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Chapter 1: Establishing a robust framework for tax compliance in the era of digital transformation

1.1 Introduction

The emergence of the digital economy has spontaneously posed questions about the tax compliance of companies settled in offshore tax havens. With the dawn of digital transformation, bolstered by the Fourth Industrial Revolution and reflected through concepts like Industry 4.0, the urgency of these questions seems to grow at a pace closely linked to the speed of change brought to the traditional economy. Notwithstanding this, the tax framework that embodies the structuring of income tax compliance operations across countries is based on outdated principles. This, to some extent, explains the contemporary rise in tax avoidance and evasion as loopholes, tentatively closed through ad-hoc two generations of international tax reform initiatives. In this context, an unfair allocation of taxable income, and consequently of tax revenue, through the cross-border deployment of intangible assets and the manipulation of intercompany transactions becomes expected. For low-income countries, where the digital economy creates massive value and where consumption taxes do not offset income tax avoidance, the problem becomes critical (Alm & Soled, 2016; Kogler et al., 2020; Adelakun et al., 2024).

The response by classical law is through a set of rules governing the permanent establishment, which determines the contribution given by a company to the economic life of a taxation jurisdiction on tax jurisdictional factors as premises for a need for tax jurisdiction. But what has meant, despite its old age, micro and macroeconomic studies of the income mobility of a listed company show that taxable income can be disconnected from the residency and, a fortiori, from the location of the permanent establishment. The ad-hoc elaboration of transfer pricing rules is meant to reduce this disconnection as far as it shall possible through price adjustment mechanisms of cross-border transfers of tangible and intangible assets and the liability to prove that a reasonable firm would not resort to the transfer of the price agreed upon (Yücebalkan & Sancak, 2020; Schüßler & Thiemann, 2022).

1.1.1. Purpose and Scope of the Study

Digital transformation has changed the way we live. Tax is no longer an exemption – it impacts every digital citizen, every organization, and every jurisdiction. However, tax compliance seldom contributes to the taxpayers' welfare. They want clearer rules, less complex compliance procedures, greater reliability of the tax payment, quicker refunds, and protection from identity theft. Digitalization has changed the interaction of taxpayers and tax authorities in a significant way. Tax authorities have access to good-quality data from various sources. The collaboration between the taxpayers and tax authorities is significantly facilitated through advanced data analytic tools. Better data sets can help tax authorities to identify and address the compliance gaps, and help taxpayers to comply with the regulations cost-effectively. Technology has also enabled the implementation of more efficient tax compliance systems. The objectives of this study are to identify current trends in the digital transformation journey, particularly those that are the most relevant to tax compliance, and to evaluate the impact of digitalization on tax compliance in an era of digital transformation. It then suggests practical ways for tax authorities to improve their tax compliance regimes. This paper is divided into six sections. Following the Introduction, Section 2 briefly summarizes the current megatrends in digital transformation. In Section 3 we discuss how tax compliance is set to change significantly with the impact of these megatrends. Section 4 addresses the pros and cons of a more automated or digitalized tax compliance process. Finally, we make recommendations for policymakers, especially the tax authorities, on more effective use of advanced technology so that tax compliance will be a non-issue for both taxpayers and tax authorities, and hence become a facilitator of the growth of the digital economy.

1.2. The Evolution of Tax Compliance

The Evolution of Tax Compliance Over time, tax compliance has evolved tremendously in its nature and dynamics. From the imposition of simple taxes and levies through kings and emperors during the centuries preceding the Common Era, the tax system has grown to be the broad all-encompassing institutional milieu that it is today, formed by a labyrinth of taxes, tax rates, and obligations designed by governments in response to their developmental prerogatives. Using this historical perspective as a backdrop, we examine the forces that informed the different stages of growth of tax compliance over the ages. 2.1. Historical Perspectives on Tax Compliance Trends The ancient Romans instituted the first official tax collection process within a formal administrative structure.

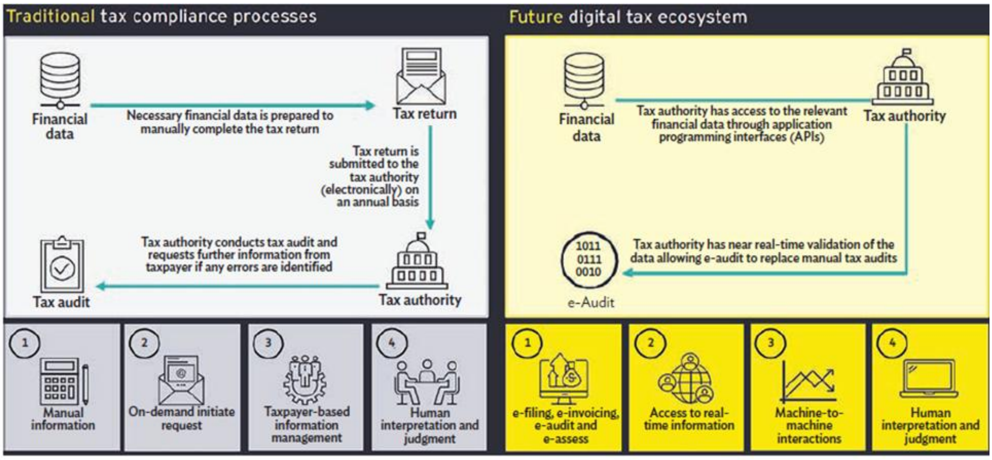

Fig 1 . 1: Digital Tax Administration Transformation

They centralized tax collection activities within state coffers and authorized individuals for tax collection. It is suggested that current tax principles that stress transparency, a strong tax base, and an efficient tax administrative structure emerged from the Roman tax structures. Their tax code dealt with property taxes, inheritance taxes, income taxes, and sales taxes. Tax compliance during this period was achieved through the coercive powers of the military state.

1.2.1. Historical Perspectives on Tax Compliance Trends

Tax compliance is a critical challenge for any government. Societal aspects have a key role in tax compliance, such as trust in government, and sense of belonging, and acceptance of the social contract. However, there are differences in tax compliance around countries and periods in history. At the beginning of the 21st century, the whole World is going through a Digital Transformation process and individuals and societies seem to lose such trust. Having that in mind the aim of this paper is to reflect upon historical aspects of tax compliance and how they correlate with nowadays expectations and outcomes related to Digital Transformation through the lenses of societal trust and social contract. We hypothesize that without a more robust answer to the contract implied between society and the government, for instance regarding the provision of free access to public services, there is the risk of tax compliance continuing its path towards increased fragility (Schüßler & Thiemann, 2022; Yücebalkan & Sancak, 2020).

Complying with the tax system obligations is something that developed societies have assimilated throughout time, given the promissory implicit in the social contract – also called the social compact that inhabits the concepts of social contract – in which people agree to "obey the rule of law" in exchange for the government's job to protect the population and to create welfare and favorable conditions for the community's happiness. Governments must provide welfare, stability, security, and also the provision of various services connected with public health, public safety, defense, or security for the maintenance of order, justice or property rights, rule or law, and economic interaction. If such contracts are not observed, then society feels it is not bound and, consequently, tax compliance decreases.

1.3. Digital Transformation: Impacts on Taxation

Digital transformation produces multiple implications for the development of modern economies and societies. Notably, the substitution of traditional means of engagement and governance for digital means, enabled by previously unseen advancements in digital information technologies, creates a more optimal distribution of the costs of information among private actors, and between private and public actors. This optimal distribution informs behaviors and removes, or mitigates, the incentives for tax evasion, fraud, and tax arbitrage, among others. Digital transformation also informs changes in how actors across domains perceive the utility, and corresponding willingness to pay, for both private and public goods and services.

At the tax policy level, these aspects produce a strong dividing line between two fundamental roles. One role involves maintaining the curbside appeal of the economy and society, which implies ensuring optimally low rates of tax in light of economies' and societies' short- to medium-term residing elasticities of destination. The second role involves ensuring that no opportunity is lost, that is currently factored to be economically viable, for facilitating optimal assignments of specific goods and services to the market, actors, institutions, or states that can best utilize them, individually or collectively. At the societal level, this means acting to offset externalities and insuring against systemic risks resulting from such externalities. The counterpart at the level of the individual taxpayer, whether corporately or individually, means mitigating both economically- and socially damaging risks to the fiscal balance of government. These needs define the fiscal policy function. Each of these roles imposes multiple interactions on the primary functions of the tax authority, because of their circular interdependencies.

1.3.1. Navigating the Digital Tax Landscape

The digital transformation has brought significant changes to taxation. It has altered how taxes are assessed, collected, and enforced, affecting both tax administrations and taxpayers. New types of transactions, products, and industries, such as crypto assets, digital services, and the digital economy, have emerged or grown rapidly. The digital transformation has influenced taxpayer behavior, allowing businesses and individuals to hide activities from tax administrations or shift them to low- or no-jurisdiction countries. Moreover, the growth of digital services alone generates a disproportionate share of GDP growth and tax revenue for certain countries, putting increasing pressure on these authorities to adopt unilateral measures to ensure that the value creations of multinational enterprises, especially the tech giants, are taxed fairly in their country. Digital transformation technologies also offer tax authorities powerful new tools for leveraging compliance, enhancing revenue collection, reducing compliance costs for businesses, and achieving indirect tax systems. However, how these technologies are deployed, and by whom—and whether such deployments are intrusive or risk exposing sensitive citizen data—will alter the trust between tax administrations and taxpayers, for better or for worse.

The good news in all of this is that tax authorities can and must embrace new technologies such as machine learning, artificial intelligence, big data analytics, and data sharing. On the other hand, many developing countries may not currently have the technology, human skills, or resources needed to undertake such an ambitious modernization program, at least to the extent that many advanced economies have. For some, these barriers may be significant, while others in such circumstances may be coping with the negative impacts of digital transformation.

1.4. Challenges in Tax Compliance

No one likes paying taxes. Milwaukee Bucks owner Sen. Marc Lasry and President Barack Obama seem to have a different approach to taxes, according to individuals conversant with their thinking. Yet the phrase “taxes are the price we pay for a civilized society” used to roll easily from almost everyone's lips when they were younger. Janet Yellen has healthfully articulated the modern wording. Many contemporary adults feel that phrases about the "social debt" and "the obligation of individuals in the work" may have "explanatory power".

But instinctively, no one is excited about compliance costs. And as the digital economy migrates towards "digital intermediation" — also known as the "adaptation of online selling models for more efficient cross-border e-commerce" — tax compliance costs loom larger. Tax compliance costs for years became a sore point in international relations for every country looking for a digital tax. Some countries publish notorious reports on compliance costs associated with the tax system. These costs are capitalized in the international infrastructure especially as many young people see themselves increasingly working as independent contractors and comedians on social media platforms.

Here in Canada, tax compliance costs domestically are calculated in colorful detail for central and provincial taxes. The Canadian report on compliance costs devotes space to what it calls the “Over-reporting” Model: the individual taxpayer (with business income) or incorporated proprietor autonomously accounts for and files income and GST/HST, liable for over-reporting rather than under-reporting. Vicarious levels of government visibly wave farewell to the adage "You may be sure of two things in life: death and taxes'.

1.4.1. Complexity of Tax Regulations

Tax compliance is a challenging and expensive endeavor. More specifically, corporations and individuals specializing in individual assessment in the tax compliance process face significant challenges, including navigating complex tax regulations. Tax laws can be intricate and subject to interpretation, making it difficult for individuals and businesses to understand and comply with their tax obligations. The reliance on human discretion can cause variations in tax compliance costs resulting from the uphill compliance burden. Furthermore, the complex nature of the laws creates a disconnection between available resources and applicable laws, leading to tax non-compliance and additional costs for tax authorities to address and mitigate the non-compliance.

Fig 1.2 : Complexity of Tax Regulations

Tax law is an expansive body of regulations that governs the collection of taxes by a government. As such, tax legislation is amended often and in many cases is painstakingly long, convoluted, and confusing. Consider the tax professional prepared to file their first client’s return in a country with a system of deductibility and a home interest exclusion amid complex rules; they bear the burden of finding the applicable laws in a shelf of tax-related books in their firm. However, this is not simply a difficulty for tax preparers: clients in the struggling merchant category, for example, will need clear guidance as well. The newly minted CPA is the best professional ally of the merchant because they best know the laws applicable to that individual's exact situation…or at least they should. Poorly trained or inexperienced tax professionals would have a much harder time preparing a complicated return compared with the standards of a CPA. As tax systems grow in complexity and size, the burden of the accuracy standards placed upon tax preparers grows at an exponential rate.

1.4.2. Evolving Digital Economy

The merger of the physical and virtual worlds is increasingly integrated into ecosystems and consists of e-commerce, mobile finance, digital currencies, cloud computing, data distribution, and digital labor, proliferating transactions, goods, and services, combined with unbundling and casualization of goods and services, lead the significant expansion of the digital economy. The digital transformation of every economic sector, business function, goods, service, and asset through the adoption of a wide array of digital technologies is underway. All of these new economic activities take place in a system that connects all economic players, within which metadata are generated, collected, stored, and analyzed. They pave the way to a new form of coordination, of which unnamed currencies are the visible reflection, and modes of provision, which explore the strategic flexibility that the choice of digital media implies. This contextualizes the structural evolution brought about by the emergence of hyper-globalization in a world dominated by financialization, into the framework of an economy whose foundation is the digital decoupling between the gaining of better standards of living and employment, and growth and productivity. Cyber Protectionism is likely to emerge in reaction to political tension arising from trade disputes, social tension arising from growing inequality, illumination of scandals involving data between private companies and governments, and interconnected cycles of economic turbulence that, via monetary policies, fire the printing presses of debt, or fiscal policies, accelerate economic decline.

1.4.3. Data Privacy Concerns

Governments and tax administrations are increasingly leveraging digital platforms, data analytics, and artificial intelligence to bolster compliance. However, such advancements often operate on large volumes of taxpayer data that are confidential and sensitive by nature. Tax compliance is structurally enabled through information exchange, but this shouldn't occur at the risk of taxpayer trust and confidence. Privacy violations or perceived violations can draw far greater scrutiny against tax administrations than violations committed by taxpayers, leading to a cascading effect. Hence, tax authorities must strike an appropriate balance. Large-scale non-compliance brought on by taxpayers avoiding informational obligations may not be justified at the cost of interfering with willing taxpayers who place privacy as a priority. It is possible to strike a balance between enabling compliance and protecting privacy, but strategies not carefully thought out can result in significant levels of under- or over-regulation.

Recent scandals involving how governments use information and what information governments choose to track, as well as the relatively nascent stage of tax administrations themselves in the realm of Big Data, may also accelerate increases in taxation information asymmetries if taxpayers, especially the digitally-savvy, decide that the risk of intervention by government tax authorities is too high relative to the potential gain. Tax administrations must deal with significant amounts of taxpayer data and policymakers must ensure interagency data-sharing enables tax systems to improve compliance while policymakers also impose legal constraints on how digital economy companies can track and share taxpayer information. Tax administrations are expected to effectively intervene with the taxpayer's tax obligations, all without a reliable mechanism to do so with the tools available or a set of privacy options easily recognizable.

1.4.4. Technological Disparities

Evolving digital technologies are transforming how taxpayers interact and how tax authorities enforce tax laws. However, a significant technological divide still exists, not only between those that have adopted the use of tax technology and those that have not, but also between high-income and low- and middle-income countries. The sophistication of the technology may create a disparity in compliance costs across businesses of varying sizes that may ultimately affect the compliance decision. Tax authorities continue to increasingly establish controlled digital ecosystems for taxpayers that minimize interaction in paper format and move the tax compliance activities of affected taxpayers to a digital environment. Countries are already conducting real-time tax audits on business operations. But little has been said about the capacity of countries to invest in such tax infrastructures and the burden imposed on businesses required to comply with such activities.

In addition, the use of sophisticated tax technology by some taxpayers may also create a technological gap between jurisdictions that can invest in tax compliance technology and those that cannot. Ongoing digital transformation efforts across the world, tackling infrastructure needs, especially for the poorest countries, take on a greater urgency. Moreover, the principles many countries adopted some years ago provide that the countries’ tax systems must be in line with their level of development. At the same time, the increased reliance of tax authorities on tax technology may further deepen such technological gaps. The increasing ability of tax authorities to perform their independent analysis based on corporate data submitted increases the exposure of businesses in poorer countries to authority assessments. In other words, while many businesses in poorer and developing countries can be assessed based on a limited review of corporate records, the policies in place to ensure the availability of adequate recourse mechanisms may not be that sophisticated to deal with complex business operations.

1.5. Framework for Tax Compliance

Policies that reinforce, not undermine, voluntary compliance are a necessary dimension of the tax system. The growing digitalization, which is driving the creation of virtual marketplaces, the increasing use of tax incentives to pursue other public policy objectives, and the effect on global value chains of health crises and geopolitical tensions, may create additional opportunities for tax avoidance or evasion. Since the magnitude of the shadow economy is usually more substantial in developing countries, this may undermine the efforts aimed at expanding their revenue base. Compliance tends to deteriorate about the number of businesses and individuals who may be tempted to evade taxes without being detected. In addition, the ever-increasing number of information obligations imposed on taxpayers can reduce, rather than increase, compliance. Thus, compliance management, using new technologies and advanced data analytics, becomes ever more relevant in this period of transformation.

A distinct tax compliance framework should be established, articulating compliance objectives, taxpayers' rights and duties, tools for identifying risks, services, and actions to induce compliance, and penalties for non-compliance. Specific strategies should be designed and developed for particular taxpayers and environments. The establishment of such a framework and its communication to all citizens are the prerequisite for voluntary tax compliance. Citizens must be well aware of the penalties in case of non-compliance, the public goods funded through their tax contribution, and their importance. By doing so, it is possible to implement an effective strategy aimed at expanding the tax base available for formal taxation, while reducing the size of the shadow economy.

Tax authorities should develop and operationalize the principles of fairness, efficiency, and effectiveness specific to their situations about one another. Too much reliance on audits and penalties creates a culture of hostility, high costs of compliance for businesses and individuals, and undermined resources of the tax authority. The key is to focus on taxpayer services and prevention and react when non-compliance is detected. It is not easy to strike the right balance, so constant dialogue and a changing focus are necessary for specific sectors and situations. In other words, designing this balance, and implementing it operationally, are both key for fostering a compliant business environment.

1.5.1. Principles of a Robust Framework

The rapid development of the digital economy has brought new challenges to tax compliance, resulting in the need to establish a comprehensive, population-based framework that lays the groundwork for the tax obligations of all economic actors, before delving into targeted solutions for specific stakeholders in specific domains. For that reason, countries need to lay down the pillars of a robust framework by collecting key policy information from the respective workstreams and integrating it into a comprehensive and consistent framework. More precisely, such a framework would leverage existing international tax frameworks' fundamental principles and work at two levels, structural and functional. The structural dimension establishes the rules applicable to tax obligations, the type of taxes, the processes, and the principles. The functional dimension emphasizes existing processes, how obligations are satisfied, what needs to be developed and/or facilitated, as well as what risks countries are facing. This structural-functional dimension must also be coherent with the objectives of tax policy and tax compliance, which can be summarized in five principles: (1) horizontal equity consists of taxing economic actors involved in the same type of activities and with the same earning potential in a similar way; (2) effective tax collection increases citizen buy-in to the tax compliance process and tax legislation; (3) efficiency refers to minimizing the compliance cost by using to the extent possible automatic solutions that limit the burden for compliant actors while increasing revenue for governments; (4) adaptability is the principle by which the framework mitigates the risk of tax avoidance and evasion in open, digitized economies that are subject to volatility and structural changes; (5) facilitation must be built into the rules so that compliance with them is easy and automatic. To the extent possible, the same compliance resources must be relied upon to maximize synergies.

In this regard, the features of the digital economy can be summarized into three phrases that must be taken into consideration when designing frameworks for compliance. Firstly, economic actors can quickly access large digital, paperless flows of data-driven decision-making; secondly, technology is blurring the lines between business and consumer; finally, taxation is a cost rather than a revenue opportunity. Because of these three specific features, established tax principles may not have the same effect. Specifically, the cost aspect implies that people may be more inclined to report and settle their tax obligations automatically if the tax system is designed to do so, that is, there is no dispute as to the amount owed.

1.5.2. Stakeholder Engagement

As the world continues to evolve into a global digital landscape, it becomes imperative that tax leaders and practitioners embrace collaboration with their respective business partners and support functions to establish relevant tax policies and procedures that are capable of both meeting compliance requirements, managing risk and also support "doing business" within a highly competitive and complex economy. Establishing partnerships with business units, risk and compliance, information technology, legal, vendor management, supply chain, accounting, and external vendors is essential in supporting tax-compliant business operations. Partnering with impacted business units enables a more holistic understanding of the business activity including what data is collected and stored, how it is processed for operational use and the systems used to manage all aspects of the transactions. In addition, through collaboration with the respective business partners and vendor management, the tax function can identify opportunities to leverage tax technology in the automation of tax calculation, including the ability to store the source information for review by the tax function as well as meet various jurisdictional compliance requirements. By developing these working partnerships, tax can become more involved in the day-to-day business operations and decision-making, enabling the tax function to elevate its status by becoming a trusted advisor for the business, potentially allowing the business units to leverage the experience and knowledge of the tax function more readily, including avoiding unforeseen tax exposure.

1.5.3. Technology Integration

Technology is an effective solution to enhance existing resources. It increases operational efficiency and reduces costs, timeframes, and errors related to content production and content examination. Additionally, it creates new opportunities to harvest and analyze large sets of data, enabling tax administrations to identify and categorize risks, as well as micro- and macrotrends. Despite being the most solid global trend, digitalization is concerned with particular tax sectors in developed economies. Inspirations from tax compliance and tax audit technologies lie in the automation and development of massive datasets. For example, transacting with Bitcoin generates high visibility transactions because they are all recorded on the blockchain, and thus enables tax authorities to check whether taxpayers have recorded capital gains that correspond to their visibility on the blockchain. Additionally, there are specialized companies aimed at tracing Bitcoin origins and destinations, enabling the creation of large datasets of data. However, even though these tools are immensely valuable, they only cover a small amount of non-compliance sources.

Artificial Intelligence (AI) is being developed to an extent that allows governments to demand taxpayers to remit business transaction information in real-time through onboarding tools and increase the integration of on-demand tax payments on the Bitcoin economy. AI techniques are emerging as valuable tax compliance and tax audit services. Deep learning is being employed to create tools to identify whether companies are being fraudulent within input tax claims and VAT refunds. Generative AI is powering chatbots that help taxpayers understand routines for filing and paying taxes. Additionally, it is being considered to help employees analyze requirements dictated by complex tax regulations, and to help tax administrations implement knowledge management strategies by developing chatbots that guide employees in searching for internal tax knowledge. Finally, AI algorithms are being developed to connect people to government programs, allowing both agencies and taxpayers to save time and costs.

1.6. International Collaboration and Tax Compliance

Tax authorities are reviewed to follow principles on information exchange, for the provision of taxpayer information with their foreign partners in the context of the fight against the "offshore" phenomenon and the provision of FDI tax benefits. Countries should initiate the concluded agreements of exchange of information and account for the results obtained to build the credibility of information on tax benefits provisions. Moreover, the recommendations on the exchange of tax information between countries regarding public digital services reflect the global trend in the area of digital taxation, stimulating cooperation between authorities located in different jurisdictions.

International cooperation against tax fraud in the digital economy relies primarily on the desire of national authorities to promote the full remittance of income tax related to the FDI. Such common willingness is made easier by the simplicity of the implemented solutions and the common agreement on general conditions of the problem solutions: the formalization of automatic reporting by businesses in the form of computer-readable files destined for information cross-validation and risk analysis and be retained by the government, while regulation asks the business to remit taxes until tollgate thresholds are exceeded.

Substantial cross-border tax challenges arise due to international digital economy characteristics – intangible assets with high valuation and a possibility of no physical presence, and hyper localization making receipts generated from the clients of one jurisdiction or from the use of their data for profit-making by businesses of other jurisdictions. To limit the risk of excessive tax remittance, tax bases are divided into variable quotas that depend not only on local parameters or sales but on aesthetic characteristics of the location, such as cultural proximity or customs preventing business activity within the considered jurisdiction.

1.6.1. Global Standards and Regulations

The world economy is interconnected, and tax policies within boundaries can have an impact far beyond the territorial lines. Exported tax policy, such as withholding taxes on dividends, has a direct effect on the allocated profits of a foreign corporation and thus, indirectly, on the sector-specific investment strategies of multinational companies. In the other direction, tax competition through low taxes on business profits and capital can result in a loss of tax revenues from business activities in wealthy countries that possess high tax levels. In both cases, tax systems and decisions in one country may have externalities on other countries. International cooperation and collaboration in tax governance are needed to mitigate the possible adverse impacts of this through loss of tax revenues and allocation of economic activity in inefficient directions. At stake are the crucial tasks of tax policy: the amount of resources available to finance public goods and services and for the distribution of income. As cross-border activities are expanding, so are the deliberate efforts by governments to reduce taxation of business income and capital and the resulting race-to-zero tax rates. Thus, a complex mix of tax policies that include location and tax attribute incentives can trigger global economic activities into undesired amounts in undesired countries. The allocation principle, which states that profits should be taxed where the economic activity takes place, typically where production jobs exist, must be upheld. Individual countries cannot be left alone to address these international tax policy challenges. International organizations contribute to solving these challenges by providing forums for discussing and coordinating cross-border tax matters. Efforts to develop and implement standards for international tax avoidance addressing base erosion and profit shifting aim to make sure that tax policy creates win-win outcomes for hygiene purposes. Hence, a desired outcome of this cooperation is avoiding multiple taxation and unintended non-taxation of corporate profits.

1.6.2. Cross-Border Tax Challenges

To combat cross-border tax avoidance, many governments have begun to review the existing regulations and cooperation frameworks against multilateral corporations and companies with high incomes and increasing activities. The implementation of these regulations has not yet achieved the desired effect. The tax regulations and tax policy framework must be further amended to enable the authorities of the tax residence of the payer to collect the withholding tax. The complexities of e-commerce challenge revenue collection for tax jurisdictions: decisions by the tax authorities in association with the implementation of a global digital tax are needed. A breakthrough concerning the Basel process and digitization is the prioritizing of a new recommendation – a symmetrical, proportional, and legal tax at source on services. It must also reflect the place and mode of service, to create disincentives for digital companies that do not create any externalities. The fight against tax avoidance that is strictly economic must be suited to the new economic dimensions. Europe's response to the present crisis cannot consist merely of worshipping at the shrine of internal growth.

The majority opinion of the two Committee members is that the use of corporate tax concessions, which result in a loss of revenue for the States and increased distortions of competition, must cease. A mechanism must therefore be created to tax profits from providing services and using assets and solutions within the framework of a Global Digital Tax. Taxing profits in this manner could complete the first pillar of the agreement to lift services and assets from the corner of a digital tax and therefore be gradual. The ethical dimension also has to be solved. The global world needs companies that involve externalities for the respective territories where services are provided. The digitalization of the economy requires new methods and pillars for valuing what it generates – it is not only the issue of intangible assets but also to bring into line the increasing value of the service concerning the territories where services are provided.

1.7. Future Trends in Tax Compliance

This section will explore emerging trends in tax compliance, with special emphasis on technology. There are of course many environmental factors that affect how citizens pay taxes and how authorities help them to do so. However, it is currently hard to imagine a trend that could have a greater impact on how taxpayers interact with their tax system than the new possibilities emerging technologies could create, such as big data, specialized platforms, AI, and the shared economy. When making their choices, tax authorities are better served if they take into account how these technologies will alter their tax compliance landscape. Policymakers must be proactive in anticipating the effects of technology and not be reactive in re-plugging holes in tax legislation as they become apparent. Generally, we propose that it is not the role of tax authorities to compete with private platforms on ease of use and speed and automation in information exchange. But as intermediaries become more specialized and the shared economy increases, tax authorities need to ensure these platforms have the right tax flows in place to facilitate matching payments and that the right information on taxes owed is submitted electronically to their tax authorities. Burgeoning specialization in new technology could also heighten compliance risk. Tax authorities should monitor compliance using relevant metrics and tailor their compliance activities in-house or out-of-house accordingly. Compliance fixing should be as easy as compliance making.

1.7.1. Emerging Technologies

When taxpayers engage with EMIs, trust, reputation, credibility, and security are verified through prevailing technologies. Such trust between the taxpayer and the EMI arguably calls for reduced oversight by the taxing authority over formal tax compliance, while increased engagement through technology should enhance tax payment compliance. Given the reliance of EMIs on technology, large and increasing amounts of personal data and financial activities are being captured, providing a rich trove of information about a person's preferences, needs, and credit rating, which the EMIs can easily monetize or manipulate for profit. Affordable to low-income groups, such data-linked but isolated transactions by taxpayers may, however, present tax enforcement challenges in the absence of or inadequate reporting requirements, use, and loss of anonymity with such transactions, to mitigate tax knowledge asymmetry, taxpayer morale, and a level playing field. Nevertheless, the rising popularity of EMIs warrants serious consideration by taxing authorities of the need for tax oversight. Such new taxes on the non-compliant, avoiders, and reducers by taxing authorities could help revive tax morale and possibly even tax compliance.

The threats summarized above underscore the need for utilizing these new technologies, tools, and techniques for tax compliance programs, rather than viewing them as hindrances. Taxing authorities must, like EMIs or commercial companies, embrace advanced technologies, adopt lean management philosophies, and review their organizational structures and policies. How tax authorities engage the taxpayer or collect, store, manage, and analyze transactional and predictive data should also be reviewed. Traditional top-down approaches whereby tax authority officials inform taxpayers of their tax obligations, how to comply and the consequences of failure to do so, appear ineffective in preventing tax non-compliance.

1.7.2. Policy Implications

As emerging technologies continue to redefine tax compliance frameworks, policymakers must fathom the implications inherent in their integration while navigating apparent challenges from the rising complexity of business models and disruptive online players to the increasing sensitivity of taxpayer data. Core policy questions emanating from this trend toward a more digitized tax compliance space concern the wisdom of making e-compliance mandatory for all taxpayers, the rigidity of mandating digital methods of compliance versus the prudence of allowing taxpayers to choose between digital- and non-digitized options, the potential value of advancing e-compliance facilitation for those without access to the technologies for doing so, and the potential need to regulate both the digital compliance technologies and the external license providers. We put forward several recommendations that could help resolve these core policy issues in the context of an increasingly digitized tax compliance space.

First, policy should set out an ambitious, owning-your-data-enabled vision for what e-compliance can seek to achieve. The technology market is burgeoning with sustainable e-compliance solutions that target discrete aspects of tax compliance, but these solutions would only combine to create a frictionless end-to-end experience that focuses on taxpayer needs if the taxpayer can assume their costs and control their data. Hence, ensuring the high quality of the taxpayer experience while recognizing the importance of the taxpayer as an integral participant in the tax compliance process is essential to mitigate the risk of taxpayers treating the e-compliance process based on external accounting expertise – an important safeguard against tax avoidance that exacerbates the dangers of data disclosure – too lightly.

1.8. Recommendations for Policymakers

In the digital transformation era, the adoption of digital technologies to enhance tax compliance has become imperative for governments. However, this tax compliance digitalization journey does not come without challenges. Those challenges include industry application diversity, rapidly changing technologies, and difficulty in accurately predicting firm tax behavior. To overcome these challenges during tax compliance digitalization, we propose recommendations for policymakers in the areas of developing flexible regulations and encouraging innovation in compliance. These two areas are crucial in helping firms understand what is expected from them in terms of tax compliance, thereby enhancing the likelihood of compliance by reducing the uncertainty surrounding the compliance process.

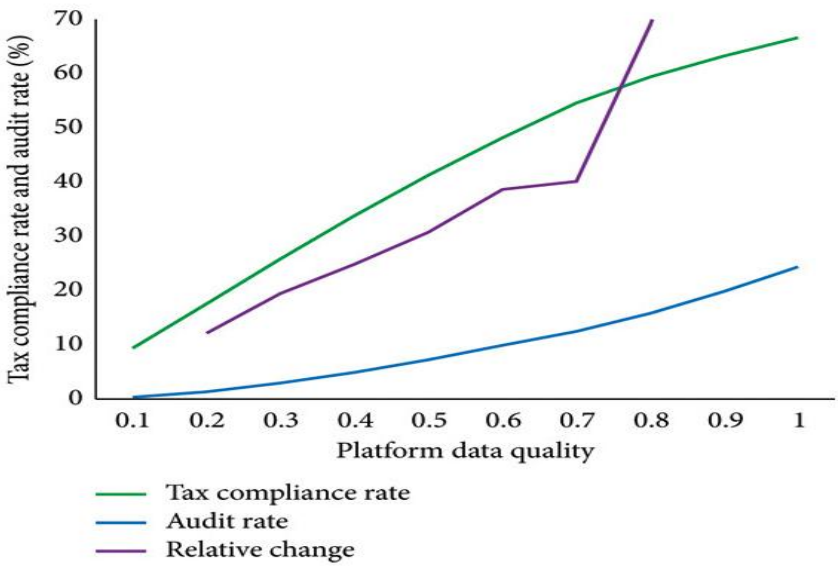

Fig 1 . 3 : The Effect of Platform Data Quality on Tax Compliance in Digital Economy

Despite the increasing importance of technology for tax compliance in this era of digital transformation, tax compliance regulations and guidelines have remained generally static for many years, and, therefore, not necessarily reflective of the rapid digitization of the tax compliance process. Changes to such regulations and guidelines always necessitate long review periods and consultations with relevant parties along the tax compliance value chain. Tax regulations must also become flexible and allow for innovative, value-creating solutions from firms because firms may have varied technological capabilities and financial resources. Upgrading the tax compliance process through technology adoption will not be a simple solution for firms. To avoid imposing undue burdens on some firms, tax regulations must allow for flexibility in compliance approaches. This flexibility would reduce the possibility of noncompliance by allowing for tax compliance solutions that relate more closely to the businesses of the firms.

1.8.1. Developing Flexible Regulations

As outlined in this work, tax compliance is affected by the digital transformation that aims to raise efficiency and innovativeness in the way in which services are provided by the government. In this newly arising model of digital transformation, a framework for taxation also needs to be re-thought. More specifically, can a flexible, timely reaction by a tax administration to new emerging technologies and platforms be of any help in uplifting compliance? It highlights the importance of making regulations for the digital economy flexible enough to allow for a timely reaction from tax administrations, and design mechanisms that support voluntary compliance. These organizations have a major role in facilitating compliance and supporting the development of new technologies designed specifically to help the taxpayer. It was stated that "the regulations that control trade and the international supply chain must move faster than the advancement of technology". As stressed by authors in June of 2018, new data and technologies will allow governments to create positive compliance experiences for businesses, replacing current punitive approaches with compliance models that prepare firms to be compliant.

The fact that regulations for the digital economy are not yet made, but also that taxes that are generated from cross-border transactions may be insufficient to cover costs incurred in the form of international public goods, invitations need to be provided to the remote seller to introduce regulatory frameworks and taxation mechanisms that go beyond disincentives. This is why the challenge for policymakers and true for tax administrations is to create regulations that will be sufficiently flexible to easily and timely evolve according to business activities, whether they are carried out through a digital platform or in an offline bear-to-bear business approach. It is pivotal that the newly designed tax regulations address, promptly, issues related to compliance by identifying the proper tax administrator in charge of monitoring, collecting, and enforcing tax rules compliance.

1.8.2. Encouraging Innovation in Compliance

Innovation can help enhance and simplify tax compliance while minimizing administration costs. Technological advances, digitalization, and the expansion of data availability can help the tax administration and taxpayers automate and/or facilitate compliance. The tax authorities should ensure that the development of these compliance innovations is stimulated. Innovation in compliance can reduce compliance costs while improving the quality of tax data and stimulating voluntary compliance behavior. This can take place through several approaches. Firstly, governments can partner with private sector firms that are already developing innovative products/services to help taxpayers comply. These products can help tax administrations in auditing taxpayer compliance and help reduce taxpayer burdens in data collection and reporting. With tax technology embedded into enterprise resource planning systems, collecting and submitting tax-relevant data can be automated and simplified. Secondly, active promotion by tax authorities of cloud-based or artificial intelligence solutions can renew outdated processes for the transfer of business tax-relevant data. Thirdly, tax authorities could champion leading-edge partnerships with other public sector institutions so that innovations that enable compliance in other parts of the taxpayer's relationship with the public sector could be replicated in tax. Moreover, the audit functions of the tax authorities could adapt their procedures to adopt more readily technical solutions that enhance the quality of compliance while moderating compliance costs.

1.9. Conclusion

Building upon technology, channeling digital disruption, and achieving excellence in management are all important success factors for firms to explore the opportunities of taxation. Digitalization is also an active enabler of tax collection, not only an area for firms to explore the opportunities. Governments need to invest both in enablers to facilitate economic agents in meeting their compliance duties and in advanced detection and sanctioning methods for those who infringe on the tax duties. Balanced use of tax enablers and deterrence is hypothesized to be the most effective and efficient way of both ensuring effective compliance for economic agents and sustainable taxing for governments. There are no single best solutions that will apply universally. Selection of the best tax policies to achieve planned and desired social and territorial outcomes should be linked with strategic tax policy objectives and regularly evaluated concerning firm attitudes. Policymakers would articulate specific strategies together with relevant agendas to address lingering tax issues for the explored lines of inquiry.

All stakeholders would benefit from the exploration of tax-related avenues, positively impacting tax obligations. Policymakers would achieve better-planned public revenues, moving society towards equality, equity, and justice. Governments would lessen the increasing budget deficits by enhancing citizens' tax knowledge and by reducing the shadow economy costs. Tax avoidance practitioners would avoid the risk of tax non-compliance sanctions. Tax advisors would benefit from increased demand for their services concerning fair tax planning and reducing the risk of being non-cooperative. Tax firms and staff would be able to trust that their tax duties are fulfilled. If tax duties are duly met, society at large would benefit since public revenues would provide funds received in the form of social spending transfers.

1.9.1. Final Reflections and Strategic Insights

Digital transformation has wide-ranging implications across economies and societies that can create both vertical and horizontal disruptions, potentially affecting tax systems and their functionality in both the short and long run. Therefore, a robust tax compliance framework is vital to capitalizing on the opportunities and overcoming the challenges of the digitalization of economies and accelerating digital transformation. This section summarizes the insights and recommendations discussed in detail in the previous chapters. It emphasizes that these insights and recommendations need to be pursued synchronously to create an integrated approach that fosters tax compliance through tax serviceability rather than only controlling behavior through tax enforceability.

Many emerging research avenues and strategies need to be pursued to maintain tax serviceability, enforceability and tax compliance in the future. The first step is to take tax system complexity seriously. Policies and researchers have taken long enough to take the causes of complexity lightly, and it is time for a detailed exploration of how complexity arises. It is maintained and the factors that influence individual and corporate responses to complexity. From there, it should be easier to develop clearer tax communications aimed at increasing the transparency of taxes, both conceptually and practically. This is essential, as lack of clarity leaves people with no choice but to fill in the blanks and could lead to entirely wrong conceptions of how tax systems, tax bases, and taxes about each or corporate taxpayer function and are determined. Without this almost axiomatic monetary and behavioral foundation, all communication efforts will remain rudimentary, unreflected, and issue-based, which could lead to tax attitudes that challenge tax systems.

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