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# Digitalising the Fiscal Contract:

## An Interdisciplinary Framework for Empirical Inquiry


*Christian von Haldenwang*

# Digitalising the fiscal contract:

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Christian von Haldenwang

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## Abstract

Tax systems worldwide face far-reaching transformations through the implementation of digital technologies. A growing body of academic literature addresses these transformations and explores how digitalisation is affecting the operations and efficiency of revenue agencies, and taxpayer compliance. However, the literature largely ignores the diversified body of research regarding the characteristics, dynamics and determinants of the "fiscal contract". This term describes an implicit agreement between state and both citizen and business taxpayers that associates individual tax compliance and the distribution of the tax burden within a society with public service delivery and access to political decision-making.

Fiscal contract theory helps us to understand that taxation is primarily a political – not a technical – issue. But what happens if some technologies cause profound power shifts in the relationship between revenue authorities and taxpayers? Will they trigger the emergence of broad-based, stable fiscal contracts, or might tax system digitalisation increase exclusion and decrease stability? What drives these changes? How do digital technologies in the tax systems of developing countries affect their fiscal contracts?

This paper seeks to lay the conceptual groundwork at the intersection of two dynamic academic debates. Based on a thorough review of the literature, it proposes a research framework that combines economic, public management and political science perspectives in order to generate knowledge about institutional, attitudinal and behavioural responses to tax system digitalisation.

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Bonn, September 2020 Christian von Haldenwang

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# Abbreviations

| | |
|---|---|
| AI | artificial intelligence |
| API | application programming interface |
| CERDI | Centre d'Études et de Recherches sur le Développement International |
| CIT | corporate income tax |
| CRS | common reporting standard |
| e-government | electronic government |
| ESRM | electronic sales registration machine |
| EU | European Union |
| GDP | gross domestic product |
| GIS | geographical information system |
| G2B | government-to-business |
| G2C | government-to-citizen |
| ID | identity document |
| IT | information technology |
| IMF | International Monetary Fund |
| MNC | multinational corporation |
| OECD | Organisation for Economic Co-operation and Development |
| PIT | personal income tax |
| RCT | randomised control trial |
| SDG | Sustainable Development Goal |
| UN | United Nations |
| UN-DESA | United Nations Department of Economic and Social Affairs |
| UNRISD | United Nations Research Institute for Social Development |
| US | United States (of America) |
| VAT | value-added tax |
| WBGU | German Advisory Council on Global Change (Wissenschaftlicher Beirat der Bundesregierung Globale Umweltveränderungen) |

# 1 Introduction

The capacity to regularly collect taxes has long been considered a central feature of modern statehood (Tilly, 1975). Today, as developing countries are striving to mobilise additional domestic resources to finance the Sustainable Development Goals (SDGs) in the 2030 Agenda (see UNRISD, 2016, pp. 167-195) they are additionally challenged by the Covid-19 pandemic. Mobilising domestic resources requires modernising tax systems and strengthening revenue agencies. Digitalisation, that is, the strategic and coordinated use of digital technologies to improve the internal processes and external service delivery of revenue agencies, is a key feature of such reforms (Jacobs, 2017).

Although digitalisation has been an important element of public sector reform for quite some time (see Heeks & Bailur, 2007; von Haldenwang, 2004), its pace has greatly accelerated in recent years. The latest United Nations E-Government Survey reports that 143 of 193 UN member states allowed income tax declarations to be submitted electronically in 2020 (UN-DESA, 2020, p. 25). That the number of countries almost doubled since 2014, when just 73 governments provided the service, is not entirely surprising: Many e-government strategies and digitalisation plans focus on tax systems because revenue agencies routinely manage complex processes involving large amounts of data and frequent interactions with taxpayers.

While all governments are affected by the opportunities and challenges of digitalisation, they are not uniformly affected (Kochanova, Hasnain, & Larson, 2020). Developing countries tend to be less prepared for digitalisation. To give an example, revenue agencies worldwide experience difficulties accessing relevant information on economic transactions, but this is much harder in countries where more than 50 per cent of the workforce are employed in the shadow economy, such as Colombia (58 per cent in 2013: see Doligalski & Rojas, 2018).

All tax systems are unique, but those in low- and middle-income countries share some characteristics that set them apart from those in high-income countries (Besley & Persson, 2014; Bird, 2013; von Haldenwang & Ivanyna, 2012). These characteristics include (i) greater dependence on business taxes, (ii) the higher relevance of big companies, including multinational corporations (MNCs), as taxpayers, (iii) greater economic dependence on natural resources or knowledge-extensive (but labour-intensive) activities that add less value, (iv) lower reliance on directly taxing private households, (v) more centralised tax systems and (vi) lower levels of administrative capacity. However, in all country income groups, some revenue agencies operate under legitimate governments and the rule of law, while others suffer from low levels of legitimacy, high levels of corruption and frequent political interference.[1]

It is well known that taxation is not simply about enforcing state authority on citizens and private sector companies. Nor can it be reduced to executing laws and regulations. A growing body of academic research indicates that claims of legitimacy, taxpayer acknowledgement of such claims and perceptions of tax fairness play important roles in public revenue systems.[2]

1 Von Haldenwang and Ivanyna (2012) identify a group of 22 countries that combine low levels of tax performance with low levels of governance and low non-tax revenue. The latter indicates that countries are unable to compensate their low tax revenue with rents from natural resource extraction. It is fair to assume that in these countries governance significantly influences tax collection capacity.

2 It should be noted that an important body of academic research analyses the inverse relationship – higher levels of fiscal capacity and taxation leading to more responsive and democratic government. From this perspective, states that have been able to regularly collect taxes from a broad range of societal actors have

These factors, along with administrative capacity and the institutional setting of revenue agencies, shape the "politics of taxation" (von Haldenwang & von Schiller, 2016). They constitute a "fiscal contract" between rulers and ruled, an implicit agreement between the state and the taxpayers that associates individual and business tax compliance and distribution of the tax burden with public service delivery and access to political decision-making.

This paper begins by observing that the two academic debates about the fiscal contract and the digitalisation of tax systems are quite separate. Although a growing body of economic and public management research explores how digital technology shapes the operations and efficiency of revenue agencies and taxpayer compliance, the literature largely ignores the institutional characteristics and political determinants of the fiscal contract. Similarly, studies on tax bargaining, fiscal sociology and the politics of taxation (all pillars of fiscal contract research) have not yet accounted for the game-changing impacts of digitalisation. This paper seeks to lay the conceptual groundwork for new insights and presents a research agenda to address the question: How are key digital technologies affecting fiscal contracts, particularly in developing countries?

The next section introduces the concept of the fiscal contract. It identifies three main lines of research: one linking taxation to specific properties of political regimes, a second that considers bargaining and political settlements as key factors shaping fiscal contracts and a third focused on the behavioural aspects of tax compliance.

Section 3 discusses the digitalisation of tax systems. It distinguishes the challenges of taxing a digitalised economy from the introduction of new digital technologies in tax administration. Unlike fiscal contract theory, which is primarily concerned with state-citizen relations, contributions to this debate often look at state-business relations separately. This is because technological changes in revenue administration tend to affect businesses much more than citizens since their relations with revenue agencies are more frequent and complex.

Based on these literature reviews, Section 4 identifies key digital technologies currently transforming state-taxpayer relations. It focuses on the technologies already widely used in many countries (including low- and middle-income countries), such as electronic taxpayer identification and registers, online tax returns, online and mobile tax payments, and electronic invoicing (e-invoicing) in state-business relations. Taken together, these technologies serve two major objectives: They enhance the informational basis, thus increasing the power of revenue authorities vis-à-vis taxpayers, and improve the quality of revenue services – which lowers compliance costs for taxpayers.

Section 5 presents the conceptual framework for empirically studying this topic. It proposes starting with a descriptive analysis of the changes taking place in revenue agency operations, their interactions with other public agencies (including cross-border) and their relations with taxpayers. The section then proposes three lines of research on changes in perceptions of tax fairness, tax compliance and investment behaviour, and political attitudes and behaviour. Section 6 summarises the main insights derived from the discussion and locates them in a broader context of state-taxpayer relations.

---

generally also been able to govern effectively in a wide range of other areas, while the inability to generate significant revenue through taxation has often been a precursor to state failure, and even collapse (Baskaran & Bigsten, 2013; La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1999; Lieberman, 2003; Mahon, 2005; A. Persson, 2017; Tilly, 1990).

## 2 Fiscal contracts

Fiscal contract theory holds that taxation should be expected to constitute a major and crucial part of the social contract between the citizens and the state (Mahon, 2005; Prichard, 2019; Timmons, 2005). Fiscal sociology links taxation to inequality, public service provision and social cohesion (Campbell, 1993; Martin, Mehrotra, & Prasad, 2009; Martin & Prasad, 2014). For many years, most empirical research and theory-building concerned industrialised countries (see Besley & Persson, 2009; Buchanan, 1967; Hettich & Winer, 1988; Levi, 1988; Steinmo, 1993; Tilly, 1975). However, it became apparent that developing countries present a multitude of cases that deserve (or require) more attention (Bahl & Bird, 2008; Bird, 1976; Fauvelle-Aymar, 1999; Lotz & Morss, 1967). Many studies of industrialised countries of the global North emphasised taxation as a factor for democratisation and stable political rule, while development research debates focused on the coercive elements of taxation and the need for additional tax reforms.

Fiscal contracts are typically implicit agreements between taxpayers and the state. They link tax compliance by individuals or groups with the provision of public services and access to political decision-making. Probably the best-known example is the Boston Tea Party's call for "no taxation without representation" in 1773 (Ross, 2004). The concept of a "contract" that governs the taxation relationship is based on three concomitant observations: First, taxpayers are more willing to comply with their tax obligations if they perceive that the tax burden is fairly distributed, their benefits are broadly in line with what they pay, and they can meaningfully influence political decision-making (Levi, 1988). Second, political rule that extracts tax revenue without coercion tends to be more efficient and enjoy greater legitimacy than that which merely coerces (Olson, 1965). Third, effective taxation is facilitated when the two sides know what to expect from the other (von Schiller, 2018). However, not every fiscal contract is based on democratic rule or formalised in stable laws and constitutional dispositions. Fiscal contracts can be highly elitist and informal.

Academic research has regarded the fiscal contract from three perspectives. One explores the macro-level linkages between taxation and specific features of political rule. The second studies bargaining and accountability relationships as major elements of taxation, and the third produces evidence of behavioural and attitudinal drivers of tax compliance and morale. These perspectives will be discussed in more detail below.

### 2.1 Taxation and political rule[3]

At the macro level, academic research has long sought to provide evidence of the relationships between taxation, power politics and the institutional set-up of political regimes. The rationale driving this research is that the state's capacity to levy taxes is contingent on a set of conditions that include political institutions and the distribution of power within society. Scholars working in this area seek to amplify the economic debate on taxation. They assume that democracy and the ability to obtain revenue from taxes are positively associated in most cases. But the theoretical underpinnings of their arguments differ widely and the empirical evidence is inconclusive. Researchers identify two factors

3 Parts of this section are based on the author's previous work on taxation and political regime type. See Garcia and von Haldenwang (2016).

that affect the association between regime type and taxation: economic growth and redistribution.

Contributions to the debate based on modernisation theory link the type of political regime to economic growth and increased tax collection due to an increase in taxable income. If democratic rule and economic growth are positively associated, as Milton Friedman's notion of two mutually reinforcing "freedoms" suggests (Plümper & Martin, 2003, p. 28), with all other things equal, democratisation will lead to higher tax collection because of improved economic performance (Boix, 2003; Persson & Tabellini, 2009; Profeta & Scabrosetti, 2010; Przeworski, Alvarez, Cheibub, & Limongi, 2000).

A second approach to regime type and taxation identifies distribution as the key causal mechanism. The median voter theorem (Acemoglu & Robinson, 2006; Downs, 1957; Meltzer & Richard, 1981; Milanovic, 2000; Romer, 1975) states that democracies offer more and better public services and higher levels of redistribution due to expanded suffrage and the growth of organised interest groups. Since bigger governments need to raise more revenue, they collect more taxes. Olson's concept of encompassing rule (Olson, 2000) claims that governing elites may engage in redistribution out of pure self-interest if their constituencies are large enough.

However, since most citizens earn some income from the market and lose income through taxes, the average democratic ruler will be reluctant to raise taxes while the average autocrat will be less concerned about distribution. If democratic competition causes more citizens to have a say in government decisions, incumbents seeking re-election will be incentivised to limit coercion – and taxation (see Gould & Baker, 2002; Kenny & Winer, 2006; Ross, 2004). Presumably, autocratic regimes are more willing to use coercion to collect taxes (Olson, 1993).

This hypothesis is based on the assertion that paying taxes is never totally voluntary and requires at least some coercion (Martin et al., 2009). A regime that has more freedom to coerce should thus be in a better position to extract taxes from its citizens. However, authoritarian leaders may be reluctant to directly tax the corporate and household incomes of the economically powerful. Kenny and Winer (2006) observe that democracies rely more on personal income tax (PIT) than non-democracies.

Some studies have analysed the linkages between levels of taxation and types of political regime (Cheibub, 1998; Garcia & von Haldenwang, 2016). Similarly, a few studies have employed tax revenue figures as indicators of legitimate rule (see especially Gilley, 2009; Levi, 1988). These studies enhance our understanding of the various ways to stabilise the expectations of rulers and ruled: While democracies are better at collecting taxes, on average, non-democratic rulers can also issue credible commitments – either positively, by delivering public services, or negatively, by increasing coercion and repression.

Ricciuti, Savoia and Sen (2019) provide supporting evidence for arguments that effective revenue extraction can occur for any regime type. They distinguish two aspects of taxation power: *impartiality*, the accountability and transparency of fiscal institutions, and *effectiveness* in extracting revenues. In their model, one indicator of effectiveness is the quality of taxpayer registers – an aspect of tax administration that is now strongly shaped by digital technologies. Findings indicate that strong political institutions that constrain the executive – a key feature of democracies – significantly affect impartiality but have less impact on effectiveness.

Several studies consider the long-term determinants of the fiscal contract. For example, D'Arcy and Nistotskaya (2018) analyse European states' fiscal capacity during the early modern period (1450-1800) and show that the quality of cadastral records is an important predictor of contemporary tax outcomes. Long-term tendencies in the evolution of fiscal contracts are also researched by Andersson (2017), who studies the impact of urbanisation on tax structures as far back as 1800. Seelkopf and Lierse (2017) analyse the rise of progressive taxation in Western democracies since the mid-19th century. Finally, some authors look at the long-term impacts of colonial rule, often comparing the French and British colonial heritages (Ali, Fjeldstad, Jiang, & Shifa, 2018; Mkandawire, 2010).

Adopting the perspective of international relations and international political economy, research on cooperation and competition in tax matters examines how the international tax system impacts tax fairness and domestic revenue mobilisation (Dietsch & Rixen, 2016; Egger, Nigai, & Strecker, 2019; Hakelberg, 2016; Hearson, 2018; Konrad & Thum, 2018). An important strand of this literature analyses how taxation relates to state-building and stabilising political regimes (Genschel, Lierse, & Seelkopf, 2016; Seelkopf & Lierse, 2017). However, only a few studies have asked how international tax cooperation and competition help to legitimise or de-legitimise political regimes (see Dietsch, 2015; Wollner, 2018).

This line of research is relevant because it shows how key reforms, transformations and historical traits of political institutions may have deep and lasting impacts on tax systems. Research on the far-reaching transformations resulting from digitalisation must be mindful of the long-term patterns and structural determinants of tax systems.

## 2.2 Bargaining

Another strand of taxation literature is based on the observation that real-life tax policies always result from societal bargaining processes embedded in institutional settings, with the two sides exhibiting different kinds of power resources (Moore, 2015). Such bargaining not only involves citizens as taxpayers, but also business and economic elites who can use the threat of market defection as an important bargaining chip (Bates & Lien, 1985; Rakner, 2017). In this context, the bargaining concerns tax policy as well as the performance of tax administrations (Bird & Zolt, 2008; Fairfield, 2013; Torgler, 2005).

Literature on taxation and state-building seeks to account for the dynamics of political change in the global South (Bräutigam, 2008; Moore, 2008; Moore, Prichard, & Fjeldstad, 2018). Taxpayers are likely to be more willing "to pay taxes to a state that they perceive to be legitimate and to a tax authority that they regard as a competent agent of a legitimate state" (Everest-Phillips, 2010, p. 77). Tax-paying citizens and companies are also more likely to demand that governments respond to their needs (Beach, 2018). Participatory governance and accountability may thus make it easier for governments to raise taxes (see Touchton, Wampler, & Peixoto, 2019).

Several studies in this field distinguish short-term negotiations on distributing the tax burden from long-term political settlements that are partly responsible for the path-dependency of tax systems (Hassan & Prichard, 2016; Khan, 2010). The concept of political settlements links a state's revenue mobilisation capacity to stable formal and informal institutions that shape power relations between contending elites. A core assumption is that political

settlements can only persist if the state's distributional capacity is in line with the power distribution that shapes the bargaining capacity of societal groups (Khan, 2010, p. 25). This is not always the case in developing countries that have relatively low tax-to-GDP ratios and limited distributive capacities but dynamic social development. There, informal institutions (clientelism, patronage and co-optation) may become central vehicles for distribution and political appeasement. Kjær, Ulriksen, Kangave and Katusiimeh (2017) present evidence from Uganda regarding three areas of revenue bargaining: legislative tax reform, revenue agency performance and spending priorities.[4]

However, stable power relations and political settlements are not necessarily related to higher tax takes. Levi (1988) formulates the theoretical underpinnings of research about how political stability leads to *lower* tax collection. She bases her argument on the political discount rate, whereby rulers are more inclined to maximise revenue through taxation if they have short- rather than long-term political time horizons (see also Azzimonti, 2011). Supporting evidence exists for Levi's argument: "Taxes in both dictatorships and democracies are higher when governments feel relatively insecure in office, lending support to the idea that governments tend to plunder when the rate at which they discount the future is relatively high" (Cheibub, 1998, p. 369).

This relevant line of research more generally relates the "technical" or "formal" dimension of taxation to taxation politics and political power relations. Both short-term (bargaining) and long-term (settlements) dimensions should be subjected to empirical scrutiny. Digital technologies that cause profound changes in the power relationship between tax authorities and taxpayers are likely to have far-reaching consequences for fiscal bargaining and political settlements.

## 2.3 Tax compliance and tax morale

A third line of research deals with the behavioural aspects of tax compliance and tax morale (Pickhardt & Prinz, 2014; Slemrod, 2018; Torgler, 2003). This literature is based on the assumption that sanctions alone cannot fully explain compliance and that taxpayers are motivated to meet their obligations by signs of government performance, feelings of trust, perceptions of fairness and legitimacy, and other individual and group dispositions. Behavioural studies have mushroomed in recent years, largely due to improved data availability, greater ease in conducting experiments and the "randomised control trials" (RCTs) that are often embedded in tax collection processes (Alm, 2019; OECD, 2019c).

"Tax compliance" basically refers to the degree to which taxpayers meet their payment obligations. At the aggregation level, compliance is measured as the ratio of taxes owed to taxes effectively collected, and is part of the "tax effort" or "tax gap" debate (see Mawejje & Sebudde, 2019). From the micro-perspective of individual taxpayers, the classical tax evasion model of Allingham and Sandmo (1972) defines tax compliance as a function of

4 The study is part of a research project on "The Politics of Domestic Resource Mobilization for Social Development" implemented by the United Nations Research Institute for Social Development (UNRISD), which ran from 2011 to 2015 and provided country-level evidence on Bolivia and Nicaragua in Latin America, and Uganda and Zimbabwe in Africa. See UNRISD (2016, pp. 167-195) for a broader discussion of domestic resource mobilisation and revenue bargaining.

the penalty expected for underreporting income. According to their model, without tax audits and sanctions, there would be zero compliance.

Since Levi (1988) introduced the concept of "quasi-voluntary" tax compliance in exchange for public services, the motivational aspects of this relationship have been the object of academic scrutiny. To capture these aspects, Kirchler, Hoelzl and Wahl (2008) introduced the "slippery slope" framework, which relates tax authorities' power to enforce compliance to taxpayer trust regarding their legitimacy. Weak power and lack of trust clearly create a slippery slope towards non-compliance. Prichard, Custers, Dom, Davenport and Roscitt (2019) recently developed a concept that incorporates enforcement, facilitation and trust as key elements of tax compliance, with a specific focus on developing countries.

Empirical research shows that legitimacy beliefs and trust in politicians, institutions and other members of society measurably impact the willingness to pay taxes and attitudes towards tax evasion (Levi, Sacks, & Tyler, 2009). Berens and von Schiller (2017) observe that individual support for progressive income taxation depends on the level of trust in political institutions and their commitment to deliver public services. Koumpias, Leonardo and Martinez-Vazquez (2020) provide evidence that trust in government organisations positively influences tax morale – particularly trust in organisations that implement and deliver public goods and services. Survey data studied by Gangl, Hartl, Hofmann and Berkics (2019) and experimental research by Batrancea et al. (2019) test the slippery slope framework and corroborate the assumption that power and trust are positively associated with tax compliance.

The strand of tax research literature that relies most on experimental designs focuses on tax compliance and morale. While most experimental research is conducted in industrialised societies (Alm, Bloomquist, & McKee, 2016; Bott, Cappelen, Sørensen, & Tungodden, 2017; Doerrenberg & Peichl, 2018; Koessler, Torgler, Feld, & Frey, 2018), more and more studies explore "nudging" and tax compliance in developing countries (Castro & Scartascini, 2013; Flores-Macías, 2016; Mascagni, 2018). Some studies conduct survey experiments in several countries (see Sjoberg, Mellon, Peixoto, Hemker, & Tsai, 2019).

Empirical evidence generated by this research indicates that taxpayers respond to nudging by adjusting their compliance. However, there is little evidence of behavioural shifts with regard to long-term tax compliance. A recent working paper by Antinyan and Asatryan (2019) presents findings from a meta-analysis of more than 40 experimental studies. They show that deterrence messages produce larger effects than positive appellations but that, all in all, nudging effects are small and probably rather short-lived.

As can be gathered from this brief account, behavioural and motivational dispositions driving tax compliance and tax morale are significant elements of fiscal contracts. Compliance, which involves formal enforcement, political facilitation and trust, is a particularly important "bridging concept" that helps us link the academic debate about the fiscal contract to more recent research on e-government and tax digitalisation (Kochanova et al., 2020). This will be examined in more detail in the following section.

## 3 Digitalisation and taxation

Tax experts agree that digitalisation changes the way tax administrations perform. But there is no consensus about whether it should be considered a truly transformative factor or a technical enabler of change. This largely depends on how present-day tax systems are perceived. Khwaja, Awasthi and Loeprick observe:

> It may sound paradoxical, but the main focus of a modern system of revenue administration is not to collect taxes. In a modern tax system based on self-assessment and voluntary compliance, tax liabilities are assessed by taxpayers themselves and paid through banks or the state treasury system. The main functions of the revenue administration are (a) to manage tax compliance in order to detect and prevent delinquent behaviour and (b) to provide taxpayer service and education in order to help taxpayers to discharge their tax obligations with ease and with the least complexity and compliance burden. (Khwaja, Awasthi, & Loeprick, 2011, p. 1)

In such an environment, digitalisation would primarily be seen as a provider of technical solutions to improve the efficiency and effectiveness of a well-functioning system.

However, few tax systems fit this description of “modern”. Low- and middle-income countries in particular are often characterised by weak fiscal states and exclusionary fiscal contracts, as two recent volumes on taxation in Latin America and Africa confirm (Flores-Macías, 2019; Prichard, 2019). This typically results from a combination of factors, including high dependence on agricultural and natural resource exports, unequal distribution of income, wealth and political power, low public administration capacity, deficient public infrastructure, low levels of political trust and weakly legitimised development models.

In such environments, digitalisation could offer the prospect of fundamentally changing the rules of the game by boosting the capacity of tax administrations and improving conditions for tax compliance. However, it could also reduce equity among taxpayers and create new avenues for coercion and manipulation. This can happen when some taxpayers obtain larger efficiency gains from digitalisation than others, public agencies use new data sources to effectively curtail basic freedoms of citizens, or individual technology providers dominate the public infrastructure. Digitalisation transforms tax systems at two different but related levels: (i) Digitalisation of the economy challenges many aspects of conventional tax collection, while (ii) digitalisation of the government – particularly revenue agencies – profoundly changes government-taxpayer relations. The following sections provide an overview of these aspects.

### 3.1 Digitalisation of the economy

Digitalisation of the economy has made economic globalisation more dynamic by introducing new business models (such as platform and sharing economies, digital financial services and user-generated value), increasing the speed and ease of domestic and cross-border transactions and further enhancing the relevance of intangible assets (Chen, 2019; IMF, 2019). A key paradigm of international taxation – levying taxes where value is created – is being challenged by new business models that generate value without permanent establishment (Olbert & Spengel, 2019). At the same time, data has been identified as a significant value driver in the digital economy, and the ability to aggregate and analyse large

amounts of data has become a key feature of business models that seek to obtain value from users' digital data trails (Becker, Englisch, & Schanz, 2019; Langley & Leyshon, 2020). The internet is evolving from a system that transfers information to one that transfers value. This process is largely driven by new digital financial services, including digital and mobile payments, remittances, credits and insurance (Ainsworth & Viitasaari, 2017; Gabor & Brooks, 2017; Pazarbasioglu et al., 2020).

Revenue agencies are pressured to mirror the growing complexity of international business relations. On one hand, the rapidly expanding exchange of tax information across borders requires tax authorities to redesign internal processes and enhance their data collection and management capabilities.[5] On the other hand, increasing taxation efficiency and lowering compliance costs for taxpayers have become crucial for international competitiveness. While public debate and policy-making about taxing the digitalised economy have been promoted by the Organisation for Economic Co-operation and Development (OECD 2019a; 2019b), the process has been stymied by the US government decision, in June 2020, to withdraw from OECD-sponsored multilateral talks on taxing the digitalised economy. The decision was mainly motivated by the wish to protect US technology companies from being taxed abroad.[6]

The US move may also reflect the fact that a number of countries have announced or introduced new domestic measures to tax the digital economy. Grondona, Chowdhary and Uribe (2020) provide an overview. They distinguish (i) taxes levied on the provision of digital services; (ii) taxes on "significant economic presence", where profitable transactions take place without the company's physical presence; (iii) withholding taxes on digital transactions; and (iv) taxes on diverted profits to counter abusive tax-planning practices. Apart from a number of European countries, several states in Africa (Nigeria, Kenya and Zimbabwe), Asia (India, Indonesia, Malaysia and Vietnam) and Latin America (Costa Rica, Mexico and Uruguay) have also introduced such measures.

Although the way digitalisation impacts domestic resource mobilisation is highly relevant for developing countries, little research has been conducted on this topic. An incipient debate deals with the taxation of digitalised services (see Katz, 2015 for an overview). Among them, digital financial services ("FinTech") have been identified as potentially driving economic inclusion and poverty reduction. FinTech covers digital and mobile payments, cryptocurrencies and distributed-ledger technology ("blockchain"), algorithmic asset management, crowdfunding, peer-to-peer lending and credit risk analysis (Langley & Leyshon, 2020). The introduction of digital and mobile payments has already profoundly transformed finance systems in developing countries. Several papers explore the role of mobile money transactions in taxation, as well as taxation of those transactions (Clifford, 2020; Fuchs, Musuku, & Symington, 2016; Ndung'u, 2017, 2019; Wasunna & Frydrych, 2017).

Located at Université Clermont Auvergne, the Centre d'Études et de Recherches sur le Développement International (CERDI) has produced several insightful studies on linkages

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5 Beer, Coelho and Leduc (2019) observe that the automatic exchange of information between tax authorities, in place since 2017-2018, has already led to an average 25 per cent reduction in foreign-owned deposits in offshore jurisdictions.

6 See Rappeport, Swanson, Tankersley, & Alderman (2020).

between internet usage and taxation: Gnangnon and Brun (2018) analyse how closing the internet gap mobilises non-resource tax revenues. They show that in both developing and developed countries, reducing the gap can enhance non-resource tax revenues by increasing international trade. The impact appears to be higher in low-income countries than in middle- or high-income countries. In another paper, Gnangnon and Brun (2019) confirm that internet usage drives change towards non-resource taxes, again mostly in low-income countries. The internet can help governments reduce their dependence on revenue from natural resources, particularly in resource-rich countries. Gnangnon (2020) analyses the impact of internet usage on tax reform in developing countries from 1995 to 2015, and shows that internet usage has eased tax system modernisation by facilitating the shift from taxes on international trade towards domestic indirect taxes.

These papers take into account how internet usage and internet access directly impact domestic revenue mobilisation, but do not address the indirect effects of a tax administration's increased efficiency or improvements in tax policy. Furthermore, this research relies on macro data, which does not allow for exploring the impact of digitalisation on taxpayer behaviour or revenue authority operations. This could be done by accessing taxpayer data from declarations, payments and the use of financial services, or conducting surveys to assess how digitalisation affects perceptions and attitudes. Academic research about these relationships is discussed in the following section.

## 3.2 Tax system digitalisation

The second transformation of tax systems through the strategic and coordinated use of digital technologies in public management (e-government) and tax administrations changes the nature of domestic tax systems in terms of the internal workings of revenue agencies, their cooperation with other public bodies and their relations to taxpayers (Awasthi et al., 2019; Lindgren, Madsen, Hofmann, & Melin, 2019). Presumably the impacts of these processes on the contents, bargaining patterns and institutional set-ups of the fiscal contract are far-reaching (see OECD, 2018) – albeit insufficiently researched.

Tax authorities envision a time when non-compliance is simply no longer an option because of real-time, verifiable tracking of business transactions (domestic as well as cross-border) in combination with automated processes and advanced analytics. In a recent OECD guide to implementing application programming interfaces (APIs),[7] an Australian tax commissioner succinctly observed: "The digitisation of our economies allows us to now imagine a world where 'tax just happens' as a by-product of people going about their normal business. [...] We can now begin to craft a new reality where services are seamlessly integrated and where the integrity of the broader system is assured within these integrated services" (OECD Forum on Tax Administration, 2019, p. 3).

One factor driving these changes is the increased amount of data managed by tax authorities (OECD, 2016a). Data analytics allows revenue agencies to obtain detailed and timely

7 APIs are computing interfaces that allow different kinds of software to interact. They are a key technology for ensuring the interoperability of different applications and operation systems, for instance, between revenue systems, digital payment platforms and other service providers. See de Souza, Redmiles, Cheng, Millen and Patterson (2004).

information on taxpayers, which gives them more control over the whole taxation process. Some authors believe this could lead to significant improvements in tax administration (see Pijnenburg, Kowalczyk, & van der Hel-van Dijk, 2017). At the systemic level, digitalisation could eliminate informal, highly personalised tax negotiations between powerful corporate actors or rich individuals and political decision-makers – and lead to a more rules-based and impartial system. On a personal or relational level, if the digitalisation of tax payments became more predictable and less subject to informal negotiations and political connections, trust in government could increase. This would favour broad fiscal contracts based on principles of tax fairness.

However, in the context of non-democratic politics, deficient market regulation and the weak rule of law, such new capacities of revenue agencies could be part of "surveillance capitalism" (Zuboff, 2019), in which public institutions and big tech firms use broad institutional settings to control citizens and markets. In this case, digitalisation would help to perpetuate exclusionary fiscal contracts based on rent-seeking and restricted access to political decision-making.

Such contrasting perspectives used to be matters for the distant – and uncertain – future. This is no longer the case. Today, many countries are implementing electronic invoicing (e-invoicing) (Barreix & Zambrano, 2018) and paving the way for radical changes in tax collection, auditing and more. Countries like Brazil, India and China are linking digital or mobile tax payments to other public services, using combined data-based services (for eSocial in Brazil, see PwC, 2016; for biometric IDs and social coding in India and China, see Shahin & Zheng, 2020).

The digitalisation of tax administration encompasses the application of digital solutions to all aspects of taxation. The management of registers (of taxpayers, tax objects, beneficial owners, tax rulings, etc.), the internal organisation of tax administrations (automation, front office/back office relations), the collection process (e-filing, e-billing, e-invoicing, e-payments), compliance management and taxpayer services (risk management and auditing, online information services), and the management of liabilities, appeals and reimbursements are all being heavily debated. New fields of tax-related digitalisation include information exchange with other domestic or foreign agencies, the provision of data-driven services to other public or private sector entities and the establishment of joint platforms with other public service providers (see Junquera-Varela et al., 2017, pp. 45-72; OECD, 2016b).

An emerging topic of discussion concerns the fiscal contract relationship. Most studies explore government-to-business (G2B) relations with respect to specific taxes. Ali, Shifa, Shimeles and Woldeyes (2015) and Mascagni, Mengistu and Woldeyes (2018) show that in Ethiopia, the use of electronic sales registration machines (ESRMs) improves tax compliance. ESRMs record sales, print receipts and store information on the tax authority's server, permitting real-time insight into a company's turnover and the ability to monitor reported values and the amount of tax declared and paid. Ali et al. (2015) show that using ESRMs positively impacts the amount of value-added tax (VAT) collected. However, revenue gains are also shown to quickly decrease after ESRMs are implemented because the system is apparently unable to prevent sales bypassing cash registers. A related paper by Eilu (2018) analyses the difficulties Kenya and Tanzania face while setting up electronic billing devices for VAT.

Most studies on the digitalisation of tax systems deal with technical perspectives on public management issues or macro-level analyses with regard to revenue collection. For instance, Barreix and Zambrano (2018) present a collection of studies on the introduction of e-invoicing in Latin America. They first discuss the state of e-invoicing and then explain the prerequisites for its successful implementation. Finally, they use an impact analysis of five countries (Argentina, Brazil, Ecuador, Mexico and Uruguay) to show that e-invoicing can improve tax revenue collection. However, like the Ethiopian case presented above, initial evidence indicates that revenue gains eventually level off or are even reversed as taxpayers learn how to flout the new conditions. In contrast, Bellon et al. (2019) show that in Peru, the introduction of e-invoicing has been accompanied by a systematic increase in company sales (and added value), which boosts VAT revenue. The results suggest that e-invoicing improves VAT compliance and may also have implications for corporate income tax (CIT), because it tends to increase declared value added.

The connection between e-filing and the costs of tax compliance incurred by small and medium-sized businesses is explored in a World Bank research paper on South Africa, Ukraine and Nepal (Yılmaz & Coolidge, 2013). The authors show that for many small firms, the initial costs of adopting new technologies can be quite high, and may reduce the uptake and legitimacy of the whole reform process.

Finally, a few studies shed light on citizen acceptance of tax digitalisation, specifically e-filing and payments. Several studies are based on surveys of taxpayers or intermediaries. Ireland's Revenue Online Service "has led to more efficient timely processing of tax returns, faster processing of tax repayments, […] redeployment of Revenue resources, increased accuracy in calculation of tax liabilities, and decreased uncertainty for taxpayers" (Robbins, Mulligan, & Keenan, 2015, p. 387). A study about Thailand shows that taxpayer acceptance of e-filing and e-payment systems is affected by the anticipated performance, competence and credibility of tax authorities (Bhuasiri, Zo, Lee, & Ciganek, 2016). Similarly, on introducing online person-to-government payments, "government agencies in Kenya have reported both increased revenue collections and citizen compliance as well as reduced costs, especially in the long run" (Wasunna & Frydrych, 2017, p. 6). Dečman and Klun (2015) provide evidence of increased user satisfaction following the introduction of electronic tax debt recovery in Slovenia. In this case and others, lower compliance costs and user-friendliness seem to be key to winning acceptance for the new technologies.

Multiple levels of social and institutional trust combined with well-designed technology are crucial for user uptake by both citizens and business. As Tsikas puts it:

> The determinants of intrinsic (or voluntary) tax compliance, for example the equity and complexity of the tax system, the efficiency and reliability of the government and the absence of corruption, can be understood as characteristic features of "good" institutions. When faced with high institutional quality, people seem to feel more obliged to pay taxes. Put differently, institutions need to appear trustworthy. (Tsikas, 2017, p. 2)

# 4 Key technologies in tax digitalisation

What are the key digital technologies driving changes in the fiscal contract? In its 2019 flagship report, “Towards Our Common Digital Future”, the German Advisory Council on Global Change (WBGU, 2019, pp. 65-86) identifies the Internet of Things (IoT), big data, artificial intelligence (AI, or machine learning) and blockchain among the technologies expected to cause far-reaching societal and technological changes. Ainsworth and Viitasaari (2017) and Ainsworth and Shact (2016) discuss blockchain as a “foundational technology” that is starting to change payroll and VAT systems. Alper and Miktus (2019) describe how mobile networks have evolved from the first generation of voice applications to the fourth generation (4G) of fast and secure data transfers and the new fifth generation (5G) with enhanced mobile broadband for new applications.

For obvious reasons, empirical research should focus on technologies that are already implemented in a large number of developing countries. The IoT, blockchain and 5G networks do not belong to this category. In contrast, mobile payment systems, big data and AI already play critical roles in tax administration reforms worldwide, so it is possible to empirically assess their impact on the fiscal contract.

When applied to tax systems, key technologies generate far-reaching impacts in at least one of two dimensions: Either they enhance the power of tax authorities vis-à-vis taxpayers by improving revenue agencies’ information basis or they enhance their service quality by raising overall efficiency and lowering compliance costs for taxpayers. The latter includes reducing corruption in tax systems and protecting taxpayers from other types of discretionary or unlawful action by tax authorities.

Key technologies also concern the tax subjects. Business taxation should be distinguished from the taxation of private households. Most significantly, the density and frequency of G2B tax relations is much higher than that between governments and citizens (G2C). In many low- and middle-income countries, only a minority of private households are registered taxpayers, and those who are liable to pay income tax have only sporadic contact with their revenue agencies. In contrast, businesses interact much more frequently with tax authorities, not only with regard to CIT, but also VAT or sales taxes, customs duties, withholding taxes, social contributions, and so forth. Thus, compliance costs and efficiency are much more important for G2B relations, and the possible gains from digitalisation (using automated processes and online services) are much higher. This is why digital applications are often first introduced in G2B contexts.

At the same time, digital technologies in G2C relations can heavily impact perceptions of tax fairness, efficiency and certainty. The automation of processes, digitalisation of registers and taxpayer ID systems, and provision of digitalised taxpayer services such as online filing and payment systems can be expected to affect the perceptions, attitudes and behaviour of citizen taxpayers. Most fiscal contract studies focus on G2C relations, which must be included in empirical research strategies.

Based on the literature review presented above, Table 1 provides an overview of the digital technologies used in a growing number of countries that are likely to have far-reaching impacts on tax authority-taxpayer relations.

| Table 1: Key digital taxation technologies | | |
|---|---|---|
| | **Focus on enhancing the power of tax authorities** | **Focus on enhancing service quality and lowering compliance costs** |
| **Government-to-business (G2B)** | • Electronic invoicing & billing (informational aspect)<br>• Big data analytics using different data sources<br>• Electronic registers (business, customs, etc.) | • Electronic invoicing (regarding compliance costs)<br>• Automation of processes<br>• Digital and mobile payments<br>• Data-driven bundling of services |
| **Government-to-citizens (G2C)** | • Electronic registers (property, beneficial ownership)<br>• Electronic IDs<br>• Exchange of information between tax authorities and with other government agencies | • E-filing<br>• Digital and mobile payments<br>• Automation of processes |
| Source: Author | | |

The adoption of new technologies can be a highly politicised process in which reforms are fiercely resisted. A digitalised tax administration that features greater predictability and transparency should also be in the interest of business owners. However, in many countries with weak tax administrations, big companies (both domestic and multinational) use their bargaining power to negotiate highly beneficial tax deals which they want to keep (see Durst, 2019). Likewise, politicians who can access rents through informal deals with businesses do not have strong incentives to implement reforms that increase transparency (Bussell, 2012). In weak states, highly centralised administrative structures make political capture of the bureaucracy even more likely. Politicians who benefit from a captured bureaucracy tend to not be interested in reforms, including tax system digitalisation, which could cost them their benefits.

# 5 A framework for empirical analysis

How does the use of key digital technologies in tax systems affect fiscal contracts, particularly in developing countries? This section presents a framework for disentangling and relating this question to the respective academic debates and their current blind spots. Empirically addressing the question involves assessing changes in the institutional set-up and operation of revenue agencies associated with digitalisation as well as examining the extent to which digitalisation affects taxpayer perceptions of fairness. A third research agenda explores the impact of digitalisation on taxpayer behaviour, especially tax compliance and investment. A fourth line of research analyses how digitalisation impacts political attitudes and behaviour.

## 5.1 The impact of digitalisation on revenue agencies

Any empirical study that focuses on the linkages between digitalisation and taxation has to first address a basic question: How do revenue agencies change as a result of digitalisation?

The literature on tax digitalisation and e-government presented above leads us to expect such changes to occur in three dimensions: internal governance models, operational modalities and patterns of interaction.

- Digitalisation leads revenue agencies to change their internal governance models, for instance by setting up new information technology (IT) or data management departments. Opening new channels for online access can cause units that are engaged in face-to-face customer relations to lose staff and rank, with units responsible for automated processes or data analysis gaining importance. Digitalisation has also been identified as accompanying the creation of semi-autonomous revenue agencies that enjoy a certain autonomy with regard to investments, staffing and political interference (von Haldenwang et al., 2009).

- Revenue agencies change their operational modalities, sometimes while automating processes. In the best of all worlds, new modalities are more efficient, faster and easier to monitor, but this is neither a necessary nor an automatic outcome of digitalisation. Revenue agencies would need to employ data specialists and other experts, who are not always available on the labour market – particularly in poorer countries. Hence, it is likely that human resources policies, salary structures and labour conditions would also undergo profound changes.

- Finally, revenue agencies change their political interactions and ways of dealing with other public agencies and taxpayers. Higher levels of collection efficiency and new methods of reporting can impact relations with political leaders. Interactions with other public agencies could include agreeing to combine service provisions and use revenue agencies as major data hubs. Interactions with taxpayers are transformed through the growing relevance of online transactions and mobile applications, including payment systems.

As shown above, empirical research about these changes largely relies on case-specific process tracing and inductive inference with limited external validity. Few comparative studies have been made.

## 5.2 The impact of digitalisation on perceptions of tax fairness

Based on this descriptive analysis, a second line of research deals with the question: Does tax digitalisation lead to changing perceptions of tax fairness? Such research engages the literature on survey-based inquiry and motivations for tax compliance mentioned in Section 2. With several possible causalities driving this relationship, it makes sense to assess perceptions of tax fairness for business and citizens separately. Recent research indicates that tax collection efficiency, tax certainty and low levels of corruption are associated with higher levels of trust in government (Gangl et al., 2019; Koumpias et al., 2020; Santa, MacDonald, & Ferrer, 2019).

In G2B tax relations, a key issue shaping perceptions of fairness is the degree to which specific tax systems are considered to distort markets. While taxes necessarily cause some market distortion, the degree depends on numerous factors, some of which can be influenced by digitalisation. In principle, digitalisation could reduce distortion by lowering compliance costs, increasing transparency, reducing space for discretionary action and tax officials'

corrupt behaviour, as well as helping to close loopholes for tax avoidance and evasion. At the same time, however, it can be used to increase the power of tax authorities without any concomitant improvements in public service delivery – which would be detrimental to any perception of tax fairness.

With regard to G2C, survey data can be used to explore if tax system digitalisation causes citizens to perceive greater horizontal and vertical equity. Another issue concerns customer satisfaction when dealing with tax authorities. In both cases, perceptions of corruption in tax systems should also be assessed. All in all, digitalisation associated with clear improvements in public service can be expected to increase perceptions of tax fairness, whereas digitalisation mainly linked to shifting power to tax authorities reduces them. These relationships are likely to be influenced by the characteristics of political regimes, as Ricciuti et al. (2019) and others show. Digitalisation can be assumed to be considered less threatening if tax agencies are embedded in a functional regime of checks and balances and the democratic rule of law.

## 5.3 The impact of digitalisation on taxpayer behaviour

A third line of research asks if tax digitalisation is associated with changes in tax compliance and investment. This research question is partly linked to perceptions of tax fairness: Taxpayers who consider a tax system as highly unfair are more inclined to justify tax evasion. They also tend to regard taxation as a negative factor in their investment decisions. However, the relationship between digitalisation and compliance is also driven by other factors, most notably the perception of risk, ease of compliance and effort needed to dodge taxes. This line of research builds on the literature on tax compliance behaviour. It assumes that digitalisation lowers compliance costs and increases the efficiency of taxation, and that taxpayers may adapt their behaviour to changing patterns of tax collection. Some studies have found such adaptive behaviour in the context of e-billing and e-invoicing, as discussed in Section 3 (see Ali et al., 2015; Barreix & Zambrano, 2018).

Research on taxpayer behaviour should study tax compliance in G2B and G2C relations separately. For G2B, several research strategies seem feasible: At the macro level, data on VAT and CIT collection could be useful for measuring changes in aggregate compliance. However, that data may be of limited use in time series analyses because digitalisation impacts data quality and availability. Values can change as a result of changes in compliance or measurement. Digital tax registers can be used to show the broadening of tax bases, while data from electronic cash registers could reveal changes in VAT collection. Surveys can provide relevant information on the evolution of compliance costs for business. Firm data has recently been used in several studies that seek to assess the scale of tax avoidance in cross-border transactions (Clausing, 2020; Wier & Reynolds, 2018). Some revenue authorities rely on geographical information system (GIS) data to track economic activities; research could use this data to explore changes in tax compliance. With regard to G2C, data on the collection of PIT and property tax could be used, though it should be said that many countries do not levy any property taxes.

Research should also examine how tax digitalisation impacts investment. Some factors often associated with digitalisation, such as lower compliance costs, better protection for businesses from discretionary action by tax authorities and lower levels of corruption,

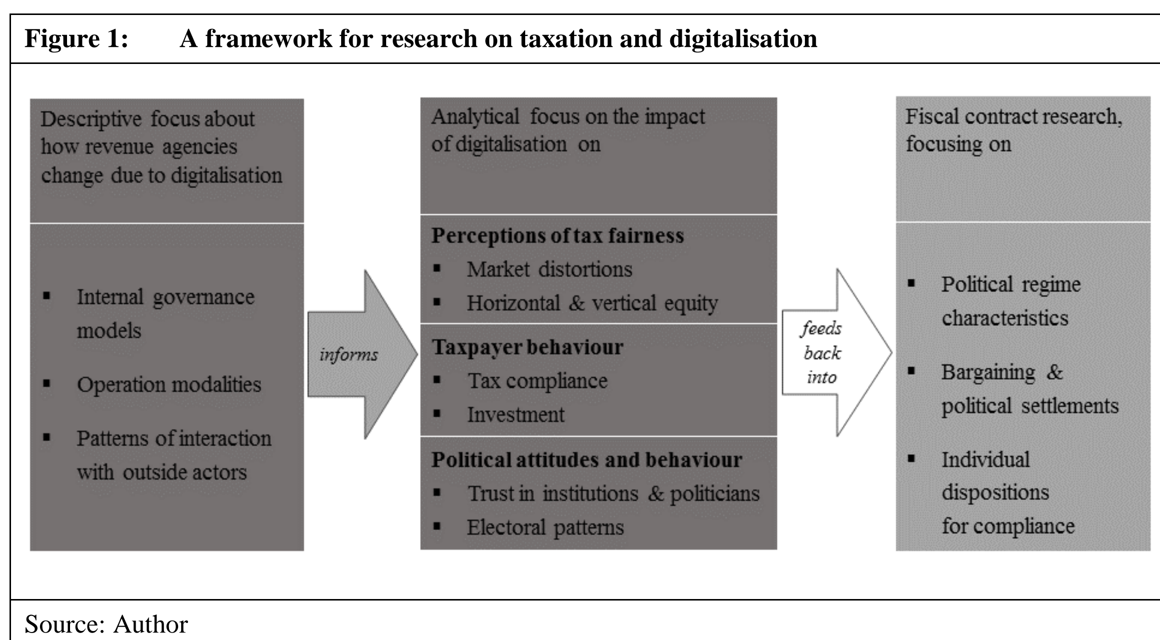
increase investment. At the same time, however, more efficient tax collection through digitalisation can cause business elites to reassess the fiscal contract and perhaps threaten to withdraw from the market (Bates & Lien, 1985).

## 5.4 The impact of digitalisation on political attitudes and political behaviour

The fourth research question focused on G2C relations addresses changes in political attitudes and behaviour after tax digitalisation. It assumes that perceptions of changes to taxpayer services and in levels of corruption, tax fairness, control and enforcement impact political behaviour. Increased tax efficiency could enhance compliance and increase pressure on the delivery side of the fiscal contract, raising resistance to bad governance and deficient service delivery. This research builds on literature about the politics of taxation and the bargaining and political settlements discussed above.

Findings from the four lines of inquiry feed into current debates about the fiscal contract and update them regarding the changing nature of taxation. For instance, research focusing on how revenue agencies change due to digitalisation connects to debates on state capacity and its impact on the fiscal contract (Baskaran & Bigsten, 2013; Besley & Persson, 2009; Kochanova et al., 2020). Research studying perceptions of tax fairness provides inputs to current debates about revenue bargaining and individual motivations for tax compliance (Flores-Macías, 2016; Gangl et al., 2019; Sjoberg et al., 2019). Evidence about taxpayer behaviour (tax compliance and investment) regarding tax digitalisation could inform research on political settlements and debates about taxation and legitimation (Hassan & Prichard, 2016; Kjær et al., 2017; von Haldenwang, 2017) and behavioural approaches to tax compliance (Alm, 2019; Bellon et al., 2019; Prichard et al., 2019). Finally, research linking digitalisation to changes in political attitudes and behaviour could produce important insights into the relevance of political regime properties for taxation (Cheibub, 1998; Ricciuti et al., 2019; von Schiller, 2018). Figure 1 shows the contours of the research agenda sketched out in this section.

**Figure 1: A framework for research on taxation and digitalisation**




Source: Author

A final question refers to the research agenda's territorial focus. Relying on high-income countries could be justified by easier access to data, for instance at the level of individual firms (see Tørsløv, Wier, & Zucman, 2020). However, this paper proposes a research agenda that specifically focuses on developing countries for several reasons. First, domestic revenue mobilisation is a bigger issue in these countries, where tax systems tend to be less effective and efficient compared with high-income countries. Furthermore, while lower levels of infrastructure development, state capacity and human resources create important bottlenecks to innovation, they also offer the possibility of leapfrogging and making huge efficiency gains. Today, developing countries are pressured to modernise their tax systems in order to comply with new standards and regulations of international tax cooperation, such as exchanging information and implementing the common reporting standard (CRS). Also, as mentioned, developing countries' tax systems share characteristics that set them apart from high-income countries, in particular, their greater reliance on consumption and CITs and the lower relevance of PITs and social security contributions. Not least, a larger research and knowledge gap remains with regard to developing countries than industrialised countries of the global North.

## 6 Conclusion

Today, the transformative nature of digitalisation in many areas of governance – including taxation – is widely acknowledged. However, the patterns and specific dynamics of changes entailed by this transformation remain largely unknown. This paper gives an overview of two dynamic academic research areas, one examining the fiscal contract between states and taxpayers and the other, the impact of digital technologies on tax systems. The literature review has shown that these two research areas are still largely unconnected – both conceptually and empirically. This constitutes an important research gap, as digitalisation is causing fundamental shifts in state-taxpayer relations and the fiscal contracts that underlie them.

The paper presents a framework for exploring the relationship between the digitalisation of tax systems and the institutional, attitudinal and behavioural dimensions of the fiscal contract. This framework should make it possible to assess the extent to which key digital technologies change how tax authorities operate internally and cooperate with other public agencies and, above all, how they interact with business and citizen taxpayers. These changes can be related to perceptions of tax fairness, attitudes towards (tax) authorities and taxpayer behaviour in terms of tax compliance, investment and political behaviour. Such research should help us to better understand digitalisation's implications for the fiscal contract, with a focus on developing countries.

The insights generated by this research could also contribute to a broader debate on the current reconfiguration of states and societies. The capacity to gather data and derive valuable information from it is changing our everyday realities, economies and governments. Societies, rather than individual companies or rulers, must discuss and decide rules for this transformation that are rooted in individual rights, legitimacy and the rule of law. Evidence about how digitalisation impacts fiscal contracts could provide relevant insights to this ongoing discussion.

The EU Court of Justice's recent decision to invalidate the EU-US Data Protection Shield (the "Privacy Shield")[8] shows that this debate goes beyond national action. While the power to tax remains a core pillar of the power to rule, taxation is no longer a purely national issue, and the capacity of governments to agree on meaningful international standards and regulations will fundamentally shape digitalised tax systems worldwide.

As in many – if not all – other dimensions of politics and public management, the Covid-19 pandemic presents itself as an additional transformative factor. First, it greatly increases fiscal pressure on all governments as revenues implode and spending needs explode. Second, social distancing, quarantines and lockdowns have been accelerating the digitalisation of our economies, with the platform economy and companies that offer digital services among the few economic actors to benefit from the pandemic. Governments are similarly experiencing increased use of their online service portfolios. Finally, the pandemic has stimulated a general reassessment of the role of the state. Countries with good public health systems and good governance seem to fare better at confronting the virus. Citizens support bold and swift government action that is lawful and well communicated. These factors will combine to further drive the digitalisation of our tax systems and the reconfiguration of our fiscal contracts.

8 See Court of Justice of the European Union (2020).

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