The Early Modern Origins of Contemporary Tax Systems

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What explains the variation in modern tax systems? This question has driven many classic studies that have generally emphasized the key role that institutions have played in shaping tax outcomes. However, the institutions that have been seen to be key are those of relatively recent times: regime type, constitutional structure, electoral systems, and parties. In this paper we argue that contemporary tax systems have deeper institutional origins, in many cases stretching back to the early modern period. In this period, states struggled with elites over the distribution of taxation leading to patterns of variation that we believe map onto contemporary tax outcomes. Specifically, the early modern period was marked by distributional struggles between monarchs and elites over the amount and means of taxation. We argue that these early modern distributional struggles set in motion path dependent development through the mechanisms of state capacity and social norms that can be seen in the size and structure of modern tax systems. Using a new measure of the outcome of struggles between rulers and elites in the early modern period we show the effect of this period on the size and distribution of the tax burden in contemporary European states.

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Introduction

Sweden is often seen as one of the strongest and most stable tax systems, able to collect high proportions of tax from its citizens and use this money to fund a substantial welfare state. According to Steinmo ‘the hallmarks of the Swedish tax system has been its broad base, its stability and its high yield’ (1993, 41). While his explanations for this exceptional tax performance focuses on the institutional framework established in the last one hundred years, the modern Swedish tax state is remarkably similar to the early modern tax state that emerged in the seventeenth century. From the 1530s onwards, the state began replacing the medieval fiscal systems with a centralized, rationalized system of taxation that brought most of the population within the tax net. As an innovator in creating the first cadastral map, surveying individual land parcels, in 1628 the state had acquired the information necessary to directly “supervise and scrutinize the peasants” (Lindkvist 1987, 62). With this formidable fiscal monitoring capacity the Swedish state had created a broad-based tax system that extended to the bulk of the population at a much earlier point than most states. This capacity allowed it to extract taxes from a relatively poor economy sufficient to fighting wars with neighboring cpuntries and extending its imperial ambitions in mainland Europe. Arguably in the early modern period it was already one of the most impressive tax states.

The continuity between the early modern and contemporary Swedish tax state raises questions about how far back we need to look to explain the variation in tax outcomes between European states. It suggests that, although much of the literature has emphasized the role of institutions in the modern period – regime type, constitutional structure, electoral systems, and parties – we may in fact have to also consider the emergence of modern tax systems in longer historical perspective and examine, long before the advent of democracy, whether or not European states were already on different trajectories.

This paper consequently analyzes to what extent and in what ways contemporary tax systems in European states may have their origins in the early modern period. At this time, we argue, the rulers of European states were engaged in struggles with elites over the size and means of taxation. The outcomes of these struggles – whether or not the state or elites prevailed – had consequences for the distribution of tax burden, the strength of the state and the relationship between ordinary people and the state. In brief we argue that where monarchs overcame elites they developed stronger states, capable of extracting more tax and projecting power evenly across social groups, and the state entered into a direct fiscal contract with social groups below elites, fostering norms of trust and higher tax morale. On the basis of these arguments we predict that the outcome of early modern tax struggles will have an effect on contemporary tax outcomes through the mechanisms of state capacity and social norms. We test this using a new measure that captures the outcomes of early modern tax struggles.

Our theoretical argument that the events in the early modern period still influence important contemporary outcomes finds support in the data. On average countries in which monarchs prevailed over elites have higher tax revenues, stronger state capacity and higher tax morale than countries where monarchs did not achieve a clear victory over their noble rivals.

The paper proceeds as follows: in the next section we review the extant literature on modern tax systems, which focuses on recent institutional characteristics. We then discuss taxation in the early modern period, drawing on the very rich literature which has analyzed the formative relationship between taxation, state-building and state-society relations in this period. We use this as the backdrop for a theoretical discussion that puts forward testable hypotheses. We then describe our empirical test and our results. We conclude with some thoughts on the implications of our argument.

Existing Explanations of Contemporary Tax Systems

Much of the classic literature in political science has tried to understand how we can explain variation in tax systems. Beyond the basic economic variables that clearly matter – the size and structure of the economy – the literature has focused on two main areas: the micro-behavioural foundations related to culture and societal norms and macro-institutional environment.

In terms of the micro-behavioural foundations of taxation, as originally modeled by economists, tax behavior was simply a function of the individual's calculation about the probability of being caught evading and the likely penalties (Alingham & Sandmo 1972). However, subsequent empirical studies have shown that some countries with low enforcement rates still have high compliance levels (Skinner & Slemrod 1985) suggesting that factors above and beyond coercion influenced tax behavior. The gap between existing theoretical models and observed behavior has been explained in terms of social norms – the 'emotional and behavioural propensities of individuals' (Elster 1989, 102). The existence of a norm in an individual's reference group – either to comply or to evade – was observed empirically to influence tax payers' behavior (Spicer & Lundstedt 1976). Aggregating from these micro-level perspectives, tax morale has been observed to vary across countries (Alm & Togler 2006).

The determinants of this norm, most often referred to as 'tax morale' (Pommerehne et al 1994), has subsequently become the focus of much of the tax behavior literature. The importance of the 'fiscal exchange' aspect of taxation is seen in most studies to be the critical factor in determining tax morale. In its earliest and most basic form, paying tax was conceived as 'exchanging purchasing power in the market in return for government service' (Spicer & Lundstadt 1976, 296). However, subsequent work showed that the important aspect was not just fiscal exchange but also fair exchange (Bordignon 1993): the perception that the tax burden was shared between the individual and other taxpayers in a fair manner (Spicer & Becker 1980) and that the public goods received in return were fair relative to the payments made (Becker et al 1987). From this viewpoint, unfair distribution of the tax burden and insufficient levels of public goods provision are seen to be the main factors that might undermine tax morale.

A second literature has focused on the political institutions that structure relations between society and state and thus determine how preferences translate into policy outcomes.

At the most basic level the institutional literature has considered the impact of regime type on tax outcomes. Many authors have argued for a positive relationship between tax and democracy as citizens become more willing to pay tax if they feel represented. It should, as Levi (1998) argues, reduce the transaction costs of taxing by making compliance 'quasi voluntary' and by building 'tax morale' (see also Pommerehne, Hart & Frey 1994). Citizens should be more willing to enter into a fiscal contract with the state, as they have more control over its actions and greater belief in its legitimacy (Levi, Sacks & Tyler, 2009). The existence of a fiscal bargain at the heart of the relationship between citizens and rulers has been demonstrated in cross country regression analysis (Ross, 2004); using citizen surveys (Fjeldstad, 2004); and experimental methods (Cummings et al, 2005).

However, the theoretical case for a positive relationship between tax and democracy has not received emphatic empirical confirmation. A number of quantitative studies have sought to establish the effect of regime time on the overall level of taxation. In one of the earliest studies, Cheibub (1998) found no significant evidence that regime type had any effect. A later study focused only on developing countries, found that democracies were better at taxing (Thies, 2004), while another found the opposite result (Fauvelle-Aymer, 1999). Boix (2001) did find support for the suggestions that democracies tax more, but only for countries above a certain income threshold. The empirical literature provides no clear answer on what the relationship between democracy and taxation is, but makes it clear that a straightforward positive relationship cannot be assumed.

When the universe of cases is limited only to the already consolidated Western democracies, the institutionalist literature has focused on how the variation in the institutions of democracy and the constitutional structure of states impacts on tax systems. Studies have found that the type of electoral system matters. Building on Meltzer Richard's theory that politicians in democracies will be decisively responsive to the redistributive preferences of the median voter (Meltzer & Richards 1981), some have shown how majoritarian systems that produce governments more distant from the median voter (Huber & Powell 1994), while proportional systems bring governments closer to the median voter and give voice to more diffuse interests (Wilensky 2002).

Others have focused on parties and party systems. Partisan politics is argued to matter for taxation with, as expected given the differing views of left and right wing parties on the size and activities of the state, a positive correlation between left wing parties and higher levels of taxation being observed in certain contexts (Allers et al 2001). However, there is also evidence to suggest that left wing governments have actually introduced more tax cuts than right wing ones in the last twenty years (Hallerberg and Basinger, 1998, 338). They have in some cases shifted their approach to taxation, seeing it as a means *towards* rather than a means *of* redistributing wealth. Party systems are also argued to matter: tax is higher in countries in which the dominant party controls a clear majority of the seats and in countries where the dominant party controls only a small minority of seats (Steinmo & Tolbert 1998).

In addition to political institutions, what Steinmo and Tolbert have called 'economic institutions' are seen to be important (1998, 169). By this they mean the degree of unionization and the structure of interest group representation which they and others have found to matter for taxation. Strong unionization and corporatist models that integrate labour into wage bargaining models are seen to have a positive impact on taxation (Alvarez, Garrett, & Lange, 1991; Crepaz, 1992; Gourevitch, 1986). Where, conversely, corporate interests are well organized and have access to the policy makers, such as in US, corporate lobby groups can be successful in bringing about changes to tax policy and in particular to securing exemptions (Quinn & Shapiro 1991).

Some of the most influential institutionalist accounts have tried to adopt a ‘whole systems’ approach, looking at how country level institutional structures in their totality affect tax. Steinmo’s classic work looked at how institutions structure how power is exercised and by provide the context that both determine how policy makers view the choices available to them and how policy will be implemented (1993). He argued that in the US the fragmentation of political power among the institutions that reforms have to pass through to enter into law has resulted in a low yield, inefficient tax system characterized by high levels of exemptions. By contrast, in Sweden an institutional system that is centralized and where governments negotiate policy pacts with different parties and groups within society has led to a tax regime that is high yield, stable and highly efficient. In the UK, although power is highly centralized, it swings between the two main parties with the result that the tax regime is characterized by a high degree of instability and a lack of continuity.

These findings resonate with other ‘whole systems’ approaches. Ljiphart and Crepaz (1991) argue that corporatism is linked with consensual political institutions and pluralism with marjoritarian ones and Steinmo and Tolbert (1998) show that both of these sets of institutions matter for taxation. Finally, Gerring et al (2005) argue that states with ‘centripetal’ constitutions (unitary states with parliamentary systems and proportional electoral systems) can collect more tax. A common thread in all of these approaches is the finding that it is polities that are both centralized (in terms of political power and union strength) and more representative that can collect more tax.

This literature has mostly focused on the modern period, and particularly the institutions of democracy, but has often drawn on research on taxation in earlier periods that has emphasized the role tax has played in the determining the kinds of political institutions that emerged in the Europe in the modern period. Tax has been seen to be central to the rise of both states and representative institutions. War has been identified as the origin of the revenue imperative, and the development of the state, to the need to go to war (Hintze, 1975; Tilly, 1992). Rulers, needing revenue to fight, had to raise tax, which necessitated the construction of the extractive infrastructure of the state. Brewer (1988) showed exactly how the need to collect tax led to the expansion of state capacity in early modern Britain, as the King began developing a Weberian bureaucracy in order to collect excise taxes. This expansion of power increasingly brought the state into conflict with citizens, who demanded concessions, in the form of representation and services, in return for tax compliance. This led to the emergence of fiscal contracts whereby citizens paid tax in return for services and used representative institutions to negotiate this contract and ensure it was enforced. (Tilly, 1992)

Within the context of this overarching account which places strong emphasis on war as the stimulating factor behind state-building and sees taxation as the central process in state formation, there have been attempts to map and explain variation between European states. Tilly (1992) has argued that there were important differences, determined by economic structure, between coercion and capital intensive paths of institutional development. Ertman (1977) has looked at how the sequencing of the onset of war and the establishment of representative institutions has impacted on state development trajectories. A number of studies have tested the hypotheses of this general literature specifically in the context of taxation. Karaman and Pamuk (2013) find that the centralized fiscal capacity of the state was determined by interaction effects between economic structure and political regime type in the context of warfare. Mirroring the literature on contemporary tax outcomes discussed above, Dincecco (2009) argues that centralized states with representative institutions were able to collect the most tax. Similarly, Kaiser and Linton (2010) argue that unified and powerful voting institutions stimulate higher state-building and tax collection.

While this literature has contributed richly to our understanding of tax outcomes in the early modern period, it does not explore what impact the variation between states found in that period may have on tax states today. In fact, there is a degree to which these studies assume that after the early modern period there is convergence between European states: Dincecco argues that 'fiscal centralization took place swiftly and permanently throughout much of the continent from 1789 onwards' (2009, 53). Tilly sees European states as having converged on a single model, the nation state (1992, 182-183). Although they emphasize and explore variation within the early modern period, they do not draw out whether or not this variation persisted in ways that can still be seen in modern states and contemporary tax outcomes. Here we begin to open up this period by exploring whether or not the historical struggles over tax in the early modern period might matter for tax outcomes, and suggesting possible mechanisms by which these struggles in the past might have effects today.

Taxation in the Early Modern Period

The early modern period was marked by distributional struggles between monarchs and elites over the amount and means of taxation. Monarchs wanted to rationalize and centralize tax collection, while landed elites resisted these reforms as they would undercut their social power at the local level and increase their tax burden. The outcome of these struggles varied across countries with some rulers managing to overcome noble resistance, and others failing to do so. The outcome of these struggles had distributional implications, as rationalized, centralized tax collection led to not only more tax being collected, but a fairer distribution of the tax burden. Here we discuss these struggles, and in the next section we then consider how they might have had long-term institutional legacies for contemporary tax states.

Early modern taxation was typically in the form of collective obligations on towns and villages, administered by local elites who could under-assess and apportion the burden to their own advantage, without interference by the central administration. The state had neither the capacity nor the information needed to collect taxes directly without using elites as intermediaries (Scott 1998, 38). This means of collecting tax gave elites privileges that were an intrinsic part of their local power and their position relative to the king. It also meant that the state had limited power in localities.

Within this context of decentralized, variable tax collection, monarchs had strong incentives and preferences to rationalize and centralize tax collection. The rational choice literature assumes rulers to be revenue maximizers (Levi 1988) and the historical institutionalist literature has emphasized the necessity for rulers of increasing tax revenue due to the pressures of war, particularly after the military revolution (Tilly 1992, Downing, 1992). What rulers needed to do to enable them to collect more tax is also clear from the literature: they needed to increase the capacity of institutions (Tilly 1992, Brewer, 1989), rationalize how taxes were levied and centralize powers of tax collection (Dincecco, 2009, Karam and Pamuk, 2013).

This brought rulers into conflict with landed elites who resisted these reforms as they would undercut their social power at the local level and increase their tax burden. Centralization of power, especially powers of taxation, had as part of these reforms the explicit goal of limiting the fiscal privileges and political “freedoms” of the clergy and of the elite (Alimento 2002, 122). They entailed the transfer to the state of the aristocracy’s coercion-based extractive capacity at the local level (Anderson, 1979). It also often involved the displacement of nobles as the key representatives of the state in the locality (Touzery 2002, 137). As a result these reforms were keenly resisted: in 17th century France provincial nobles so often led their own peasants in rebellions against the state tax-collectors that units of fusiliers had to protect these officials as they tried to perform their duties in the countryside (Porshnev 1965, 35).

Early modern states differed in the timing of these struggles and their outcomes. The timing of these struggles varied because rulers faced the revenue squeeze at different moments depending on, first, as both Ertman (1977) and Downing (1992) have pointed out, the onset of geopolitical competition. Spain was the first to build a modern army for its wars against the Ottomans, followed by Austria. France and Sweden had to build up armies to fight the Habsburg armies during the Thirty Years' War, with Prussia militarizing shortly thereafter. England, being an island, did not face geopolitical competition until much later (Downing 1992, 65-66). Second, as Mann (1986) has argued, states varied in terms of the timing of when kings could no longer fund the state out of the revenues from the royal domain and other revenue streams (such as fees from the royal judicial system). Henry VII was "the last English king to do this with success, at the beginning of the sixteenth century", while the French kings continued "until the fifteenth century, the Spanish until the bullion of the New World began to flow in the sixteenth century, and the Prussian into the eighteenth century" (Mann [1986] 2012, 418).

When this tipping point occurred in each state, the necessity of funding military power precipitated a struggle between ruler and elites over taxation, with varying outcomes. In some states rulers managing to overcome noble resistance and in others failed to do so. For example, in Denmark, the King successfully introduced reforms in the 1680s so that he could rationalize taxation "to consolidate State revenue and hence their independence from aristocratic power" (Kain and Baigent 1992, 97). In Catalonia following the War of the Spanish Succession, the crown succeeded in reasserting central royal power and imposing new modes of taxation (Camarero Bullón 2007, 152). However, not all monarchs were equally successful. In Bourbon Spain the attempt in 1754 to implement the catastro, an income tax that was to be paid by all, in the central Castile province was to be ultimately defeated by noble opposition (Black 2014, 207). The attempt to extend new land tax reforms to Hungarian territory failed following a noble revolt in 1789 (Black 2014, 207). In France, early attempts at reform foundered on the intractable problem of *ancien régime* privilege (Touzery 2002, 138-9) and rationalization of tax did not happen until the Napoleonic period (Kain and Baigent 1992).

These power struggles between monarchs and elites essentially constituted distributional struggles over the size of the tax burden and, critically, how it was apportioned. The dominant feudal forms of taxation led to a highly uneven distribution of the tax burden. This is not simply a teleological present day interpretation of past events – equity was part of the discourse around tax reform. Eighteenth century reformers in Italy identified inequalities of taxation “not only between one province and another, or one town and another ... but also among the individual tax-payers in a single village”; this was “a consequence of the degree to which the power to distribute and collect taxes was in the hands of local administrators”, tied to “large land owners that appointed the tax collectors” (Capra 2002, 129).

The example of France illustrates how noble led tax collection systems led to a highly uneven distribution of the tax burden and the political grievances. In the *pays de taille réelle*, largely in the south of the country, taxes were levied on land and were based on local registers of property known as *compoix,* in the earliest case dating back to the thirteenth century. In the *pays de taille personelle*, by contrast, more influenced by feudal obligations, taxation was based on the incomes of individuals according to their social status. With the extension of land taxes to the latter, “variations in the social quality of landowners resulted in a large proportion of property being either included in or excluded from the tax base, and this was detrimental to both the royal income and to communities that rarely enjoyed a reduction in the quota of tallage proportional to the property that had been excluded” (Touzery 2002, 136). The disparities these tax practices created are seen to have been one of the key sources of grievance on the eve of the French Revolution (White, 1995; Shapiro & Markoff, 1998).

Part of the rationale behind tax reforms, at least in some countries, was explicitly focused on equalizing the unfair distribution of taxation. The reforms of 1807 in France to collect more accurate information on land holdings, the *cadastre parcellaire*, was by designed ‘to be an instrument of government fiscal policy to ensure the fair calculation and apportionment of land tax commune by commune and property by property’ (Kain and Baigent 1992, 233). In Italy, similar reforms in Savoy and Milan were specifically designed to take discretionary powers away from traditional authorities and empower an administration ‘that is above private interests and passions and will be able to guarantee fiscal equality and public wellbeing’ (Alimento 2002, 120). In these cases, as in others, the pursuance of centralization was linked to the pursuit of fiscal privileges (Alimento 2002, 122).

Thus one key consequence of the outcome of these struggles between rulers and elites over taxation was the fairness of the distribution of taxation. A second was whether or not ordinary people were brought into direct contact with the state or continued to interface through noble intermediaries. In Sweden, for example, the increasing centralization of taxation led to a situation whereby 'the state bureaucracy extended its monitoring directly to peasants and labourers' (Tilly 1992, 136). This meant that the Swedish crown and state officials had direct contract with the peasants, rather than the nobility acting as an intermediary. Peasants, over a period of time, negotiated this interaction and relationship. For example, peasants regularly challenged the tax assessments and these complaints were dealt with directly by state officials (Hallenberg 2008, Hallenberg et al 2012). The essential of the Swedish state, built set forth by Gustav Vasa, "was a new fiscal and military organization… But the bi-product was a system of interaction that opened up direct communication lines between the King and his subjects" (Hallenberg 2008, 254).

If the struggles between rulers and elites in the early modern period are seen in these terms – as distributional struggles that had consequences for whether or not the tax burden was apportioned fairly and equitably and whether or not the state was brought into a direct relationship with the bulk of the population – then the outcomes of those struggles could conceivably have long-term implications for modern tax systems. In the next section we explore theoretically how this could be the case.

Theoretical Discussion

Why should we expect the outcomes of struggles over taxation four hundred years ago to have an impact on fiscal states today? In what ways and through which mechanisms might the outcome of these struggles matter?

In the first instance, there are at least three bodies of literature that support the suggestions that developments in early modern states may have an impact on contemporary outcomes. The first is the historical institutionalist school that has emphasized path dependency and the ways in which institutions replicate and persist along particular pathways as the incentives of actors become inscribed within the prevailing institutional structures (Pierson, 2000). The degree of path dependency inherent in tax systems has been particularly emphasized: Ames and Rapp argue that tax systems 'once established, tax systems last until the end of the government that instituted them' (1977, 177). This is because introducing tax reform is a 'revolutionary undertaking' that is inherently politically risky and hence tax outcomes are preserved, in their view, for hundreds of years. The second is the literature on the long term consequences of early institutional choices developed mostly by economists in the context of understanding divergent levels of development today (Acemoglu, Johnson & Robinson, 2001). Here the argument is that institutions acquire different levels of extractive capacity that persists over time (although in the view of these authors extractive institutions are negative for development). The third is the literature drawn on heavily above that sees this period as formative in both the emergence of states and their constitutional structure (Ertman, 1997; Tilly, 2002; Dincecco, 2009; Karaman & Pamuk, 2013). Although this literature has taken the different kinds of states that emerged in the early modern period as the dependent variable, it does not seem to be stretching credibility too far to suggest that they could also be treated as an independent variable that can explain the contemporary states they led to. Although some have found evidence that active pre-1800 parliaments are positively correlated with the quality of democracy in the nineteenth and twentieth centuries (van Zanden & Buringh, 2012) none, to our knowledge, have tried to test this proposition in relation to taxation. Thus our first objective is to test whether or not the outcome of distributional struggles in early modern states impact on tax outcomes today.

A second question we can ask is: in what ways and through which mechanisms might these struggles have an effect? Are tax outcomes today higher or lower if early modern states came out on top in these struggles? We argue that distributional struggles in early modern period are positively correlated with tax outcomes today through two mechanisms that matter for tax outcomes but which can take longer time periods to develop and evolve: state capacity and social norms.

State capacity

How might the outcome of early modern distributional struggles between elites and rulers impact on levels of state capacity?

In the first instance, where states overcame elite resistance they were able to increase the 'hard power' of the state as they rationalized and centralized tax administration. For example, to collect taxes such as land taxes the state developed informational technologies, such as property registers and cadastral mapping – large-scale maps identifying boundaries of individual land parcels – designed to give monarchs the information they needed to tax more effectively and equitably. These enabled rulers to rationalise the taxation system by making individual ownership of land – the key economic asset of the time – visible to the state and allowing a more equitable distribution of the burden both between regions and between individual persons (Clergeot, 2003). Some argue that these capacity changes were the necessary condition for further state-building in the form of bureaucratization: Kiser and Kane (2001) suggest that bureaucratization does not occur unless monitoring capacity is sufficiently developed. Thus, states that collected taxes directly themselves, rather than relying on elites were likely to become stronger.

Second, states not only developed significant powers where they had to tax directly, they also developed the ability to broadcast power more evenly over people and territory. The reach of the state is a critical but often overlooked aspect of state capacity. As Herbst has argued in his study of power in African states: 'states are only viable if they are able to control the territory defined by their borders. Control is assured by developing an infrastructure to broadcast power and by gaining the loyalty of citizens' (2000, 3). One of the key indicators of the ability to broadcast power according to Herbst is road density. Though we lack detailed data on road density in the early modern period, the construction of roads, often across private land, required that states could overcome or buy out elites. In countries where the state had gained the upper hand over elites, for example in Napoleonic France, this was easier: in the 18th century, the French, through central government efforts, build their Royal Roads system spanning 24,000 km. In England during the same period, where the elites after the Glorious Revolution had significant powers to constrain the Crown, the road system was developed not by the state but by private interests who then charged tolls (Rodrigue, Comtois and Slack, 2013). The unevenness of state power and quality of government in European states at the sub-national level has been clearly demonstrated (Charron et al, 2014) and shown to impact on economic outcomes (Nistotskaya et al, 2014).

These observations suggest a third way in which the outcome of these struggles may have impacted on state capacity. Herbst highlights the importance of legitimacy as an aspect of state capacity, and the examples of France and England show that basic goods such as roads were not always delivered by the state at this period. If tax is seen in a contractarian manner as a fiscal exchange that can either create or erode legitimacy, depending on whether or not taxpayers feel like they are receiving adequate goods in return for taxation, then it seems plausible to suggest that states entered either virtuous or vicious cycles depending on the outcome of these struggles. Where states overcame elite resistance and acquired the capacity to collect more tax, they could build stronger states capable of providing more public goods, and thus break out of the collection action problems of tax and public goods provision. They entered a direct, vertical fiscal contract with their citizens. Where states did not win, state capacity was not as consolidated, tax collection was lower, solving the collective action problem became more difficult, and services such as roads were more likely to be provided privately.

Social Norms

While the state capacity that resulted from the states attempts to tax created the ‘sinews’ of the state, as Brewer (1988) has put it, we could also argue that these struggles helped to establish social norms around equity and state power that sustained institutions and enabled them to keep replicating themselves.

As discussed above, intrinsic values, societal norms and the extent of ‘tax morale’ has an impact on tax outcomes today. Where do these norms come from? While some have seen the values as intrinsic (Levi 1988; Putnam, 1993; Webber & Wildavsky, 1986), others have argued that they are acquired through interaction with government (Cummings et al, 2004). The micro behavioural literature has shown that tax morale is higher when individuals perceive that tax is collected fairly and everyone is contributing (Slemrod, 1992, D’Arcy, 2011). Since norms are often seen to be ‘quasi-inertial forces’ (Gambetta, 1987) they are not necessarily directly reflective of immediate conditions, but rather have evolved over time, and plausibly out of the interactions between states and populations over the *longue duree*. If this is the case it seems plausible to suggest that the outcomes of past interactions with the state still have an effect today through the mechanism of social norms. Where societies in the past experienced more equitable taxation they may have acquired higher tax morale, leading to the establishment of social norms supportive of higher tax morale today.

What social norms may have been created as a result of different tax systems in the early modern period? A norm that has been shown to have a critical impact on many governance outcomes, such as taxation, is trust, and particularly trust in the institutions of the state (Cummings et al, 2005; Levi, Sachs & Tyler, 2009). The literature on the determinants of trust is extensive (Putnam, 1993; Knack & Keifer, 1997; Alesina et al, 2000; Glaeser et al, 2000; Uslaner, 2002; Delehy & Newton, 2005). Rothstein makes the case that both social capital and trust are generated not by horizontal relationships but at the interstice between vertical and horizontal: in the relationship between citizens and the state (Rothstein, 2003). In this argument what matters for trust is the degree of impartiality of government institutions (Rothstein and Teorell, 2008). Citizens will feel able to trust their compatriots if they trust the state to intervene and adjudicate fairly in when there is a breakdown in relations between citizens. This echoes the arguments of political philosopher Brian Barry, among others (1995).

As outlined above, the outcome of early modern struggles between the few over taxation had distributional consequences for the many. Where states defeated elites the tax burden was distributed more fairly and though it could increase, ordinary people were in a better position to negotiate directly with the state. In Sweden, for example, where this did happen, the regular interaction between Crown officials rather than leading to animosity and resistance, developed tolerable administration and a situation where the state was seen as the proper medium by which to solve problems from an early stage. Sweden is remarkable for the very low number of tax revolts.

These are the conditions likely to create trust, according to the theories of Rothstein et al. By intervening with elites in a way that increased equity, even if efficiency rather than equity was often the objective, the state was playing the role of the impartial interventionist. In then entering into more direct contact with them the state could prove itself to be an institution capable of consistently providing impartiality, especially since its power was more evenly spread across social groups and territories. Although it is not guarantee that the state would do this, as the Swedish example illustrates, often through repeated interactions populations could demand this of the state and create a relationship whereby it acted as the impartial arbiter and trust consequently developed.

Hypotheses:

The above theoretical discussion suggests the following hypothesis, and two sub-hypotheses about the mechanisms:

H1: Those countries where monarchs defeated elites earlier and more comprehensively collect more tax revenues today.

H2: Those countries where monarchs defeated elites earlier and more comprehensively have fairer tax systems today.

MH1: Those countries where monarchs defeated elites earlier and more comprehensively have higher state capacity today.

MH2: Those countries where monarchs defeated elites earlier and more comprehensively have higher tax morale today.

Data and Method

Measuring the outcome of tax struggles in the early modern period

To test our theory we need an indicator of when and how states succeeded in their struggles with elites over tax in the early modern period. Previous research has attempted to measure characteristics of early modern tax systems. Dincecco constructs a dummy variable for ‘fiscal centralization’ which he defines as being ‘completed the year that the national government began to secure revenues by way of a tax system with uniform rates throughout the country (2009, 52). This is an adequate measure for his study as he is interested in how fiscal centralization impacts on taxation i.ie change within country over time. It is less useful for our purposes as it is not very sensitive to variation across countries.

The indicator we use is an index capturing the extent and quality of cadastral mapping. A cadastral map is a map of individual land parcels. As two of the foremost writers on this instrument explain, ‘their essential feature is that they identify property owners, usually by linking properties on a map to a written register on which details of the property, such as the owner’s name and its area, are recorded.’ (Kain & Baigent 1992, xviii). In other words, they provide the state with the information needed to calculate property value[1], and hence the amount of tax that is due on that property, and details on property ownership, and hence the information who is liable to pay that tax. Although there are other ways to collect and record this information, for example through a property register, a cadastral map is the most accurate and complete way to do so. States were primarily interested in cadastral maps because they ‘provide a parsimonious and accurate means of both fairly assessing and permanently recording the tax liabilities of a particular parcel of land’ (Kain 2007, 710).

Given the power that it gave the state to increase its monitoring of the existing economic assets and so their tax liabilities, cadastral maps were strongly resisted by local elites. Prior to the state having the information cadastral maps provided, local elites could misrepresent the true value of property and extent of their income in order to minimize their tax burden. As

[1] They could contain a wealth of information on the cultivations and normal harvest yields, assessments of the type of land (dry and firm ground, clay, marshy meadows, etc.) and other assets associated with the parcel (mills, orchards, etc.). For example, most Swedish cadastral maps of the XVIIth century were accompanied by a text (*Notarum Explicatio*), containing a wealth of quantitative and qualitative information on the economic resources of about 120, 000 settlements. Quantitative information included field size (in a unified measure, *tunnland*), the yielding capacity of the depicted land (hay yields from meadows (in a unified measure, *sommar lass*, translated as “summer loads of hay”), the number of hop poles, and land evaluation (*jordvärdering*) in the standardized unit (*markland*). Qualitative information included assessment of the type of land, resources on outlying land, access to fishing waters, etc.

Scott has put it, ‘the point of the cadastral map and land register was precisely to eliminate the fiscal feudalism and rationalize the fiscal take of the state.” (1998, 38). Cadastral maps were thus a key instrument in the struggles of rulers with elites over taxation.

As a result of this resistance, full cadastral maps were only possible where states overcome elite resistance: ‘as a rule of thumb, cadastral mapping was earlier and more comprehensive where a powerful central state could impose itself on a relatively weak civil society. Where, by contrast, civil society was well organized and the state relatively weak, cadastral mapping was late, often voluntary and fragmentary’ (Scott 1998, 48). For example, due to the strength of the resistance of the nobility, who had institutions of representation from an early point, the English state never managed to introduce a comprehensive cadastral map (Kain and Baigent 1992, 343). In France, it was only in the Napoleonic period that cadastral mapping was expanded to the entire territory of the country. In contrast, the Swedish state introduced a full cadastral map very early with little resistance from a weak nobility. However, in their Baltic territories the strength of a semi-independent nobility lead to much less effective mapping (Kain and Baigent 1992, 72). Thus, the presence of extensive state-administered cadastral mapping is indicative of a state that overcame elite resistance to tax reform. As such we believe that the extent and the quality of a national cadaster constitutes a good indicator of the dynamics of elite-monarch relations in the early modern period.

Constructing CADASTER Indicator

In the light of the above discussion we created an original indicator *CADASTER* as follows. First, we defined the period under consideration. The year 1500, the agreed upon date for the beginning of the early modern period, was taken as the period’s lower boundary. The upper boundary is the 2000. Our population is 34 European states, including Turkey, for which we could assemble reliable data on historical cadasters.

For each country and each year of the period we asked three questions: Was there a state-administered cadaster? Was this cadaster narrative or spatial (cartographic)? How much of the territory of the modern country was covered by the cadaster? We allocated points for each year as follows:

0: no cadaster

0.25: a narrative cadaster, covering less than 75% of the territory of the modern state

0.5: a narrative cadaster, covering more than 75% of the territory of the modern state

0.75: a spatial (cartographic) cadaster, covering less than 75% of the territory of the modern state again (or not using sophisticated surveying techniques, for example in the case of the Japanese ‘Taiko’ cadasters from the 1590s).

1: a spatial (cartographic) cadaster, which extends it coverage to over 75% of the current territory.

While higher scores for the larger territorial coverage of the cadaster is a rather straightforward decision, we assign more weight to cartographic cadasters because they are more accurate in terms of both measurements and spatial position of parcels (especially since the use of trigonometry for measuring land), provide more information enable to calculate the land value and are particularly effective in “linking properties on a map to a written register on which details of the property, such as the owner’s name and its area, are recorded.” (Kain and Baigent 1992, xviii).

We sum up all the assigned scores and divide the sum by the total number of years of the period for a given country. For example, in Sweden in 1500 the rulers began to use narrative cadaster, which coverage was less than 75% of modern Sweden. In 1628 the Swedish government started a pioneering project, intending to cover the entire territory of the Swedish realm (Sweden and overseas territories) with large-scale maps of the existing land parcels – *geometriska jordeböcker*. The surveying and mapping of the arable lands of Sweden was finished in the 1670s. Therefore, for each year between 1530 and 1628 (98 years) we assigned the score 0.5, and for each year between 1628 and 2000 (372 years) we assign 1. The totaling score of 421 was divided by the total number of years of the period (500), giving the final score of .84.

Sweden has the highest *CADASTER* score, closely followed by Finland (.83) and then by Netherlands (.71) and Austria (.69). On the other side of the *CADASTER* distribution are countries like Moldova and Romania (.1). Greece, despite its long history of statehood, only began a comprehensive cadastral mapping campaign in 1995, yielding the score of .11.

The information on cadasters is taken from specialized secondary sources:

1. UN-sponsored currently dormant Cadastral Template Project – a worldwide comparison of cadastral systems, based on a template, developed by the International Federation of Surveyors;
2. documents from the Permanent Committee on Cadaster in the European Union – information network on cadaster issues in the EU, representing the institutions responsible for cadaster in the EU member states and functioning under the auspices of the EU;
3. a variety of specialized academic literature, in particular Kain and Baigent's (1992) comprehensive review of the use of spatial cadasters by European governments in the XVII-XIX centuries.

Dependent and Control Variables

Tax Outcomes

Since 'there is no clear consensus about how various constructs should be measured, or how to interpret various indicators' (Liberman 2002, 90), we test our theory with a number of tax measures. First, we use total tax revenues as a percentage of GDP, the preferred overarching measure of fiscal outcomes in much of the relevant literature. General government revenue, including taxes, social contributions, grants receivable and other revenue (% of GDP) is employed as an alternative measure of the all-encompassing financial outcome of a polity in robustness checks.

Second we use direct taxes (percentage of GDP) excluding social security contributions and resource revenues, as a proxy for the fairness of the national tax system. We see direct taxes such as individual and corporate income taxes as being the most progressive form of taxation, because they are generally levied according to means (Lieberman 2002). Direct tax indicators are taken for general government (all levels of government) and central government separately.

State capacity

To measure state capacity we use two indicators from a standard measure of administrative capacity and quality from International Country Risk Guide (ICRG), one pertaining to the strength and quality of public bureaucracy and another one capturing overarching quality of government. To check for robustness we use an alternative indicator – perception of corruption in national tax authorities from Transparency International's Global Corruption Barometer.

Social norms

To gauge "tax morale" we use questions from Round Four of the European Social Survey conducted in 2008 on welfare attitudes, including attitudes towards the tax authority (their efficiency and impartiality) and levels of taxation and social spending.

Controls

We employ five control variables across all models: the number of years since the inception of democracy (DEMY), unitarianism (UNI), trade union density (UD2000), a measure of the level of economic development (ECI) and its short-term rate of change (GROWTH). Years of democracy and unitarism reflect major political and constitutional differences among the countries under consideration. UD2000 is a proxy for a type of capitalism, where lower union density roughly proxies for liberal market economies and higher union density for coordinated market economies (Hall and Soskice 2001). ECI – The Economic Complexity Index – is a measure of economic development, which is based on the evaluation of complexity and diversification of products in an economy (Hausmann et al 2011). We believe it to capture both of the economic characteristics that matter for taxation – the size of the economy and its structure.

Most of the variables are measured between 2001 and 2005 (averaged) to limit the impact of yearly fluctuations. Full description of the variables, years of measurement and data sources is provided in Appendix A.

Results

Constrained by the number of observations in our sample, we chose to introduce control variables one by one, except for the number of years under democratic rule (DEMY), which is present in all models. The last specification in all analyses retains only CADASTER and significant controls.

Table 1 reports the results for empirical tests for hypothesis 1. Overall, it finds support in the data: irrespective of the specification, higher CADASTER scores are positively and significantly associated with higher tax revenues. The fit of the models is strong: R^2 ranges from .29 in Model 1 (bivariate regression) to .74 in the last specification. In robustness checks (Table 2), where an alternative all-encompassing measure of a polity's fiscal performance is used, we find very similar results with respect to both the main explanatory variables and controls. CADASTER is significant at the level of .05 or higher, and is signed positively as expected. The union density is also signed positively as expected and remains significant in all specifications. Estimates for GROWTH, which is a measure of recent trends of economic development, suggest that countries, in which economies contracted in the early 2000s, are those that have higher tax intake as a share of GDP. This finding is not paradoxical, considering that more recent episodes of economic slowdown happened predominantly in developed and transitioning economies, both known as a comparatively high taxing type. At the same time the estimates for the extent of territorial sovereignty (UNITARY) are below the accepted levels of significance across all models; and the behaviour of DEMY is inconsistent across two analyses. Post-estimation tests revealed no serious problems.

Next we tests the impact of the extent and quality of historical cadasters on revenues from income, corporate and capital gains taxes, which we see as an indicator of a more progressive and hence a fairer tax burden. Table 3 reports the OLS estimates of the impact of CADASTER on direct tax revenues of general governments (% of GDP). Here CADASTER is significant in the initial 4 specifications, but loses significance under the addition of economic factors (Models 5-6). A check for outliers reveals that Switzerland is leverage outlier and Denmark is a residual outlier, however their exclusion do not improve estimates.

Aa very strong link between economic development and a larger share of direct taxes in revenues (Besley and Persson 2012, 12-15), [2] has led some scholars to exclude this variable from analysis when working with relatively homogenous samples (see Moene and Wallerstein 2001, Steinmo and Tolbert 1998). The exclusion of ECI, our indicator for the overall level of economic development, leaves us with the final model (7) consisting of two variables. This model explains about 61 per cent of the variance in the DV, which is a slight deterioration compared to Model 6.

To check the robustness of these findings, we repeat analysis with direct tax revenues of central government as dependent variable (Table 4). We found a positive association between

[2] For our sample and time period the correlation between GDPpc and a share of direct taxes in GDP is also very strong (r =.8).

CADASTER and this DV at the accepted levels of significance across all models under control of a set of political and economic characteristics. The size of the effect of CADASTER remains rather high across all specifications, however the fit of the models is not strong (between .24 and .46). Overall, the data does not provide a strong support for H2, and more empirical work is required to validate or refute the hypothesis. A reasonable way forward would be to increase the number of observations and also to include alternative indicators for the control factors.

Hypotheses MH1 and MH2 are those that aim to illuminate mechanisms through which historical struggles over tax may be relevant to present day phenomena. Tables 5 and 6 report results of regression analysis of the impact of CADASTER on contemporary state capacity, measured as capabilities of public bureaucracies, overall quality of government and the lack of corruption in tax authorities. CADASTER estimates are remarkable both in terms of their quantitative impact and robustness. In the bureaucratic quality analysis, one standard deviation increase in CADASTER is associated with 7 to 9 percent increase in the bureaucratic quality, assessed by reputable International Country Risk Guide. Our explanatory variable of interest is significant at the level of .05 or above across all models. In bivariate analysis, CADASTER explains about 35% of the variance in the dependent variable, and R^2 reaches .67 in the last model, which retains only significant controls. A heteroskedasticity tests reveals no relationships between the unexplained variance and the values of CADASTER, and no conspicuous leverage and/or residual outliers. In government quality test (Table 6), which is run as a robustness checks, the behaviour of CADASTER is largely the same: it is significant at .01 level, although the size of the effect is smaller, compared to the bureaucracy test. Similarly, the impact of CADASTER on perceived corruption in tax authorities is as postulated: higher scores of out explanatory variables are associated with lower levels of corruption (Table 6). CADASTER alone explains about 44 per cent of the variation in perceived corruptibility of the tax man's people. Our overall conclusion is that the data provides support to the HM1 that where European monarchs rolled their "revenue-maximizing" projects earlier and more rigorously (which was conditional on their victories over nobility), we can observe higher state capacity today.

Table 7 presents OLS estimates of CADASTER on a range of indicators of social norms supportive of "tax morale", namely a perception of efficiency of revenue authorities (Model 1), impartiality of revenue authorities (Model 2) and preferences with regard to the level of taxation and levels of government social spending (Model 3). CADASTER is signed as expected and is significant across the models. Among three ESS's variables, CADASTER has the greatest size effect on impartiality of tax authorities: one standard deviation increase in the score of CADASTER is associated with around 9 per cent of increase in the public perception of their tax authority as impartial. The quantitative significance of CADASTER with regard to the efficiency of tax authorities is one SD to about 4 per cent. Models 1 and 2 fit the data well, explaining 57 and 74 per cent of the variance in efficiency and impartiality correspondingly. Model 3 is of particular interest since it estimates the effect of the quality of historical fiscal systems on contemporary distributional preferences of taxpayer. Here one SD increase in CADASTER levels is associated with 3 per cent change in the taxpayer attitudes towards more tax and spending. The model explains about half of the variation in the distributional preferences of citizens in 34 European countries, however only one control variable – economic complexity is significant. It's coefficient is signed negatively, implying that citizens of economically less developed countries are more pro-tax and government spending than citizens of economically less mature countries. The democratic experience's estimates are below the significance level across all 4 models. We conclude that the data provides support to hypothesis MH2, however additional tests with alternative measures for control factors are needed to substantiate the robustness of this evidence.

Overall, the proposition that early European tax history has not lost its relevance for contemporary tax outcomes find support in the data. On average, countries where monarchs defeated elites earlier and more comprehensively, as measured by the extent and coverage of historical cadasters, tax more, have greater state capacity and higher tax morale. The inclusion of a variety of demanding control variables does not substantially alter the behaviour of our main explanatory variable, which is the main source of our confidence in the specifications presented in this paper. This holds for all tests, except for the analysis involving direct revenues of general governments. Here more and better data is required to reach a verdict. We are also reasonably confident that our analysis is not rigged by the problem of endogeneity since the core of the data in the CADASTER variable is separated from the outcomes variable by centuries.

Conclusion

In this paper we have explored the nature of early modern tax struggles and suggested why and in what ways they might have an impact on contemporary tax states. We suggest that the outcome of these struggles had consequences for the soundness of contemporary tax systems, distribution of the tax burden, the relationship between the state, elites and ordinary people, and the capacity of the state. Thus depending on whether rulers managed to overcome elite resistance, states were set on trajectories that either led to the strengthening of the state, creation of a vertical fiscal contract, and social norms supportive of high tax morale, or they were not. To test our hypotheses we constructed a novel indicator that is reflective of the outcome of these struggles.

Three out of four theoretical propositions find support in the data. On average, those European countries where monarchs defeated elites earlier and more comprehensively collect more taxes, have higher state capacity and higher tax morale. This association is robust to the inclusion of a variety of demanding control variables. The link between the existence of comprehensive cadasters and fairer taxation is however sensitive to the inclusion of the variables reflecting the level of economic development, and requires further investigation.

The recent financial crisis that has been accompanied by fiscal crisis in some of Europe's states has again highlighted that these states vary considerably in their tax systems and tax capacities. Thus there is a very contemporary reason for asking questions about tax states, and if the reasons behind this variation are deeply rooted in long-run historical processes, we need to be aware of this in knowing what kind of reform may, or may not, be possible.

Table 1. Tax Outcomes: OLS Estimates

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Total Tax Revenues, % of GDP (ICTD)					
CADASTER	0.12***	0.07**	0.06*	0.07*	0.08*	0.05**
	(0.04)	(0.04)	(0.03)	(0.03)	(0.04)	(0.03)
DEMY		0.00***	0.00***	0.00***	0.00*	0.00
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
UD2000			0.01***			0.01***
			(0.00)			(0.00)
UNITARY				0.09		
				(0.05)		
ECI					-0.01	
					(0.08)	
GROWTH					-0.03**	-0.04***
					(0.02)	(0.01)
Constant	3.18***	3.08***	2.92***	2.92***	3.24***	3.08***
	(0.03)	(0.04)	(0.06)	(0.10)	(0.12)	(0.07)
Observations	33	33	33	33	31	33
R-squared	0.29	0.46	0.64	0.51	0.56	0.74

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 2. Tax Outcomes: robustness checks.

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	General Government Revenue, % of GDP (IMF)					
CADASTER	4.69***	3.50**	3.08**	3.55**	3.51**	2.44**
	(1.30)	(1.42)	(1.31)	(1.45)	(1.47)	(0.98)
DEMY		0.06*	0.04	0.06	0.01	
		(0.03)	(0.03)	(0.04)	(0.03)	
UD2000			0.15**			0.16***
			(0.06)			(0.04)
UNITARY				-0.62		
				(2.18)		
ECI					-1.77	
					(2.92)	
GROWTH					-2.08***	-1.87***
					(0.66)	(0.40)
Constant	40.59***	38.30***	33.52***	39.41***	49.73***	41.89***
	(1.20)	(1.72)	(2.43)	(4.28)	(4.90)	(2.41)
Observations	33	33	33	33	31	33
R-squared	0.30	0.36	0.48	0.37	0.55	0.68

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 3. Fairness of Tax System: OLS Estimates.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	General Government Direct Tax, % of GDP						
zcadaster2000	0.31***	0.17**	0.15**	0.17**	0.09	0.09	0.17**
	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)
Demyears2000		0.01***	0.01***	0.01***	0.00**	0.01***	0.01***
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
UD2000			0.00				
			(0.00)				
gtm_unit90_00				-0.02			
				(0.10)			
eci9500					0.32**		
					(0.12)		
GDPgrowth0105					0.01		
					(0.03)		
eci0105						0.34**	
						(0.13)	
Constant	2.34***	2.08***	1.92***	2.11***	1.78***	1.83***	2.08***
	(0.07)	(0.08)	(0.12)	(0.20)	(0.23)	(0.12)	(0.08)
Observations	33	33	33	33	31	31	33
R-squared	0.36	0.61	0.65	0.61	0.70	0.68	0.61

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 4. Fairness of Tax System: robustness checks.

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Central Government Direct Tax, % of GDP					
CADASTER	0.35***	0.23*	0.23*	0.23*	0.28**	0.23**
	(0.11)	(0.12)	(0.12)	(0.12)	(0.13)	(0.11)
DEMY		0.01**	0.01*	0.01**	0.00	0.00
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
UD2000			-0.00			
			(0.01)			
UNITARY				0.09		
				(0.19)		
ECI					-0.11	
					(0.24)	
GROWTH					-0.13**	-0.12**
					(0.06)	(0.05)
Constant	-2.67***	-2.90***	-2.90***	-3.06***	-2.25***	-2.36***
	(0.10)	(0.15)	(0.23)	(0.38)	(0.39)	(0.27)
Observations	33	33	33	33	31	33
R-squared	0.24	0.34	0.34	0.34	0.46	0.44

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 5. State Capacity: OLS estimates.

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Bureaucratic quality (ICRG)					
CADASTER	0.59***	0.36**	0.36**	0.37**	0.29**	0.32**
	(0.15)	(0.14)	(0.15)	(0.14)	(0.13)	(0.12)
DEMY		0.01***	0.01***	0.01***	0.01	0.01*
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
UD2000			0.00			
			(0.01)			
UNITARY				-0.05		
				(0.22)		
ECI					0.34	
					(0.26)	
GROWTH					-0.15**	-0.19***
					(0.06)	(0.05)
Constant	3.15***	2.72***	2.71***	2.81***	3.15***	3.65***
	(0.13)	(0.17)	(0.27)	(0.43)	(0.43)	(0.30)
Observations	33	33	33	33	31	33
R-squared	0.35	0.53	0.53	0.53	0.73	0.67

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 6. State Capacity: robustness checks.

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	QoG (ICRG)			TaxCORR		
CADASTER	0.13***	0.08***	0.05**	-0.47***	-0.35***	-0.24*
	(0.03)	(0.02)	(0.02)	(0.10)	(0.11)	(0.12)
DEMY		0.00***	0.00**		-0.01**	-0.00
		(0.00)	(0.00)		(0.00)	(0.00)
UD2000			0.00			-0.01
			(0.00)			(0.00)
UNITARY			0.07*			
			(0.03)			
ECI			0.09*			-0.29
			(0.05)			(0.23)
GROWTH			-0.03***			0.04
			(0.01)			(0.05)
Constant	0.73***	0.63***	0.58***	3.00***	3.24***	3.44***
	(0.03)	(0.03)	(0.10)	(0.10)	(0.14)	(0.36)
Observations	31	31	29	29	29	28
R-squared	0.42	0.66	0.84	0.44	0.54	0.62

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 7. Tax Morale Indicators: OLS Estimates

VARIABLES	(1) ESS_D31	(2) ESS_D33	(4) ESS_D34
CADASTER	0.43***	0.94***	0.34***
	(0.15)	(0.18)	(0.11)
DEMY	0.00	0.01	0.00
	(0.00)	(0.00)	(0.00)
UD2000	-0.01	0.00	0.00
	(0.01)	(0.01)	(0.00)
ECI	0.21	-0.47	-0.44*
	(0.30)	(0.36)	(0.23)
GROWTH	-0.09	-0.16*	-0.06
	(0.07)	(0.08)	(0.05)
Constant	5.33***	5.57***	5.38***
	(0.52)	(0.62)	(0.39)
Observations	28	28	28
R-squared	0.57	0.74	0.50

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Appendix A. Variables Description and Sources.

DV: TAX OUTCOMES

GTot_Tax0105: Total tax revenue, excluding social contributions and natural resource revenues, general government, % of GDP, 2001-2005 averaged, log. (Macedonia 2001-2002, Cyprus 2002-2005). Source: The ICTD Government Revenues Dataset, ver Sep 2014 (TotTax). Available online: http://www.ictd.ac/en/node/436/#Dataset

GTax0105: Total Direct Taxes excluding social contributions and resource revenue, calculated as the sum of taxes on income, profits and capital gain, general government, % of GDP, 2001-2005, averaged, log. Source: The ICTD Government Revenues Dataset, ver Sep 2014 (Direct). Available online: http://www.ictd.ac/en/node/436/#Dataset

CTax0105: Total Direct Taxes excluding social contributions and resource revenue, calculated as the sum of taxes on income, profits and capital gain, central government, % of GDP, 2001-2005, averaged, log. (Macedonia 2001-2002, 2004-2005, Romania 2001-2004). Source: The ICTD Government Revenues Dataset, ver Sep 2014 (Direct). Available online: http://www.ictd.ac/en/node/436/#Dataset.

IMF_Rev0105: General government revenue, including taxes, social contributions, grants receivable and other revenue, % of GDP. 2001-2005 averaged. Croatia and Turkey 2002-2005 averaged. Source: IMF, The QoG standard dataset, version Jan 2015 (imf_rev).

DV: STATE CAPACITY

BQ0105: expert assessment of the quality of bureaucracy ("Bureaucratic Quality") component only) of the ECRG data, 1-4. Higher values indicate higher quality of bureaucracy. Source: International Country Risk Guide (ICRG).

QoG0105: The mean value of the ICRG variables "Corruption", "Law and Order" and "Bureaucracy Quality", scaled 0-1. Higher values indicate higher quality of government. Source: International Country Risk Guide (ICRG), The QoG standard dataset, version Jan 2015 (icrg_qog).

TaxCORR: To what extent do you perceive the following categories in this country to be affected by corruption? Tax revenue. 1 (Not at all corrupt) - 5 (Extremely corrupt). 2004 (for most of the cases), 2007 for the rest. Source: Transparency International, The QoG standard dataset, version Jan 2015 (gcb_ptax).

DV: TAX MORALE

ESS_D31: Wow efficient do you think the tax authorities are at things like handling queries on time, avoiding mistakes and preventing fraud? 0 (extremely inefficient in doing their job) - 10 (extremely efficien). All scores are adjusted by Design and Population size weights. Source. European Social Survey, 2008, D31.

ESS_D33: Do the tax authorities in [country] give special advantages to certain people or deal with everyone equally? 0 (Gove special advantage to certain people) – 10 (Deal with everyone equally). All scores are adjusted by Design and Population size weights. Source: European Social Survey, 2008, D31.

ESS_D34: Many social benefits and services are paid for by taxes. If the government had to choose between increasing taxes and spending more on social benefits and services, or decreasing taxes and spending less on social benefits and services, which should they do? 0 (Decrease taxes and social spending a lot) – 10 (Increase taxes and social spending a lot). All scores are adjusted by Design and Population size weights. Source: European Social Survey, 2008, D34.

IV and CONTROLS:

CADASTER: Extent and quality of state-administered cadasters, 1500-2000, normalized. Source: Constructed by the authors.

DEMY: the number of years since the inception of democracy (Polity 6 or more) until 2000.

UD2000: union density, net union membership as a proportion wage and salary earners in employment, 2000 (Albania 1999, Croatia 1998, Moldova 2007, Macedonia 2010, Ukraine 2011). Source: The ICTWSS database and constructed by the authors for countries outside the ICTWSS's database.

UNITARISM: 0= federal (elective regional legislatures plus conditional recognition of subnational authority), 1=semifederal (where there are elective legislatures at the regional level but in which constitutional sovereignty is reserved to the national government) or 2 = unitary. Source: Gerring et al 2005, The QoG standard dataset, version Jan 2015 (gtm_unit) and constructed by the authors for countries that are not covered by the Gerring et al's sample.

ECI0105: Economic Complexity Index, a measure of complexity and diversification of products in an economy, an alternative measure of economic development. Source: The Atlas of Economic Complexity, Center for International Development at Harvard University, http://www.atlas.cid.harvard.edu

GROWTH0105: annual percentage rate of GDP at market prices based on constant local currency, 2001-1005 averaged. Source: World Bank Development Indicators, The QoG standard dataset, version Jan 2015 (wdi_gdpgr).

References

Acemoglu, Daron, Simon Johnson, and James A. Robinson. 2001. "The Colonial Origins of Comparative Development: An Empirical Investigation." *The American Economic Review* 91(5): 1369-1401.

Allers, Maarten, Jakob De Haan, and Cees Sterks. 2001. "Partisan influence on the local tax burden in the Netherlands." *Public Choice* 106 (3-4): 351-363.

Alavarez, Michael R., Garrett, Geoffrey, & Lange, Peter. 1991. "Government partisanship, labor organization and macroeconomic performance." *American Political Science Review* 85, 539-556.

Alesina, A., & la Ferrara, E. 2000. Participation in heterogeneous communities. *Quarterly Journal of Economics 115*, 847–904.

Alimento, Antonella. 2002. 'Eighteenth-Century Cadastres, between tradition and modernity'. *Revista CT/Catastro* Nº46 Available at http://www.catastro.meh.es/documentos/publicaciones/ct/ct46/09.2%20Antonella%20Alimento.pdf Accessed 4/2/15.

Allingham, M.G. & Sandmo, A. 1972. Income Tax Evasion: A Theoretical Analysis. *Journal of Public Economics* 1, 323-338.

Alm, James, and Benno Torgler. 2006. "Culture differences and tax morale in the United States and in Europe." *Journal of Economic Psychology* 27(2): 224-246.

Ames, Edward, and Richard T. Rapp. 1977. "The birth and death of taxes: A hypothesis." *The Journal of Economic History* 37(1): 161-178.

Anderson, Perry. 1974. *Lineages of the Absolutist State*. London: NLB.

Barry, Brian. 1995. *Justice as Impartiality* (Oxford University Press, 1995)

Becker, W., H.-J. Buchner and S. Sleeking. 1987. 'The impact of public transfer expenditures on tax evasion: An experimental approach'. *Journal of Public Economics* 34, 243-252.

Besley, Timothy and Torsten Persoon. 2012. Taxation and Development". Unpublished manuscript. http://people.su.se/~tpers/papers/Draft_120407.pdf

Black, Jeremy. 2014. *The Power of Knowledge: How Information and Technology Made the Modern World*. New Haven: Yale University Press.

Boix, C. 2001. Democracy, Development and the Private Sector. *American Journal of Political Science*, 54(1), 1-17.

Bordignon, M. 1993. 'A Fairness Approach to Income Tax Evasion'. *Journal of Public Economics* 52(3): 345-62.

Brewer, J. 1989. *Sinews of Power; War, Money and the English State 1688-1783.* London: Unwin Hyman.

Camarero Bullón, Concepción. 'Les trois cadastres de l'Espagne du XVIIIe siècle' in *De l'estime au cadastre en Europe: L'époque moderne*, ed. Mireille Touzery. 2007. Paris: Ministère de l'Économie, des Finances et de l'Emploi et Ministère du Budget, des Comptes Publics et de la Function Public.

Capra, Carlo. 'The State of Milan's 'New Census''. *Revista CT/Catastro* Nº46 (December 2002). Available at: http://www.catastro.meh.es/documentos/publicaciones/ct/ct46/09.4%20Carlo%20Capra.pdf Accessed 3/2/2015.

Charron, Nicholas, Lewis Dijkstra, and Victor Lapuente. 2014. "Regional governance matters: quality of government within European Union member states." *Regional Studies* 48, 68-90.

Cheibub, Jose Antonio. 1998. 'Political Regimes and the Extractive Capacities of Governments Taaxation in Democracies and Dictatorships'. *World Politics* 50, 349-76

Clergeot, Pierre. 2003. ‘The Origins of the French General Cadastre’. FIG Working Week 2003, Paris, France, April 13-17. Available at: http://www.eurocadastre.org/pdf/clergeot.pdf Accessed 3/2/2015.

Crepaz, Markus M. L. 1992. Corporatism in decline? An empirical analysis of the impact of corporatism on macroeconomic performance and industrial disputes in 18 industrialized democracies. *Comparative Political Studies* 25, 139-168.

Cummings, R.G, J. Martinez-Vazquez, M. McKee & Torgler B. 2005. ‘Effects of Tax Moral on Tax Compliance: Experimental and Survey Evidence’. *CREMA Working Paper*, 29.

Cummings, Ronald C. J. Martinez-Vazquez, M. McKee & Torgler B. 2004. "Effects of culture on tax compliance: A cross check of experimental and survey evidence." Unpublished manuscript.

D'Arcy, Michelle. 2009. "Why Do Citizens Assent to Pay Tax? Legitimacy, Taxation and the African State?." *Legitimacy, Taxation and the African State* .

Delhey, J., & Newton, K. 2005. Predicting cross-national levels of social trust: global pattern or Nordic exceptionalism? *European Sociological Review 21*, 311–327.

Dincecco, Mark. 2009. "Fiscal centralization, limited government, and public revenues in Europe, 1650–1913." *The Journal of Economic History* 69(1): 48-103.

Downing, Brian. *The Military Revolution and Political Change: Origins of Democracy and Autocracy in Early Modern Europe*. 1992. Princeton: Princeton University Press.

Elster, Jon. 1989. "Social Norms and Economic Theory." *The Journal of Economic Perspective*s 3(4): 99-117.

Ertman, Thomas. 1997. Birth of the Leviathan: Building States and Regimes in Medieval and Early Modern Europe. New York: Cambridge University Press.

Fauvelle-Aymar, C. 1999. The Political and Tax Capacity of Government in Developing Countries. *Kyklos,* 52(3): 391-413.

Fjeldstad, Odd-Helge. 2004. "What's trust got to do with it? Non-payment of service charges in local authorities in South Africa." *The Journal of Modern African Studies* 42(4): 539-562.

Hall, Peter A. and David Soskice (eds.). 2001. *Varieties of Capitalism. The Institutional Foundations of Comparative Advantage*. Oxford: Oxford University Press.

Hallenberg, Mats. 2012. “For the Wealth of the Realm: the Transformation of the Public Sphere in Swedish Politics, c. 1434-1650” *Scandinavian Journal of History* 35(5): 557-577.

Hallenberg, Mats, Holm, Johan and Dan Johansson. 2008. “Organization, Legitimation , Participation.” *Scandinavian Journal of History* 33, 247-268.

Hallerberg, M. and S. Basinger. 1998. ‘Internationalization and Changes in Tax Policy in OECD Countries’, *Comparative Political Studies* 31, 321-352

Hausmann Ricardo, César A. Hidalgo, Sebastián Bustos, Michele Coscia, Sarah Chung, Juan Jimenez, Alexander Simoes and Muhammed A. Yıldırım. 2011. *The Atlas of Economic* Complexity. Cambridge, MA: Puritan Press.

Gambetta, Diego. 1987. *Were they pushed or did they jump? Individual decision mechanisms in education*. Cambridge University Press.

Gerring, John, Strom C. Thacker, and Carola Moreno. 2005. "Centripetal Democratic Governance: A Theory and Global Inquiry." *American Political Science Review* 99: 567-581.

Glaeser, E.L., Laibson, D., Scheinkman, J.A., & Soutter, C.L. 2000. Measuring trust. *Quarterly Journal of Economics 115*, 811–846.

Gourevitch, Peter. 1986. *Politics in Hard Times: Comparative Responses to International Economic Crises*. Ithaca, NY: Cornell University Press.

Herbst, Jeffrey. 2000. *States and power in Africa*. Princeton University Press,.

Hintze, Otto. 1975. The Historical Essays of Otto Hintze, ed. Felix Gilbert. New York: Oxford University Press.

Huber JD, Powell GB. 1994. Congruence between citizens and policymakers in two visions of liberal democracy. World Polit. 46, 291–326

Kain, Roger J.P. and Elizabeth Baigent. 1992. *The Cadastral Map in the Service of the State – A History of Property Mapping*. Chicago: University of Chicago Press.

Kain, Roger. J. P. 2007. “Maps and Rural Land Management in Early Modern Europe”. In The History of Cartography, Vol. 3 “Cartography in the European Renaissance”, edited by David Woodward. Chicago: Chicago University Press.

Karaman, K. Kivanc, and Şevket Pamuk. 2013 "Different Paths to the Modern State in Europe: The Interaction Between Warfare, Economic Structure, and Political Regime." *American Political Science Review* 107(3): 603-626.

Kiser, Edgar, and Joshua Kane. 2001. "Revolution and State Structure: The Bureaucratization of Tax Administration in Early Modern England and France." *American Journal of Sociology* 107(1): 183-223.

Kiser, Edgar, and April Linton. 2001. “Determinants of the Growth of the State: War and Taxation in Early Modern France and England.” *Social Forces* 80: 411–48.

Knack, S., & Keefer, P. 1997. “Does social capital have an economic pay-off? A cross-country investigation.” *Quarterly Journal of Economics*, 112: 1251–1288.

Levi, Margaret. 1988. *Of Rule and Revenue.* Berkeley: University of California Press.

Levi, Margaret, Audrey Sacks, and Tom Tyler. 2009. "Conceptualizing legitimacy, measuring legitimating beliefs." *American Behavioral Scientist* 53(3): 354-375.

Lieberman, Evan S. 2002. "Taxation data as indicators of state-society relations: possibilities and pitfalls in cross-national research." Studies in Comparative International Development 36(4): 89-115.

Lijphart, Arend, and Markus ML Crepaz. 1991. "Corporatism and consensus democracy in eighteen countries: Conceptual and empirical linkages." British Journal of Political Science 21(2): 235-246.

Lindkvist, Thomas. 1987. "Fiscal Systems, the Peasantry and the State in Medieval and Early Modern Sweden." *Genése de L'état Möderne. Paris*.

Mann, Michael. 1986, 2002. *The Sources of Social Power. Vol. 1: A History of Power from the Beginning to AD 1760*.Oxford: Oxford University Press.

Meltzer, Allan H., and Scott F. Richard. "A rational theory of the size of government." *The Journal of Political Economy* (1981): 914-927.

Moene, Karl Ove and Michael Wallerstein. 2001. “Inequality, Social insurance, and Redistribution” *American Political Science Review* 95(4): 859-874.

Nistotskaya, Marina, Nicholas Charron, and Victor Lapuente. 2014. "The wealth of regions: quality of government and SMEs in 172 European regions." *Environment and Planning C: Government and Policy* 32.

Pierson, P. 2000. “Increasing Returns, Path Dependence, and the Study of Politics.” *American Political Science Review* 94(1): 251–66.

Pommerehne, W.W., A. Hart & B.S. Frey. 1994. ‘Tax Morale, Tax Evasion and the Choice of Policy Instruments in Different Political Systems’ *Public Finance* 49: 52-69.

Porshnev, B.F. 1965. Les Soulèvements Populaires en France de 1623 à 1648, Paris. Pp 395-6.

Putnam, Robert D., Robert Leonardi, and Raffaella Y. Nanetti. 1994. *Making democracy work: Civic traditions in modern Italy*. Princeton University Press.

Quinn, D & R.D. Shapiro. 1991. ‘Business Political Power: The Case of Taxation’ *American Political Science Review* 85, 851-73

Rodrigue, Jean-Paul, Claude Comtois, and Brian Slack. 2013. The Geography of Transport Systems. London: Routledge

Ross, Michael L. 2004. "Does taxation lead to representation?." *British Journal of Political Science* 34 (2): 229-249.

Rothstein, B. & J. Teorell. 2008. ‘What is Quality of Government? A Theory of Impartial Government Institutions’. *Governance* 21(2): 165-90.

Rothstein B. 2003. ‘Social Capital, Economic Growth and Quality of Government The Causal Mechanism’ *New Political Economy* 8(1): 49-73

Scott, James C. 1998. *Seeing Like A State: how certain schemes to improve the human condition have failed*. New Haven: Yale University Press.

Shapiro, Gilbert, and John Markoff. 1998. *Revolutionary Demands: A Content Analysis of the Cahiers de Doléances of 1789*. Stanford, CA: Stanford University Press.

Skinner, J. & J. Slemrod. 1985. ‘An Economic Perspective on Tax Evasion.’ *National Tax Journal* 38(3): 345-353.

Slemrod, Joel. 1992. *Why people pay taxes: Tax compliance and enforcement*. University of Michigan Press.

Spicer, M.W. & L.A. Becker . 1980. ‘Fiscal Inequity & Tax Evasion: An Experimental Approach’. *National Tax Journal* 26(2): 171-175.

Spicer, M.W. & S.B. Lundstedt (1979). ‘Understanding Tax Evasion’. *Public Finance,* 31(2): 295-305

Steinmo, S. 1993. *Taxation and Democracy*. New Haven and London: Yale University Press.

Steinmo, Sven, and Caroline J. Tolbert. 1998. "Do institutions really matter? Taxation in industrialized democracies." *Comparative political studies* 31(2): 165-187.

Thies, C. 2004. State Building, Interstate and Intrastate Rivalry: A Study of Post-Colonial Developing Country Extractive Efforts, 1975–2000. *International Studies Quarterly,* 48, 53–72.

Tilly, Charles. 1992. *Coercion, Capital, and European States, AD 990-1992*. Oxford: Blackwell.

Touzery, Mireille. 2007.‘Cadastres en Europe à l’Époque Moderne. Modèles continentaux et absence anglaise’ in *De l’estime au cadastre en Europe: L’époque moderne,* ed. Mireille Touzery. Paris: Ministère de l’Économie, des Finances et de l’Emploi et Ministère du Budget, des Comptes Publics et de la Function Public.

Uslaner, E.M. 2002. *The Moral Foundations of Trust.* Cambridge, UK: Cambridge University Press.

Van Zanden, Jan Luiten, Eltjo Buringh, and Maarten Bosker. 2012. "The rise and decline of European parliaments, 1188–1789." *The Economic History Review* 65 (3): 835-861.

Webber, Carolyn, and Aaron B. Wildavsky. 1986. *A History of Taxation and Expenditure in the Western world*. London: Simon & Schuster.

White, Eugene. 1995. “The French Revolution and the Politics of Government Finance, 1770–1815.” *Journal of Economic History* 55(2): 227–55.

Wilensky HL. 2002. *Rich Democracies: Political Economy, Public Policy, and Performance*. Berkeley: Univ. Calif. Press