figure 2. Mandatory use of electronic invoices and fiscal devices. (2019 data; based on ISORA Survey 2020)



Source: Morán and Díaz de Sarralde (2021).

The implementation of national systems of electronic invoicing in Latin-America²⁴ is a well-known trend, with early adopter and leader countries in the use of the technology to reduce compliance costs and tax fraud, like Chile (2003), Brazil (2006), Mexico (2005, 2011)²⁵ and Argentina (2006), with adoption levels close to a hundred per cent of all registered invoice issuers, are being followed closely by Ecuador (2016), Uruguay (2012) and Peru (2016) that have significantly expanded the number of issuers and documents, with only small taxpayers still using paper-based invoices.

In the last years other countries have joined the club: Colombia (2018) put in place a new operational model implementing an pre-clearance model supported by a cloud based application hosted by the tax administration that reached mandatory level for all large taxpayers by the end of 2019; Costa Rica (2017) went into full production establishing a mandate for all taxpayers to use the system currently handling over a hundred million documents per month; Guatemala (2018) implemented a new operational model that replace the old GFASE based with one that would match the tendency elsewhere in Latin-America where all documents are transmitted to the tax administration; the Dominican Republic (2019), Panama (2018) and Paraguay (2018) started their own systems with all three countries conducting and successfully concluding their pilot projects and got ready for general production in a voluntary phase; Bolivia, El Salvador, Cuba and Honduras have ongoing projects for the development and adoption of their own national systems.

²⁴ CIAT and IDB (2018); and Raúl Zambrano (update version, mimeo).

²⁵ Some countries, like Bolivia, Colombia, México and Ecuador, changed their models along these years giving solution to different problems (low scale of adoption, low quality of information, technological problems).

We could say that e-invoicing in Latin America have created a snowball effect and nowadays is a symbol of modernity. Even with different clearance models and role of private solutions, e-invoicing in this area is, without exceptions, a national project, written, directed and co-starred by the tax administration. The tax administrations receive all invoices issued by taxpayers, e-invoices comprise all information of the registered operations and can be used by taxpayers only after cleared by the tax administration. In most of European and Asian countries, e-invoice involves basically only companies and their mutual relationship, and the tax administrations only receive an extract of the information registered on the invoices.

The Latin American experience allow to draw some valuable lesson on how to structure the process taking into account different elements: technology; stages of implementation; taxpayers involved; and communications strategy.

A prerequisite is to assess the adequacy of the infrastructure of the tax administration, the capacity of service by solution providers and the adequacy of communication infrastructure. After that, tax administrations need a well-defined pilot phase (including big companies and problematic sectors, and ideally a whole supply chain, but keeping small the number of taxpayers involved). Usually, the main difficulties are not strictly technological, but affecting the adaptation of company's invoicing processes. If the pilot phase has been successful, the voluntary adoption phase can be launched, always giving enough time in advance to adapt to the new regulation. During this phase is essential to be prepared for bottlenecks (and if needed, to limit the access to the system in order to avoid overloads). There is no rule for the duration of this phase, in Brazil, it took less than two years, while in Chile more than ten years. One conclusion is unanimous though: without mandating, there are a number of companies that will not become users of the system, for many different reasons (blurred benefits and management of change difficulties, unclear or very complex laws, unfavorable cost/investment ratios and lack of knowledge).

In advance of the mandatory phase is important to promote extensive publicity with enough time of antecedence, opening the production environment for all taxpayers reached by some legal obligation on the same date that this obligation begins, and the test environment long enough before this date. Extra care must be taken with the starting dates of obligations, avoiding critical commercial and accounting periods.

Throughout all these phases, the times need to be long enough to do a quality work both for taxpayers and for tax administration, taking always into account its impacts on businesses' invoicing systems, which are at the core of their commercial relationships with customers and suppliers.

Regarding the taxpayers involved, different considerations should be made for business to business (B2B) and B2C companies. In the B2B sector, when a company is obligated, its entire sector should ideally be reached at the same time. If we cannot avoid defining a threshold²⁶ in terms of the size of the company (expressed by turnover) that separates those who need to adopt the system, it could be reduced every year to make the extension automatic. All establishments of a company should be included simultaneously, and

²⁶ Thresholds are always problematic in terms of design and implementation.

companies involved should completely stop using paper invoices²⁷. Of course, the beginning of the obligation must be published sufficiently in advance and some sectors could be left out, for pragmatic reason as semi-industrial activities executed by artisans or individual farmers and fishers.

Normally taxpayers who operate only on B2C operations are around 80% of the total number of VAT taxpayers, and the total number of invoices issued on B2C operations are 8 to 10 times greater than the number of invoices issued on B2B operations, making the mandatory phase for B2C taxpayers an important and difficult step where simple and free technological solutions are essential. Most taxpayers are small and medium businesses, consequently, it is very likely -depending on national VAT legislation- that below a threshold of economic size there will not be mandatory use and other solutions have to be considered (special tax regimes, cash registers, point of sale -POS- controls, etc.).

In general, it should be taken into account that, even if sometimes unavoidable, segmentation of e-invoicing implementation by economic sectors or business size could increase complexity, aiming to minimize the coexistence of different invoicing regimens.

Finally, the communication strategy is a corner stone of the process, combining a clear roadmap of the authority's plans, an extended generic message²⁸, the creation of an "e-Invoice Brand" and a visual identity, the establishment of channels for consultation between the government, professionals, and taxpayers, and the dissemination of specific messages for tax professionals and for information and communication technology (ICT) professionals, going much deeper than the generic information campaign.

Another geographical area where technological innovations are recently transforming the way tax administrations are tracking commercial transactions to improve VAT compliance is the European Union (EU)²⁹. On 8 December 2022, the European Commission proposed a series of measures to modernize and make the EU's Value-Added Tax (VAT) system work better for businesses and more resilient to fraud by embracing and promoting digitalization³⁰. Among other reforms, the EU is promoting a move to real-time digital reporting based on e-invoicing for businesses that operate cross-border in the EU. The new system introduces real-time digital reporting for VAT purposes based on e-invoicing that will give Member States valuable information they need to step up the fight against VAT fraud, especially carousel fraud. The move to e-invoicing is intended to help to reduce VAT fraud and bring down administrative and compliance costs for EU traders. It also facilitates that existing national systems converge across the EU, mitigating possible distortions of the competition, and paves

²⁷ The acceptance of e-invoices must be universal.

²⁸ This message must be adapted to the country's idiosyncrasy and the characteristic of the system implemented. For example, if the adoption of e-invoicing is a free choice for taxpayers, as is the case in the United States of America or in most European countries, the main reason for adopting the electronic invoice is economic, focusing on the savings by the issuer.

²⁹ See VAT in the Digital Age (https://taxation-customs.ec.europa.eu/taxation-1/value-added-tax-vat/digital-age_en#:~:text=On%208%20December%202022%2C%20the,by%20embracing%20and%20promoting%20digitalisation.)

³⁰ It has to be taken into account that this is an area of continuous evolution, and the EU is looking to harmonize some requirements across the region.

the way for Member States that wish to set up national digital reporting systems for domestic trade in the coming years.

The country level developments in the EU are subject to a specific legislation. As it is highlighted in OECD (2022b), there is no explicit option available for EU Member States to introduce mandatory e-invoicing requirements as a means to ensure the correct collection of VAT and to prevent VAT fraud. As a consequence, if a Member State wishes to introduce mandatory e-invoicing requirements, it must do so by requesting a derogation from article 395 of the VAT Directive, which is subject to the unanimous agreement of the Council based on a proposal from the European Commission. The framework is different for B2G transactions. According to Directive 2014/55/EU, Member States must require public administrations to accept structured e-invoices compliant with the European standard. Though not explicitly provided by the VAT Directive, the Member States may voluntarily impose a domestic obligation to use structured e-invoices for B2G transactions - European Commission (2022) -. In this context different country strategies have been developed, most of them focusing on e-reporting schemes that does not require the generalization of e-invoicing for B2B or B2C operations³¹.

Beyond Latin America and Europe there are also other significant experiences in the implementation of e-invoicing. For example, the Zakat, Tax and Customs Authority of the Kingdom of Saudi Arabia has very recently introduced Fatoora, its e-invoicing system, in one of the fastest implementation experiences³². China's State Taxation Administration (STA) is also vigorously stimulating the use of electronic invoices. On December 1, 2015, China started to promote electronic VAT general invoices nationwide, and introduced electronic VAT special invoices for new taxpayers on a pilot scale on September 1, 2020³³.

Finally, the approach based on electronic on-line cash registers has been summarized in OECD (2019). This report provides insights and lessons learned on: the broader picture as regards electronic cash registers, and the factors that tax administrations may wish to take into account when considering options; core elements of successful introduction of online cash registers, including the business case, the legal framework, stakeholder management and data protection; case studies of the implementation of online cash register systems in Hungary, Korea, Russian Federation and Slovakia; and a detailed set of recommendations and guidance for tax administrations that may wish to consider adopting and implementing online cash registers³⁴.

³¹ See, for example, the developments in Spain (Immediate Supply of Information, 2017) or Hungary (Online Invoicing System, 2018), while Italy and Greece are closer to an e-invoicing system (OECD (2022b)). Middle East/North Africa (MENA) countries are also undertaking initiatives in these areas.

³² Details of the system and its implementation can be found in <https://zatca.gov.sa/en/E-Invoicing/Pages/default.aspx> and in its presentation at the 4th BRITACOF (https://www.britacom.org/ebook/4rd_britacof/mobile/index.html), Presentations, Session 5.4).

³³ "A Study of China's Tax Environment (2016-2020)" in Best Practice of Selected Jurisdictions on Improving Tax Environment BRITACOM Secretariat (2023).

³⁴ It is also worth looking at the experience of the European countries that are implementing these systems, like Poland (<https://www.gov.pl/web/finance/fiscal-cash-registers>), Croatia (https://www.porezna-uprava.hr/HR_publikacije/Prirucnici_brosure/FiskalizacijaWEB.pdf) or Belarus.

3. Making VAT compliance easier through technology

Thanks to new technologies VAT voluntary compliance can be encouraged and facilitated, providing better information both to taxpayers and tax administration. In this process, the innovations on the tracking of commercial transactions have a protagonist role, but there are also others that help to improve all stages of the tax cycle. Next subsection will summarize the potential areas to improve VAT compliance through technology, while the second one will focus on same relevant country experiences.

3.1. VAT voluntary compliance and technology

The tax administration functions are related to the taxpayers' main obligations or duties, namely: registering as a taxpayer; the submission of returns within the required terms; timely payment of tax obligations; and accuracy and completeness of the returns submitted. Based on these obligations we may identify the areas where technology can help tax administrations to promote voluntary compliance making easier taxpayer registration and identification, offering taxpayer services, facilitating returns, payment and refunds processes, and providing dispute prevention tools³⁵.

A good international practice is the automation of the registration process (and its modification) in the taxpayer registry file. This can be done by means of a flexible procedure in the “virtual office” of the tax administration where the taxpayer’s identity is proven through the use of an advanced electronic signature, without the need for physical presence in the offices. Alternatively, it may be done through common interfaces with other government agencies involved in this process. In some cases, the physical presence is limited to the capturing of biometric data at the headquarters of the tax administration.

Additionally, the registration file may include a module referred to as “taxpayer obligations management” section containing information on each taxpayer entity’s tax obligations (e.g., filing requirements), which are based on the taxpayer’s economic, entrepreneurial or professional activities, the taxpayer’s profile or rules associated to specific regimes. Also known as the “fiscal vector,” this module may inform and make available on-line the frequency and filing dates according to each taxpayer’s different obligations (deadlines for submitting the returns, dates for making payment, dates for filing information returns, etc.). At the same time, registration should activate a secure digital channel to deal with correspondence between taxpayers and tax administration, in substitution of physical mail addresses and incorporating the possibility of uploading the data files required for tax management.

³⁵ CIAT (2020), section 2. Concerning dispute resolution, the EU experience should be also considered. EU businesses that encountered VAT issues in the EU Member States, can use SOLVIT, an online tool coordinated by the European Commission to helping solve without legal proceedings problems associated with misapplication of the EU legislation by public authorities. SOLVIT centers, which have to provide real solutions to problems within 10 weeks, are located in every EU member state, and using their services are free of charge (Source: SOLVIT. European Commission. Accessed at: https://ec.europa.eu/solvit/index_en.htm)

Assistance to the taxpayer is essential for increasing the levels of voluntary compliance. The base of the tax compliance pyramid consists of a large number of taxpayers, who require maximum assistance from the administration, with all types of services and assistance channels. The complexity of the tax rules, the need to approach the taxpayer when he needs it most, the obligation to provide truthful, reliable, and complete information to the citizen, different for each taxpayer segment and adapted to their needs, constitutes a real challenge for the tax administrations. This challenge has been favored by the upsurge of information and communication technologies, which offer taxpayers a wide range of possibilities for interaction.

Today, tax administrations count on a number of channels in order to provide service to the taxpayer. Among these are the traditional telephone assistance centers and face-to-face channels that now can be complemented with the tax administrations' Web page, 24/7 virtual office services, mobile telephone applications, electronic mailboxes, virtual assistants and chatbots guided by AI, and "Frequent Questions" systems. Add to this the frequent use of social networks by the tax administrations to disseminate messages, interact with taxpayers, receive recommendations and feedback.

Specifically for the tax returns filling stage, in addition to the information and service innovations, technology can help to reduce compliance burden offering prefilled tax returns and digital channels. All tax administrations are in the path to become paper-free organizations offering (or even making compulsory) multiple options for on-line, digital, or electronic tax return filling, saving time and reducing errors in the transcription. At the same time, improvements in the availability of commercial transactions data, in particular thanks to e-invoicing and e-reporting systems, is making possible for tax administration to offer taxpayers VAT prefilled returns and to reduce their bookkeeping and other information obligations, especially for small and medium enterprises (SME)³⁶. Complementing digital tax return channels, tax administrations are able to offer now a wide range of digital payment options, on-line, embedded in the tax returns software or through mobile devices. Ideally, these digital interfaces should offer the possibility to ask for the extension of payment deadlines or payment arranges, always according to national legislation.

A key element to improve VAT management is to increase refunds speed and certainty. The business sector makes a fundamental effort collaborating in the collection of value added taxes and for them is fundamental to receive refunds, when qualified for them, the sooner the better. The improvements in information available to tax administration thanks to the innovations explained in the previous section (e-invoicing, e-reporting) should be used to speed up refunds without risking an increase in tax fraud.

Additionally, digital innovations are key to prevent disputes. Tax administrations with access to real time information on commercial transactions and the capability to analyze it can detect in advance possible errors or discrepancies in relation to tax returns. After validating them - avoiding rising and unnecessary information requests that could increase compliance costs- TAs may contact taxpayers in the context of a cooperative compliance framework to review voluntarily their returns and correct them -or clarify the misunderstanding in a cooperative

³⁶ For bigger companies accurate pre-filled VAT returns are more difficult to generate, due to the complexity of their operations.

way-, before triggering enforce collection procedures and judicial dispute resolution procedures. At the same time, the use of digital communication channels could be used to substitute, with all the legal safeguards, physical meetings, saving time and money to both sides.

As has been highlighted previously, e-commerce of digital goods and services and low-value imports of goods is a specific area where technological innovations are fundamental to improve VAT compliance and administration. Even if this is not a topic that is going to be dealt with in depth here, it is worth it to point out again that, according to international standards and best practices, implementing the channels to make non-resident enterprises or the platforms/marketplaces used by the buyers responsible for VAT collection, declaration and payment have a significative potential to foster voluntary compliance. In the case of the sometimes-called collaborative economy, where non-resident platforms work as middle agents between supply and demand for goods and services in the national jurisdiction (secondhand markets, tourist apartments renting, transportation, etc.), receiving information on transactions from these platforms could be key to reduce informality and tax fraud in these sectors.

Finally, the quantity and quality of information available to tax administrations on commercial transactions may be used to offer a whole new set of services to taxpayers and the citizenship in general (e-invoices factoring, statistics, studies, goods and services final consumer price comparatives, etc.), new services that will be summarized in the next section.

3.2. Overview of country experiences and case studies

Tables 3 to 5 offer an overview of the degree of implementation of new technologies to improve tax compliance, in the world and across the countries, grouped by their income level.

Regarding one of the traditional processes of tax administration operations, ISORA provides detailed information about the different registration channels available to taxpayers. The results highlight that face-to-face (in-person) registration is still the channel with the highest presence (93.6%) among the countries participating in the survey, even though the availability of digital channels (online or through applications) has grown significantly compared to paper registration by postal mail (73.7% of the countries offer the computerized alternative; compared to 55.8% for paper). By income level, there are large differences in the adoption of these new online technologies, with 92.2% of high-income countries adopting them, far beyond the 38.9% of low-income countries.

Table 3. Taxpayers' Registration Channels. (2019 data; based on ISORA Survey 2020)

Country Groups	Taxpayers' Registration Channels (% of countries where available)					
	Online	Telephone	Email	Mail / post	In-person	Other
ISORA	73,7	51,9	51,9	55,8	93,6	35,9
Low Income	38,9	33,3	27,8	22,2	94,4	27,8
Lower Middle Income	58,5	56,1	51,2	46,3	95,1	26,8
Upper Middle Income	80,4	52,2	58,7	58,7	97,8	50,0
High Income	92,2	54,9	54,9	72,5	88,2	33,3

Source: ISORA

In terms of the availability of different communication channels (Table 4), in recent years digital channels (online, e-mail and digital assistance) have been increasing their presence in a large number of countries, even before the outbreak of the COVID-19 pandemic which has accelerated this movement towards non-face-to-face digital based communication and interaction solutions with the taxpayer. The “telephone/postal mail” set continued to be the main channeler of communication for taxpayer services, followed by digital channels and the face-to-face channel. By income level, it is confirmed that digital and traditional nonface-to-face channels (telephone/postal mail) are more intensively used by higher income countries, while the face-to-face channel (“in person”) reduces its degree of use as the income of the countries analyzed increases.

Table 4. Services and new technologies. (2019 data; based on ISORA Survey 2020)

Country Groups	Service channels (in % of incoming contacts)			Application programming interfaces (APIs) (%)	Digital identification technology (%)	Virtual assistants (e.g. chatbots) (%)
	Online/Digital Assist./E-mail	Phone/Mail	In-person			
ISORA	32,3	41,7	26,0	66,7	28,2	35,9
Low Income	22,5	34,6	42,8	44,4	27,8	33,3
Lower Middle Income	32,3	39,6	28,0	68,3	29,3	24,4
Upper Middle Income	30,1	41,3	28,6	58,7	28,3	26,1
High Income	36,8	45,2	18,1	80,4	27,5	54,9

Source: ISORA

In this field, the introduction of Application Programming Interfaces (APIs) stands out for its importance and diffusion. APIs allow secure digital interaction between revenue systems and external applications in banks, accounting software providers and other government agencies, and can be used to send and receive information, validate activities and facilitate operations. In this area, 66.7% of ISORA countries have this technology (in use or in the implementation phase), with significant differences between groups according to income levels (44.4% for Low Income and 80.4% for High Income). Digital identification technologies (e.g., biometrics, voice identification) have also had an acceptable diffusion among the different countries, reaching an outstanding relevance within the advanced technological solutions (28.2%). Interestingly, in this particular element there are no differences between income groups, standing at around 28%. Finally, Virtual Assistants (e.g., chatbots), are already in use or are in the implementation phase in 35.9% of the total number of countries included in the survey (156), outstanding their implementation in High Income countries (54.9%).

Regarding returns filled through electronic channels -aggregating their different possible modalities - the overall averages for ISORA are 70.7% for Corporate Income Tax (CIT), 63.5% for Personal Income Tax (PIT) and 74.1% for VAT (Table 5). The differences by income level are clear: electronic filing is around 11% for all taxes in the group of Low Income countries while for High Income countries are 84.0% (CIT), 73.2% (PIT) and 88.7% (VAT). In average, 46.2% of the countries reported offering pre-filled tax returns at least for one of the main taxes (PIT, CIT, VAT). The use of this technique to improve and facilitate voluntary compliance shows a clear increasing pattern according to income level of analyzed countries³⁷. The relative proportion of tax payments through electronic channels reaches a global average in ISORA of 57.0%, if the number of payments is taken into account, and 60.9%, if their economic value within the total collection is considered. By income level, the gap between the different groups of countries is evident, with average e-payment values growing rapidly with income level, from 26.5% of the amount and 32.3% of the value of payments received (Low Income) to 70.5% and 68.9% of the total (High Income), respectively.

³⁷ In most cases prefilling is used for PIT purposes, while experiences in the field of CIT and VAT are scarce and more recent, later some significant ones will be quoted, like the implementation of VAT pre-filled tax returns in Chile.

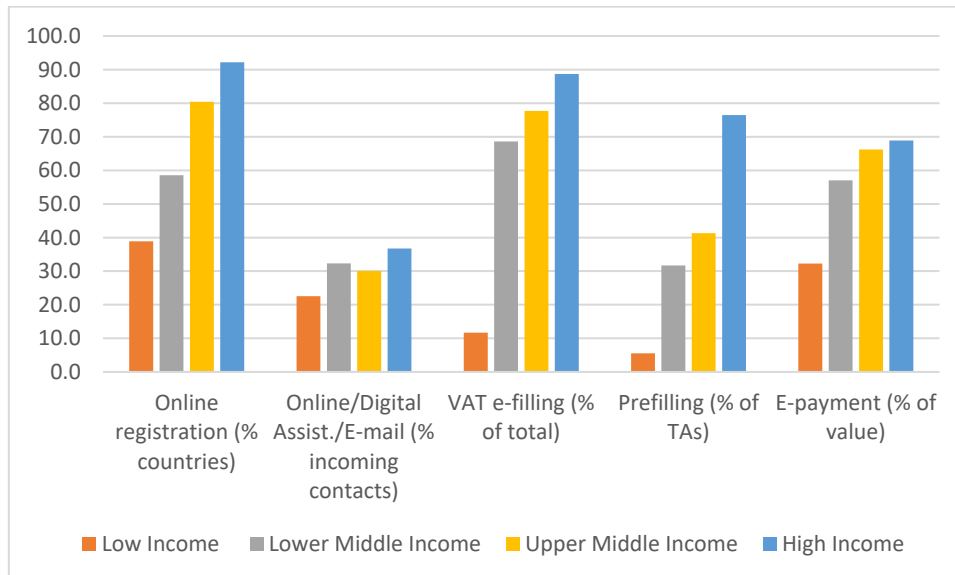
Table 5. E-filing, Pre-filing and E-payment. (2019 data; based on ISORA Survey 2020)

Country Groups	Electronic filing rate (in % of total)			TA pre-fills returns or assessments	Electronic payment proportion (in %)	
	CIT	PIT	VAT	% of TAs	Amount	Value
ISORA	70,7	63,5	74,1	46,2	57,0	60,9
Low Income	11,1	11,1	11,7	5,6	26,5	32,3
Lower Middle Income	64,2	56,4	68,6	31,7	56,1	57,1
Upper Middle Income	74,8	71,7	77,7	41,3	51,5	66,2
High Income	84,0	73,2	88,7	76,5	70,5	68,9

Source: ISORA

Figure 3 summarizes the differences in the implementation of new technologies depending on the level of income.

Figure 3. Technology innovations by level of income. (2019 data; based on ISORA Survey 2020)



Source: ISORA

It is worth to highlight that tax administrations, particularly those with solid and stable e-invoicing systems, are using the new data in different and innovative ways to provide new services. A few examples of its usage would be³⁸:

- Brazil, besides using its e-invoicing data to track the economy real-time on a sectoral basis, has developed the Public System of Digital Accounting (SPED³⁹), which has become the only channel between businesses and the TAs. This system includes modules for electronic invoicing, digital bookkeeping, and digital tax records, among other projects.
- Also, in Brazil there are new Internet applications that use e-invoice's databank as an input to foster competition, completing the information in the market. Specifically, there are two uses that improve the information, enhance transparency, and therefore boost market efficiency on the demand side: (i) price consultation applications that businesses have for the final consumer; and (ii) the setting of maximum prices to be accepted in public procurement. As regards the first of these, the data on the electronic consumer invoice (corresponding to purchases of final goods) is used as an input. Consumers thus have information on the prices of goods and can identify the most suitable. This use has been developed in the states of Piauí, Amazonas, Espírito Santo, Rio Grande do Sul⁴⁰, and Paraná⁴¹, the latter being the state deemed to have the best model. More specifically, e-invoice has become a pillar of clarity for important goods in free markets, such as the price of fuels or intermediate products (construction inputs, for example) which are important because they are of mass consumption. Concerning maximum prices in public procurement, note that the e-invoice databank makes it possible to determine product details and the quantities sold, and it is a matter of comparing the price of similar products so as to secure the best deal for the state. The states of Amazonas, Bahia and Rio Grande do Sul⁴² use this application.
- In Ecuador, the traceability of e-invoice has allowed identification and analysis of value added and market composition, the percentage of Ecuadoran goods and services in production chains for a series of economic sectors, complementing other sources of information. This type of study has two important applications as regards knowledge of the value chain. The first is to support public policy design, identifying national production nodes and the industries with the densest chains; the second is to improve the impact of public investment and tax incentives, gearing them to those activities with a greater national component and multiplier effect. Overall, this application gives the TA a role in the process of regulation and competition, and in

³⁸ CIAT and IDB (2018) and Zambrano (2023)

³⁹ <http://sped.rfb.gov.br/>

⁴⁰ <https://www.rs.gov.br/carta-de-servicos/servicos?servico=1052>

⁴¹ <https://www.fazenda.pr.gov.br/servicos/Cidadao/Nota-Parana-e-Menor-Preco/Pesquisar-precos-Menor-Preco-do-Nota-Parana-dYo9jKNL>

⁴² [https://tesouro.fazenda.rs.gov.br/conteudo/14183/precos-de-referencias-de-mercado-\(prm\)](https://tesouro.fazenda.rs.gov.br/conteudo/14183/precos-de-referencias-de-mercado-(prm))

improving traditional fiscal policies on the design of public investment and tax incentives.

- A large-scale implementation by the Chilean tax administration for factoring, on a voluntary basis, of electronic invoices⁴³ has opened access to fresh resources to a lot of taxpayers. Although the number of exchanged documents is not very high, the traded values are impressive reaching a couple of percentage points of GDP.
- In Chile too, the tax administration has prepared input and output registries for all VAT taxpayers, lifting their requirement for them to keep the corresponding books. Additionally, the SII (Servicio de Impuestos Internos) is pre-filling VAT returns since 2017, with an acceptance rate above 90 percent of all VAT registered taxpayers. Following the trend, Ecuador started to pre-fill some fields of the VAT returns in early 2019 and various countries are currently working in joining these two countries in this trend. Spain is also using its e-reporting system (SII, Servicio de Información Inmediata) to offer prefilled vat returns to most small and medium taxpayers⁴⁴.

4. Enforcing VAT compliance via tax data analysis and digital innovations

Beyond fostering voluntary compliance, new technologies may help to improve tax control and enforced compliance⁴⁵ in many areas. In a strict sense, tax control involves the examination and auditing activities (both massive -using the information already available at the TA to determine compliance with formal obligations and the accuracy of the returns filed- and intensive -resorting to the powers granted by the legislation to the tax administration to audit specific cases in detail-), but in a broad sense it could also include tracking and checking registry errors, non-filers, payment delays and debt collection efficiency.

4.1. 360 degree and real time analysis of VAT data

Technologic innovations may help to build a comprehensive VAT enforcement strategy, connecting all the possible steps and giving a 360 degrees panorama of the risks map, and approaching interaction with the taxpayers to a real time framework. Having access to high quality data timely and being able to process it, make all the difference.

Beginning with registry, TAs need to check it continuously, being sure that contact information is accurate, something that the existence of digital mailboxes/addresses make possible. At the same time information on economic sector activity classification is key, and it should be contrasted with the data collected on sales and purchases -what kind of goods and services are being trade-, checking that this activity correspond with the standard patrons to every different sector. The information from e-invoicing and e-reporting systems -containing qualitative data, not only quantitative- is essential to this process, and the use of

⁴³ https://www.sii.cl/destacados/factura_electronica/cesion_facturas.html

⁴⁴ <https://www.lamoncloa.gob.es/serviciosdeprensa/notasprensa/hacienda/Paginas/2021/120221-iva.aspx>

⁴⁵ Of course, the distinction between voluntary and enforced compliance is somewhat blurry in practice (given that tax control generates the perception of risk in the taxpayers -an important factor for promoting voluntary compliance-), but useful for exposition purposes.

advance big data analytics and, in some cases, artificial intelligence to detect anomalies in this area allow TAs to pre-detect nearly in real time possible risks.

Processing tax returns stage involves the risks of not receiving them on time, with a low quality of data reported and, even, the reputational risk in case the tax administration does receive tax returns on time but is unable to process them in a timely manner due to inefficient processes. Technology may help to mitigate these risks, first of all migrating to e-filing to reduce paper-based systems' flaws due to errors, illegible data and slowness in processing. Of course, e-filing is not free of risks and validation rules must be implemented to prevent errors, and both software and hardware have to be tested under stress to assure their adequacy (in any case, business continuity plans should be designed even for worst case scenarios where e-filing results blocked for different causes). Pre-filing of tax returns using the information from e-invoicing or e-reporting will help too to reduce the risks.

Tax payment risks may also be mitigated adopting technological innovations, especially online payment channels through the tax administration's information systems, minimizing other traditional options slower and more susceptible to errors. Again, this option involves their own risks (insufficient funds in the account provided by the taxpayer or network failures) that should be anticipated offering alternative ways of payment and with the implementation of ex post controls, what leads us to the next step: tax debt collection risks.

At this stage, information technology systems should allow the implementation of preventive measures, sending automatic reminder messages before the upcoming maturities of payment and/or immediately following a delayed or missing payment⁴⁶. Information systems must also be able to control debtor's assets, establishing electronic communication channels with the relevant databases and preventing asset stripping. Furthermore, the new data analytic techniques and artificial intelligence are being used to improve the selection of debts in the enforce collection phase and maximize recovery.

Strict sense tax control via auditing is incorporating new technologies to improve its efficiency too. Massive and automatic audits⁴⁷ are now possible using tax administration's IT systems to check tax returns for their accuracy, minimizing the use of resources and providing the taxpayers a digital channel to add new information on their tax return data. In this procedure, AI can help traditional econometric and statistical techniques to identify anomalies in the tax returns compared to similar taxpayers (clusters) and identify potential risks, triggering the request for clarification automatically.

Given the scarce resources available in any tax administration to perform in-person audits, the use of new technologies to prioritize, select and analyze the cases is essential. Traditional

⁴⁶ These messages should be designed using the behavioral economics insights and nudges.

⁴⁷ There are different auditing procedures with diverse names depending on the country. For example, the IRS (<https://www.irs.gov/businesses/small-businesses-self-employed/irs-audits#conduct>) distinguish among correspondence or mail audits (the bulk of all audits, usually a letter requesting more information or proposing an adjustment based on mismatching between tax return data and tax administration info), and in-person audits, at IRS offices ("office audit", when questions about your return are too complex or large for a correspondence audit) or at taxpayers' office (also called "field audit", the most comprehensive and detailed, involving visiting the taxpayer at their home or place of business to examine records). When we talk about massive and automatic audits, we are focusing on the first class, correspondence or mail audits.

risk assessment and case selection based on the use of statistics, series analysis and multivariate techniques (analysis of conglomerates, discriminant analysis, regressions and logistic regressions) have proven its efficiency, being used to identify outliers and create red flags and score systems to measure taxpayers' relative risks and help to focus auditing efforts. Artificial Intelligence should be used to help in this task and different models are being tested on their efficiency to detect and avoid potential tax fraud, using expert systems (that combine the knowledge of experts and their decision-making rules with machine learning and data mining) and autonomous machine learning (supervised -using labeled datasets to train algorithms that classify data or predict outcomes- or unsupervised -using not-labeled datasets-), and based on neural networks to process the data (with different structures of layers and feedback alignment functions, being deep learning the most human-independent system). Additionally, Social Network Analysis is being used to analyze complex relationships among multiple agents, identifying the main actors (nodes), the links among them (edges) and providing algorithms to measure their characteristics and help to isolate groups of agents (clusters) relevant to prevent tax fraud and visualize their activity (graphs), something essential when dealing with VAT fraud schemes.

In parallel to risk management, data management innovations are essential to perform audits, improving data bases interoperability, data import and analysis, search, and visualization tools. They allow for receiving massive data -in different formats- from the taxpayer and integrate them to the information available at the tax administration, provide Optical Character Recognition (OCR), web-scraping, and data-mining tools -to analyze written documents, internet disperse information and big data bases-, and help to understand better the results building customized graphs.

Finally, other well-known disruptive new technologies are going to play a role in specific areas of tax administration⁴⁸. For example, the potential use of blockchain technology in tax administration is mainly concentrated in processes with the participation of more than two players. These private blockchains would have different players, with different purposes in which the tax administration would be only one more of the players. The use of intelligent contracts, with operations and access restricted to specific players, and with the capability of limiting access of data through cryptographic techniques, open great opportunities to operate cooperation ecosystems among the different players. In the same vein, Internet-of-things (IoT) will play a role in the tax area. Devices that use IoT-based technology can automatize the handling and tracking of merchandise, the management of taxes related to transit, such as the VAT, and customs management.

Nowadays, all the technologies above mentioned -even with some confusion and overlapping over terminology- are still competing among each other (with different relative advantages concerning the information given to tax auditors on the explanation of the results and new challenges on the possible biases implied in the process⁴⁹) but there is no doubt that they will be the future of tax compliance risks management giving a 360 degree and real-time analysis of VAT data.

⁴⁸ CIAT (2020), p. 507-512.

⁴⁹ We will be back on this issue in the last section when dealing with AI ethical use.

4.2. Examples of innovations on enforced tax compliance

Innovations in the use of new technologies to tax administration is an ongoing process, extremely dynamic and continuously updating. In this section we will provide some examples of this novelties, among many other interesting experiences. The purpose of this review is not trying to cover them all, but to encourage further research in the specific areas any particular tax administration could be interested.

Blockchain in Tax Administration. The Brazilian Federal Tax Administration (RFB) currently implements a system based on blockchain to share data from the Registry of Individual Taxpayers (CPF)⁵⁰ among institutions in the three levels of government (federal, states, and municipalities), called “bCPF”. It uses a permissioned blockchain based on auditable open-source software in which only authorized institutions can participate. There are three kinds of participation: (i) participation only for consuming data, (ii) participation for the contribution of a data field, and (iii) participation for the modification of data; the latter one is carried out by institutions with legal prerogatives for this activity, which will be implemented by means of “intelligent contracts.” Not all nodes will be active, that is, not all nodes will have copies of the data base. The exchange of data of the CPF with other institutions is determined by the Constitution and the RFB currently has more than 800 valid agreements for this purpose. Thus, this application will render greater automation, security, transparency, and traceability of the process, besides promoting greater quality of data from the CPF.

Use of AI to identify real state. France⁵¹ (DGFIP) implemented an AI image recognition system to optimize the process of detecting undeclared constructions or developments, in order to fight more effectively against fraud and declarative anomalies in the field of real estate and update the cadastral map along the way.

Integration of big data analysis and data analytics. Bolivia’s tax administration (SIN) has digitalized⁵² all processes, from registry to taxpayers’ services and risk management, combining efforts to improve infrastructure, data bases and analytical tools.

Establishing a system to measure, monitor and report on taxpayer compliance in a uniformed, standardized, and scientific manner. The South African Revenue Service (SARS) identified the need of such a system back in 2006 and since then has developed the CEMIS (Compliance Evaluation and Monitoring Information System), successfully deployed in 2011 and currently houses over 10-years of compliance data. The lesson learned in the development and implementation of CEMIS served and assisted other African countries with

⁵⁰ CIAT (2020), p.509.

⁵¹ <https://ciat.org.sharepoint.com/:b:/s/cds/EVO7Ztw7hPtDmrk0euWgbhgBhh0K0eaXCVVVoP1ITK-JdA?e=slcfEN>

⁵² <https://ciat.org.sharepoint.com/:b:/s/cds/EaJbsYMdTy5Mjq7ILzWo0x0Bw2LGD8g3J8UAcJBZ-qfxag?e=QdlMLY>
https://ciat.org.sharepoint.com/:b:/s/cds/EZEbNmIEVvBKmZD6xrZbPIsBkwwgJxP9qzEH55ouV_rWZxQ?e=MbQ7MH

establishing their own compliance initiatives, including, amongst others, Uganda, Kenya, Lesotho, Zambia, and Mauritius⁵³.

Identifying anomalous transactions that do not correspond to a specific economic activity in the Tax Administration of Chile (Sii)⁵⁴. One of the major problems detected in the management of VAT is the improper use of tax credit by taxpayers. To improve the detection of such irregularities, the SII set up a system, in the proof of concept (PoC) mode, which uses AI tools - especially machine learning - whose main source of information is the electronic invoices presented by taxpayers. The main stages of the system are: Cataloging products based on glosses; Determination of the relationship between products and economic activities; Identification of transactions that do not correspond to the specific economic activity of the buyer; Generating signaling and visualizations.

On-line monitoring of transit of goods. Brazil's TAs developed a freight-vehicle tracking project using radio frequency, integrated into the electronic tax documents related to transported goods. While the vehicles are on the move, antennas scan them each time they pass by goods-transport control units located along the highways. This allows the TAs to monitor goods traffic in real time, and the goods are matched to their respective tax documents. In addition to the tax control, it is expected that the exchange of information will also help reduce the theft of vehicles and cargos. Apart from this real-time control of freight, the use of information technologies in Brazilian states has allowed for the simplification of companies' obligations to the TAs

Machine learning induced nudges when filing tax returns. In the process of reviewing, by the taxpayer, the prefilled tax return before the acceptance, the Spanish tax agency (AEAT) implemented a system of nudge messages that appear to taxpayers that are "similar" to those that in the past have changed manually that kind of data, introducing mistaken data and resulting in an adjustment by tax administration. The nudge-message informs of that possibility and the selection of the taxpayers is managed through a machine learning process.⁵⁵

Identification of false e-invoices issuers. Chilean tax administration (Sii)⁵⁶ developed a data analytics model for early identification of false e-invoices issuers, combining data mining, big data analysis, machine learning and dynamic dashboards to identify different risk models depending on the period of activity of the taxpayers.

⁵³ Taxpayer Compliance Evaluation and Monitoring, South African Revenue Service (2023), page 131 of BRITACOM Secretariat (2023).

⁵⁴ CIAT (2020), p.502.

⁵⁵ https://ciatorg.sharepoint.com/:b:/s/cds/EST4M-OnoKtGlarBXv_GK1UBEbnp5V-rRWDnLxdJ_dFqkQ?e=009Ozr

⁵⁶ https://ciatorg.sharepoint.com/:b:/s/cds/ERvV4Kf7LhZGrSZD0Utq4tUB3GOg_R2b-85Rh-0c8tdKXQ?e=4Evv0u

<https://ciatorg.sharepoint.com/:b:/s/cds/ESF13j-oTItBqsWPnLAmKi4Bq5t7QbnP9uwkBrmjZgDI1w?e=H1tcwX>

Implementation of electronic audits in Mexico (SAT)⁵⁷: beginning in 2018 and using all the information available at the tax administration, a total of 74 processes were built, going from computation revisions to cross matching. Over two million companies went through control procedures or what we can call electronic audits. The processes include the generation of audit working papers for the audit until the preparation of reassessment notices when needed.

Electronic virtual audits. India tax authorities⁵⁸ have moved to a completely electronic, AI driven, anonymized and team-based assessment system known as Faceless Assessment. Spain (AEAT) has also introduced a system of virtual tools for auditing, named VIVI (Virtual Visits)⁵⁹.

Indonesia is investigating the potential revenue impact of new digital activities such as the Social Media Influencers using new research tools (data crawlers, computer vision, social network analysis, etc.)⁶⁰.

Machine learning and big data analytics. CIAT has developed⁶¹ a software named e-IAD (e-Invoice Anomalies' Detector) in collaboration with Microsoft. This software allows to identify, select, and prioritize cases of taxpayers with unusual behavior⁶², by applying unsupervised machine learning models to the data of the electronic invoice, the taxpayer's registry, and the tax returns⁶³. The system prioritizes cases through an anomaly index, similar to a risk ranking, providing also descriptive statistics and graph theory visualization. The deployment in the Costa Rica Finance Ministry⁶⁴ was completed in March 2023 and the results are currently being analyzed. Guatemala (SAT) and Colombia (DIAN) plan to complete its deployment before the end of 2023.

⁵⁷ CIAT (2020), p.505.

⁵⁸ Beginning with direct taxes (CBDT, Central Board of Direct Taxes). <https://incometaxindia.gov.in/booklets%20%20pamphlets/faceless-assessment-under-income-tax-act-1961.pdf>

⁵⁹ [https://sede.agenciatributaria.gob.es/Sede/en_gb/normativa-criterios-interpretativos/analisis/2022/El sistema de Visita Virtual una revolucion practica de los procedimientos.html](https://sede.agenciatributaria.gob.es/Sede/en_gb/normativa-criterios-interpretativos/analisis/2022/El%20sistema%20de%20Visita%20Virtual%20una%20revolucion%20practica%20de%20los%20procedimientos.html)

⁶⁰ Discovering Tax Potency in Social Media Analytics, presentation available at https://www.britacom.org/ebook/4rd_britacof/mobile/index.html, session 5.1.

⁶¹ CIAT's Center for Advanced Analytics and Artificial Intelligence, with the financial support of NORAD, Norway's development agency and the collaboration of CIAT's member countries' experts.

⁶² For example, taxpayers with non-existent or simulated operations (suspicious invoicing), receiving income for unusual behavior or with an atypical supply network -where the volume of customers and /or suppliers is out of proportion-, among many other potential anomalies.

⁶³ 1.12 billion records were processed in less than seven hours (thirty-three months of data).

⁶⁴ Costa Rica provided the anonymized data from e-invoices, essential to develop the software in its early stages.

5. Other issues to implement new technologies for VAT compliance: data and its use.

At the base of the use of new technologies and digitalization to improve VAT compliance is the data, its governance to make it useful and safe, and the legal and ethical consequences of the techniques used in the process. Of course, this is not something exclusive of VAT or taxes in general, and covering this topic thoroughly is far beyond the scope of this section. But its importance requires, at least, to enumerate the challenges and risks associated to the use and transformation of data. Even if interrelated, it is relevant to highlight security of information, data governance and ethical use of the information, among those challenges.

Security of information⁶⁵. The data that tax administrations and all citizens share to make it possible collective action must be protected to fulfill the social contract. And to make it possible coding -cryptography-, secure client-server interaction and robust digital identity certificates are key, necessary but not sufficient. Besides the technological requisites, we need to keep in mind that security is a transversal process for the organizations, and tax administrations need to pay attention to the definition of clear policies, consistent practices, effective procedures, and staff's active participation⁶⁶. The establishment of an Information Security Program (ISP) will have to deal with: the coordination of roles and responsibilities of information security; the alignment with the legal and regulatory requisites, including privacy and civil freedom related to information security; and the governance of the information security system.

Data governance⁶⁷. Data governance is an organization's ability to manage the knowledge it has about its own information so that it can respond to questions such as: What do we know about our information? Where does that data come from? Are these data aligned with our institutional policy? According to the Data Governance Institute, data governance is defined as the specification of a framework of responsibility to encourage appropriate behavior in the valuation, creation, storage, use and disposal of information. This includes the processes, roles, standards, and metrics that ensure the effective and efficient use of information so as to enable an organization to achieve its goals. For tax administrations in particular, there are different proposals available to implement and evaluate a data governance model⁶⁸, adjusted to their particular need in terms of privacy and data protection, transparency in management, control and auditability, responsibility and data stewardship.

Ethical use of the data and the new technologies. Beyond the legislations to protect citizens privacy, civil rights, and a fair treatment by tax administrations, recently a new awareness became, far beyond the tax arena, the hot topic: the ethical use of Artificial Intelligence. The exponential growth of the capacities of AI and the black-box nature of some of its mechanisms have led to global initiatives to identify the risks and control the possible damages involved in its use. What data are we using to train the machine learning algorithms?

⁶⁵ CIAT (2020), p.316.

⁶⁶ Through the establishment of an Information Security Program (ISP), whose main objectives are: coordination of roles and responsibilities of information security; guarantee alignment with the legal and regulatory requisites, including privacy and civil freedom related to information security; and governance of the information security system.

⁶⁷ CIAT (2020), p.408.

⁶⁸ CIAT (2022)

Are the results biased by the data? Are there specific characteristics of the taxpayers that should not be used as discriminatory when designing, for example, audit programs? Do we give the taxpayer enough information on the process as to allow their fair defense in case of dispute? In this field is impossible right now to offer clear guidelines, but tax administrations must follow closely the developments that are taking place concerning the ethical use of tax control technologies and AI in general⁶⁹, in order to be prepared to adjust their procedures. In this sense is most relevant the recent European Parliament initiative to implement a set of rules to curb the risks of artificial intelligence (AI) and promote its ethical use⁷⁰.

⁶⁹ Recent research has alerted on the risks associated with the use of algorithms in this field. See, for example, the Stanford collaboration with the Department of the Treasury of the USA, yielding the first direct evidence of differences in audit rates by race (Elzayn, H, Smith, E. et al (2023)) or the Dutch case on biased control of childcare benefits (<https://www.politico.eu/article/dutch-scandal-serves-as-a-warning-for-europe-over-risks-of-using-algorithms>)

⁷⁰ <https://www.europarl.europa.eu/news/en/agenda/briefing/2023-06-12/1/debate-and-vote-on-landmark-rules-to-manage-artificial-intelligence>

See also Bias in Algorithms. Artificial Intelligence and Discrimination Vienna, by the European Union Agency for Fundamental Rights, 2022 (https://fra.europa.eu/sites/default/files/fra_uploads/fra-2022-bias-in-algorithms_en.pdf)

Many other centers and institutions are researching on this topic, providing useful insights, as, for example, the Digital Regulation Cooperation Forum (DRCF) in the UK (See: Auditing algorithms: the existing landscape, role of regulators and future outlook, available in <https://www.gov.uk/government/publications/findings-from-the-drcf-algorithmic-processing-workstream-spring-2022/auditing-algorithms-the-existing-landscape-role-of-regulators-and-future-outlook>). About the use of large language models (LLM) in the public sector it is worthwhile to consult the EU Council Analysis and Research Team 2023 paper on “ChatGPT in the Public Sector –overhyped or overlooked?”

6. References

BRITACOM Secretariat (2023), Best Practice of Selected Jurisdictions on Improving Tax Environment.

https://www.britacom.org/gkzljxz/Documents/202309/t20230914_1129788.html

CIAT and IDB (2018), Electronic Invoicing in Latin America: English Summary of the Spanish Document.

https://www.ciat.org/Biblioteca/Estudios/2018_FE/2018_Electronic_invoice_summary_BID_CIAT.pdf

CIAT (2020) “ICT as a Strategic Tool to Leapfrog the Efficiency of Tax Administrations” Inter-American Center of Tax Administrations (CIAT)

https://www.ciat.org/Biblioteca/Estudios/2020-ICT_STL_CIAT_FMGB.pdf

CIAT (2022) Data Governance for Tax Administrations: A Practical Guide. Inter-American Center of Tax Administrations (CIAT)

<https://www.ciat.org/Biblioteca/DocumentosTecnicos/Ingles/2022-data-governance-AT-CIAT-GIZ.pdf>

Díaz de Sarralde, S. and Morán, D. (2022) Innovation, Digitalization and Technology Index (INDITEC): A tool for benchmarking Tax Administrations at the international level (Based on data from ISORA 2020 Survey) Working Paper 02-2022. Inter-American Center of Tax Administrations (CIAT).

<https://www.ciat.org/Biblioteca/DocumentosdeTrabajo/2022/WP-02-22-Sarralde-Moran.pdf>

Elzayn, H, Smith, E. et al (2023) Measuring and Mitigating Racial Disparities in Tax Audits, Stanford Institute for Economic Policy Research (SIEPR) WP 23-02 (January)

<https://siepr.stanford.edu/publications/measuring-and-mitigating-racial-disparities-tax-audits>

EU Council Analysis and Research Team (2023) ChatGPT in the Public Sector –overhyped or overlooked?” ART Research Paper

https://www.consilium.europa.eu/media/63818/art-paper-chatgpt-in-the-public-sector-overhyped-or-overlooked-24-april-2023_ext.pdf

European Commission (2022), VAT in the digital age: final report. Volume 1, Digital reporting requirements, Publications Office of the European Union, Luxembourg, <https://doi.org/10.2778/541384>.

European Union Agency for Fundamental Rights (2022) Bias in Algorithms. Artificial Intelligence and Discrimination

https://fra.europa.eu/sites/default/files/fra_uploads/fra-2022-bias-in-algorithms_en.pdf

ISORA: CIAT, IMF, IOTA, OECD (2022), International Survey on Revenue Administration: 2020 and 2021

<https://data.rafit.org/?sk=8b008788-ebde-4d61-bc90-7438d6aa12dc&sId=1637191076670>

Morán, Dalmiro & Díaz de Sarralde Miguez, Santiago (2021). Overview of Tax Administrations in CIAT Countries. Revenue, resources, performance, and digital transformation in the prelude to the COVID-19 pandemic. Inter-American Center of Tax Administrations (CIAT), Panama.

https://www.ciat.org/Biblioteca/Estudios/2021_overview-TA-moran-sarralde.pdf

OECD (2019), Implementing Online Cash Registers: Benefits, Considerations and Guidance, OECD, Paris.

[www.oecd.org/tax/forum-on-tax-administration/publications-and-products /implementing-online-cash-registersbenefits-considerations-and-guidance.htm](http://www.oecd.org/tax/forum-on-tax-administration/publications-and-products/implementing-online-cash-registersbenefits-considerations-and-guidance.htm)

OECD (2020), Tax Administration 3.0: The Digital Transformation of Tax Administration, OECD, Paris.

[http://www.oecd.org/tax/forum-on-tax-administration/publications-and-products/
tax-administration-3-0-the-digital-transformation-of-tax-administration.htm](http://www.oecd.org/tax/forum-on-tax-administration/publications-and-products/tax-administration-3-0-the-digital-transformation-of-tax-administration.htm)

OECD (2021), Supporting the Digitalisation of Developing Country Tax Administrations, Forum on Tax Administration, OECD, Paris.

www.oecd.org/tax/forum-on-tax-administration/publications-and-products/supporting-the-digitalisation-of-developing-country-taxadministrations.htm

OECD (2022a), Tax Administration 3.0 – Action Plan Update, OECD, Paris.

<https://www.oecd.org/tax/forum-on-tax-administration/publications-and-products/tax-administration-3-0-action-plan-update.pdf>

OECD (2022b), Tax Administration 3.0 and Electronic Invoicing: Initial Findings, OECD Publishing, Paris.

<https://doi.org/10.1787/2ffc88ed-en>.

Zambrano, R. (2020) “Electronic Invoice in Latin-America”, page 19 of “Applying New Technologies and Digital Solutions in Tax Compliance”, Intra-European Organisation of Tax Administrations (IOTA)

https://www.iota-tax.org/sites/default/files/documents/publications/Books/iota_book_2020_may_applying_new_technologies_and_digital_solutions_in_tax_compliance-online.pdf