

Left-wing Tax Strategy Depends on the Electoral System

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June 14, 2019

Abstract

This paper is concerned with the effect of political ideology on taxation. Surprisingly, left-wing governments are often found to rely more on regressive consumption taxes than progressive income taxes, but there is no consensus on why. I argue that the left redistributes differently depending on how electoral institutions affect political uncertainty and opposition influence. Institutions causing sharp shifts in power increase uncertainty, pushing left governments to expand progressive taxation. Institutions granting significant opposition influence allow the left to tax consumption more and redistribute through spending. Using a novel dataset on government tax revenue covering 31 countries in Western Europe, both Americas, and Australasia between 1800 and today, this paper examines the politics of taxation in the understudied period before 1945. The results suggest that left governments tax income heavier than consumption in majoritarian systems, while they tax consumption heavier than income in proportional representation systems.

Keywords: Redistribution, Taxation, Political economy, Ideology

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Two recent books on global inequality – Milanovic (2016) and Piketty (2014) – have directed attention to what the state can do to affect the distribution of income and wealth in society. Distributive conflict is commonly the major political dividing line, with left-wing parties fighting economic inequality using public policy. These parties are expected to implement a more progressive, redistributive, agenda than centrist and right-wing governments. While the theoretical expectations are straight-forward, the empirical evidence has so far failed to show any clear patterns. In fact, many scholars link left-wing government to *higher* taxes on the poor.

In this paper I seek to resolve this puzzle by presenting an argument where left-wing governments have the same goals (redistribution) but differ in the way they attain them (through progressive taxation or through maximizing tax revenue). How the left combats inequality depends on political institutions. I test this argument using a novel dataset over tax revenues and newly available data on the ideology of heads of government, allowing me to study the period from 1870 to 1945, which was when left-wing parties first emerged and gained power.

Left-wing parties emerged in an era characterized by radical changes to economic and political structure. Industrialization led to new political conflicts and the spread of modern representative democracy provided new arenas where these conflicts played out. Industrialization, democratization, and the rise of the left all coincide with the development of the modern tax system, a system using new types of taxes (e.g., income tax and broad-based consumption taxes) to collect an unprecedented amount of revenue. 1a shows this remarkable increase in tax revenues in a sample of mainly Western European and Latin American states.¹ Clearly, focusing only on the last decades of the twentieth century, which most earlier research does, ignores a significant part of the rise of the tax state.

A central aspect of representative democracy – the electoral system – underwent significant changes during the same period. 1 shows how the number of countries in the sample coded as democracies, as having a left-wing head of government (HoG) and using a proportional representa-

¹Based on a novel dataset covering 31 states in Europe, North and South America, Japan, Australia, and New Zealand from 1800 to 2012 collected in collaboration with Thomas Brambor. A detailed description of the dataset is provided in section A of the appendix.

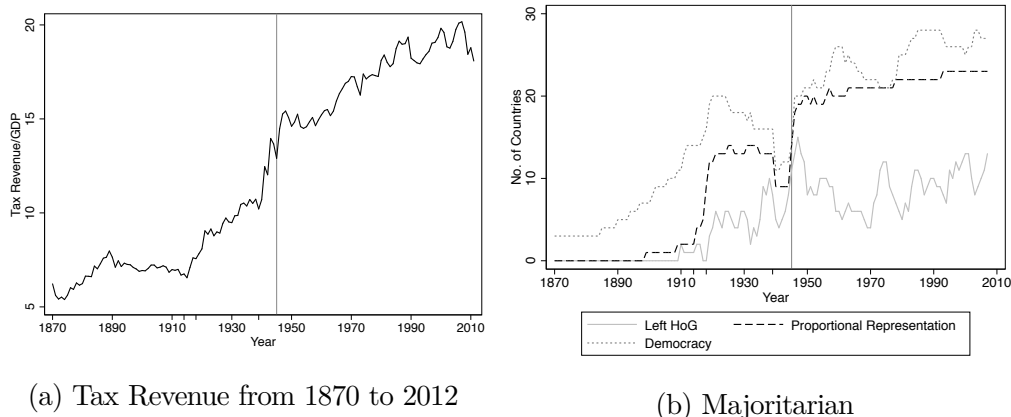


Figure 1: Ideology and Political Institutions from 1870 to 2012

tion (PR) electoral system change over time. While democracy, electoral systems and ideology have all been said to have an impact on taxation (see for example Meltzer and Richard 1981, Persson and Tabellini 2003 and Cusack and Beramendi 2006), most earlier research is concerned with the last three or four decades of the twentieth century, when these variables were fairly constant in many countries. What is clear from 1 is that there were important political changes in the late nineteenth and early twentieth century, long before the Second World War. Moreover, as we can see from 1a, these constitutional and ideological developments coincide with an unprecedented increase in taxation, suggesting that this period merits closer examination.

Perhaps counterintuitively, welfare states with left-party dominance (e.g., Sweden) often tax capital and corporations at very low rates, whereas small welfare states (e.g., the United States) often progressively tax capital and corporations. Furthermore, the former states rely more on regressive consumption taxes than the latter. There are many explanations as to why the left would tax regressively. One type of explanation focuses on welfare state expansion and claims that in order to keep expanding the size of government, the left was simply forced to tax consumption in addition to income (Ganghof 2006). Others argue that the left is constrained by corporatist interest groups or that the left taxes regressively since it can credibly commit to progressive transfers (Beramendi and Rueda 2007, Cusack and Beramendi 2006, Timmons 2010b).

Often forgotten in these explanations is that the mix between different types of taxes is per-

sistent and that tax systems are strongly path dependent (Morgan and Prasad 2009, Kemmerling 2009), making it important to investigate the origins of divergent patterns observed during the second half of the twentieth century. Although most research focuses on the postwar era, the roots of the modern taxation system are to be found long before that. Moreover, most of the existing explanations for left-wing taxation rely on factors specific to this later period, such as a large welfare state and strong unions, which were less important before 1945.

Theoretically, earlier explanations have failed to consider the strategic environment facing a left government. My argument is that when analyzing left-wing tax policy, focus should be on redistribution and how institutions shape the way the left tries to reach this goal. Left-wing governments adapt to the constitutional environment and employ different strategies for redistribution depending on institutional constraints. High likelihood of turnover of legislative control and uncertainty over the future likelihood of returning to office associated with majoritarian electoral systems means the left chooses to redistribute through the revenue system, making the state more dependent on progressive income taxes rather than regressive taxes on consumption. In proportional representation systems, less dramatic swings in relative power and more certainty over the future allows the left to focus on revenue yield and redistribute through transfers. In majoritarian systems a left-wing government focuses on short-term redistributive goals, and in proportional representation systems the left is more willing to invest in an efficient revenue system and compensate its adverse distributive effects through the expenditure side of the budget.

My argument differs in two ways from the existing literature, first regarding the preferences of the left and second in how institutions shape the strategic environment facing the government. I argue that the left does not necessarily want a progressive tax system rather it wants redistribution. This can be achieved by progressive taxation as well as through a combination of regressive taxation and progressive spending. In addition, I do not focus on institutional constraints on the left rather I focus on how one part of the institutional structure affects changes in relative power and influence over policy. When large power swings are common and the future distribution of power is uncertain, the left prefers a progressive, redistributive tax system. When sharp shifts

in power are rare and the distribution of future power less uncertain, the left prefers an efficient (but less progressive) tax system and redistributes through spending.

The hypothesized conditional effect of left government is evaluated using a novel dataset over tax revenue covering 31 countries from 1800 to 2012. The analysis focuses on the time between 1870 and 1945 and results suggest that left governments use a more regressive tax mix in proportional representation systems while the effect of left-wing rule is the opposite in majoritarian systems. I also evaluate two channels through which the electoral system affects left-wing tax strategy – partisan turnover and political constraints.

This paper makes two contributions. First, it highlights the drawbacks of analyzing the effects of institutions and ideology separately by arguing theoretically and showing empirically that the impact of left-wing government is different depending on the electoral system. Second, while earlier research mostly relies on samples from the last four decades, this paper uses a new dataset over tax revenue covering over two centuries. The dataset is an improvement in terms of temporal as well as geographic coverage. Apart from Europe, the sample covers both Americas as well as Australia, New Zealand, and Japan.

In the next section I present the theoretical argument followed by an overview of earlier research. Next, I present the data and the empirical analysis. The final section is a conclusion.

The Preferences of the Left

“The left” refers to a party that prefers more redistribution than a centrist or right-wing party. The important comparison for my argument is that the left, within a country, prefers more redistribution than the comparison category (e.g., center and/or right) *in that country*. So even if we expect the left in majoritarian countries to be more moderate, the assumption that they prefer more redistribution than the right in the same country still holds.² The empirical section further elaborates on this issue.

²The left does not have to be identical in proportional and majoritarian systems. For example, the left in a two-party majoritarian country might be more moderate if its preferences are closer to the median of the party compared to the median in a left party if there are three parties, something that is more likely in a PR system (Austen-Smith and Banks 1988). But a left-wing government in a PR system could also be more right-oriented since coalition governments, where the left is forced to cooperate with centrist parties, are more common in this

As has been pointed out before (e.g., Timmons 2010*a*), there is a tendency to conflate tax policy and redistribution. A common argument is that since the left wants to redistribute from the rich to the poor and progressive taxes are redistributive, the left is expected to rely on progressive taxes. However, it is possible to tax regressively while spending the revenue in a way that reduces inequality (Buchanan 1949; Engel, Galetovic and Raddatz 1999). Thus, assuming the left wants redistribution does not automatically imply that it prefers progressive taxation.³

To simplify the discussion and focus on the choices of the left, it is helpful to assume that income taxes are paid by the individual while consumption and excise taxes falls entirely on consumers. I also assume that spending and saving decisions are independent of the tax mix (following Pechman and Okner (1974, chapter 3). As in Engel, Galetovic and Raddatz (1999), I consider a simple model of taxing and spending focusing on redistribution. The government can choose between a progressive tax (e.g., income tax) or a regressive tax (e.g., consumption tax) and sets the overall tax level and spending (more or less targeted towards the poor). For a given level of targeting, consider the choice between a regressive (or simply proportional) tax on consumption and a progressive tax on income. If the two taxes were identical in collection costs, revenue potential, and efficiency, clearly the progressive tax would be better for the left since redistributive spending is paid for by progressive taxation. However, these taxes are not the same.

First, collection costs are lower for taxes on consumption than on income (Bird and Zolt 2005), meaning that for every dollar spent on tax administration, more revenue is generated from taxes on consumption than income. Second, consumption taxes suffer less from avoidance and evasion, thus providing a more effective generator of government revenue.⁴ Recent research also suggests that a shift from income to consumption taxation increases economic output (Auerbach 2006, Lee and Gordon 2005, Widmalm 2001). In sum, shifting to a relatively more regressive tax system increases government revenues through lower administrative costs and less evasion as well

system. It is possible that on average these two mechanisms cancel out.

³This was the case in post-war tax reform in the United Kingdom and Sweden (Andersson 2017).

⁴Empirical evidence supports this assertion regarding the value-added tax (VAT), a type of broad-based consumption tax (see Keen and Lockwood (2010) on the effects of the VAT on revenues, Gordon and Nielsen (1997) on evasion, and Aizenman and Jinjarak (2008) on collection efficiency of the VAT).

as through an increase in overall output.

The progressivity of the tax system has less impact on redistribution than the amount it generates in revenue (Engel, Galetovic and Raddatz 1999). Given a certain targeting of spending, the poorest always gain from higher tax revenues because this means more funds available for programs benefiting them. In contrast, the poor are less affected by the progressivity of the tax system because the amount they pay is very small compared to the benefits. In terms of relative income after taxes and government spending, the rich are worse with higher overall taxes, increased progressivity of taxation, and more targeted spending (ibid.). If a consumption tax increases fiscal capacity more than progressive taxation, then it allows the government to reduce inequality more, everything else being equal. Another way of expressing this is that the left has a progressive spending program it needs to finance. Since higher revenue means more of the program, it is in the interest of the government to employ a tax structure that maximizes revenue.

A highly progressive tax system will also lead to redistribution, but this strategy leaves less room for redistributive spending compared with the combination of regressive taxation, high revenues, and progressive spending. To be clear, the argument is about relative emphasis in the tax mix. That is, a tax mix based on both progressive and regressive elements is likely to generate more revenue than one relying solely on progressive taxes, everything else being equal.

In sum, the left can achieve some level of redistribution on the revenue side, but this takes a toll on fiscal capacity and on the scope of progressive spending. Another option is a relatively more regressive tax mix with highly redistributive transfers, but this strategy hinges on the increased regressivity being offset by redistributive spending. This relationship between taxing and spending is key to understanding how left-wing tax strategy is affected by the electoral system. The key insight is that the left under the right circumstances tax consumption not because they are constrained, but because it furthers their redistributive agenda.

The Impact of Electoral Systems

Changing the tax system into one that generates more revenue with lower collection costs and less evasion creates more opportunity for redistribution in the future. The problem from a political point of view is that changes to the tax system have distributive effects. That is, shifting taxation from income to consumption hurts some groups and benefits others. As mentioned in the previous section, a simple way to balance tax inequalities is to use the transfer system to compensate, making it is possible for a party to tax its own potential voters without suffering in future elections. But, as a United States Senate staff member, quoted in Steinmo (1993, p. 199-200), put it when asked why Democrats do not introduce a VAT: “This is not Sweden. How can we be sure that that extra money won’t just be used to cut the taxes of the rich even more, or to buy more B-1 bombers?” Uncertainty regarding the future was also a key component of trade union opposition to the VAT in Britain in the 1960s (Whiting 2000 p. 204). This uncertainty, I argue, is linked to how the electoral system distributes power.

What I mean by electoral system is the formula transforming votes into seats in the lower house, and the district magnitude. I follow earlier work in distinguishing between two main types of electoral systems, proportional representation (PR) and plurality/majoritarian systems (e.g., Colomer 2004, ch. 1, Lijphart 2012, Persson and Tabellini 2003, Powell 2000, Rae 1967).⁵ An important difference emphasized by Powell (2000) is that the majoritarian formula *manufactures* strong legislative majorities. Even if there are three parties with an equal share of the popular vote, the formula commonly translates this situation into a strong majority for one party (ibid.).⁶ In contrast, proportional representation leads to less sharp shifts in policy as a result of changes in the underlying public opinion (Gabel, Hix and Malecki 2008). Moreover, PR systems provide a closer representa-

⁵While there are different versions of PR and majoritarian rule (e.g., simple majority and plurality) and differences in district magnitude (e.g., multi-member districts or single-member districts), the major differences are between these two categories, not within them (Rae 1967). What I refer to as “majoritarian” systems are characterized by low district magnitude and the use of majority or plurality formulas. On the precise empirical operationalization and measurement see section 4.2.

⁶It is important to note that this is an observed empirical regularity, not a deterministic prediction. Coalition governments in majoritarian systems do exist, for example the coalition between the Conservatives and Liberal Democrats after the 2010 general election in the United Kingdom.

tion of the median voter than majoritarian systems (Powell 2000, ch. 9), which means that a small shift in relative party support can lead to greater changes in policy in majoritarian countries. Or as Powell expresses it regarding majoritarian systems: “The relatively small number of parties and exaggeration of vote swings in the legislative results magnify strategic mistakes, short-term swings due to issues and personalities of the day, and implications of intra-party struggles” (ibid., p. 200.).

There are two ways in which the electoral system affect the tax strategy of the left. The first effect is related to how the electoral system translates votes to seats, often with heavily distorted results.⁷ Such distortions mean that more votes do not necessarily result in a higher likelihood of remaining in government. Majoritarian systems lead to larger swings in power since a small change in voter preferences can have a substantial impact on policy. In my sample, of all the cases of an incumbent party or coalition losing its majority or plurality-dominant position in the legislature to a different party/coalition, 80 percent occurred in majoritarian systems, and 20 percent in proportional representation systems (calculations using information in Coppedge et al. 2017). When electoral volatility is high, it is harder for the left to predict its possibility of staying in power, leading the left to pursue a short-term redistributive strategy. Interestingly, in the United Kingdom an industry-sponsored report complained that the electoral system led to volatile political outcomes causing sharp shifts in economic policies (including taxation) damaging the British business climate (Rogowski 1987). This is also stressed by Timmons (2010*a*), who argue that in systems with low partisan turnover the left/right will tax their own supporters more since they can credible commit to future spending on this group. For example, a left-wing party in a low turnover system will tax more regressively, and their constituents will not try to evade the tax since they know government spending will benefit them. In contrast, of there is high partisan turnover, the party in power cannot commit to spending in the future, so abstains from taxing its supporters. An important distinction between my argument and Timmons’, is that in his argument the game is played between parties and voters/taxpayers who can evade taxes, and taxing ones own voters is more

⁷For example, in the election of 1951, the Labour party in the United Kingdom attracted 48.8 percent of the vote (a record high), but it only resulted in 295 seats, while the Conservatives’ 48 percent of the votes yielded 321 seats (Thorpe 2008, p. 140).

efficient because they are less likely to evade taxes if their own party is in power. In my argument I build on prior work showing how consumption taxes are by design more efficient than income taxes.

The second effect is that proportional representation systems are more likely to generate coalition (or minority) governments in which a left-wing party needs to compromise with other parties more to the right (e.g, Iversen and Soskice 2006). In contrast, majoritarian elections (by design) often result in a majority government, in which the government is less constrained in its policy choices. Among the countries included in this paper that are also covered by the Seki and Williams (2014) dataset, 76% of cabinets in plurality/majoritarian systems were supported by a majority in parliament, compared to 64% among PR countries.⁸ A single-party majority government should be more united than a majority coalition, thus making this type of government the least favorable in terms of opposition influence. In majoritarian systems, 46% of cabinets were single-party majorities, compared to 6% among PR countries.⁹

Importantly, the impact of PR constraining the left when in power also means more influence to the left when in opposition. Two factors important for opposition influence are the bargaining power of the government and the parliamentary committee system. How much influence is given to parties outside of the government in legislative committees is often mentioned as a key mechanism for opposition influence (e.g., Powell 2000 and Strøm 1990). However, a recent reinterpretation of the role of committees holds that their primary role is not to provide the opposition with opportunities to affect policy, but to allow coalition partners to “police” their bargains (Martin and Vanberg 2011). While Strøm (1990) and Martin and Vanberg (2011) are less concerned with differences between countries using PR and majoritarian systems than with coalitions and minority governments, it is important to note that committee structures facilitating opposition influence are very common in PR systems while the opposition has very low influence through committees in majoritarian countries (Powell 2000, ch. 2). If political institutions encourage opposition influence,

⁸Seki and Williams (2014) provide data on 22 of the countries of concern in this paper. Their dataset covers the years 1945 to 2014.

⁹Countries rarely change electoral systems, but the experience of one that did, New Zealand, is instructive. From 1945 to 1993, New Zealand used a majoritarian electoral system and 20 out of 22 elections resulted in a single party majority cabinet. After switching to PR, none of the 10 following elections resulted in a single-party majority government (three resulted in majority coalitions and seven in minority governments) (using data from Seki and Williams (2014)).

the effect of losing power is dampened since the left can still affect policy in opposition. Note that in this way opposition influence can counteract political volatility.

On the other hand, institutions that concentrate power in strong majority governments minimize the influence of the opposition, amplifying the impact of volatility. Majoritarian systems manufacture strong single-party majorities with little or no influence for the opposition.¹⁰ Regardless of how important the committee system is for opposition influence in coalitions and minority situations, opposition influence is severely limited when there is a majority government (Martin and Vanberg 2011; Strøm 1990 and Powell 2000). Opposition parties in this situation “are not typically in a position to force change simply because government parties, at least when they are united, are able to ignore the opposition’s wishes” (Martin and Vanberg 2011, p. 157). The influence of the opposition is stronger when it is facing a minority government since such governments need outside support to pass legislation (Martin and Vanberg 2011, ch. 7). This is rather straight forward since “[g]overnment majorities usually need bargain only with their own factions” while “[m]inority governments must bargain with the opposition” (Powell 2000, p. 103).

To sum up, proportional electoral systems are less volatile and more often generate coalitions or minority governments compared to majoritarian systems. In Powell’s aggregate measure of opposition influence based on bargaining power and committee systems, the average score for PR countries is more than twice that of majoritarian countries (2000, p. 109). Moreover, the electoral system is presumably causally prior to both government bargaining power and parliamentary committee system.

Opposition influence affects the long-term strategy of the left. The ability to affect policy in opposition grants the left a possibility to protect redistributive spending from complete reversal. Since opposition influence is stronger in PR, the risk affiliated with regressive taxation and progressive spending is lower, and the left will choose this strategy of redistribution. In majoritarian systems, the impact of losing an election is much greater, inducing the left to choose the less effective but safer option of progressive taxation. Thus, the left will push for a completely different

¹⁰These features associated with the different systems are also factors in electoral system choice, see Boix (1999), Colomer (2004, p. 10.), and Leemann and Mares (2014).

tax system in PR systems than in majoritarian systems. This effect should exist independently of other effects of the electoral system (see below). The argument can be summarized in two hypotheses: *H1: Left governments in PR countries increase the share of consumption taxes*, and *H2: Left governments in majoritarian countries increase the share of income taxes*.

There are two alternative ways in which the electoral system affects left wing tax policy: volatility and political constraints. The first line of argument expect the left in the more volatile political environment of a majoritarian system to focus on short term strategies for redistribution and increase income taxation. In a more predictable and less volatile environment – as in PR systems – the left instead chooses the more efficient strategy of expanding consumption taxation, focusing on increasing fiscal capacity. These alternative mechanisms constitute *H3: Left governments in countries with low legislative election turnover increase the share of consumption taxes* and *H4: Left governments in countries with high legislative election turnover increase the share of income taxes*.

The second line of argument, which is related to the veto players logic (Tsebelis 2002), is that the left is less constrained in majoritarian systems than in proportional representation since the latter produces more executive constraints in the form of e.g., coalition partners. Thus, if the left prefers progressive taxation, they should be more able to pursue that policy if they are in power in a majoritarian system. In a PR system, possible minority status or coalition partners with veto power will constrain the left from implementing a more progressive platform. Thus, the final hypothesis: *H5: Left-wing governments expand income taxation and decrease consumption taxation when there are few veto players/fewer political constraints*.

It is possible to conceive of other testable implications from the theory, especially regarding expenditures. However, there is no data available on government spending that provide the same coverage in time and across countries as the information on tax revenue.

Earlier studies have emphasized the impact of presidential and parliamentary forms of government (e.g., Linz and Valenzuela 1994; Persson and Tabellini 2004; Shugart and Carey 1992), but this dimension falls outside the scope of this paper. Although some scholars combine electoral systems and forms of government (e.g., Lijphart 2012; Powell 2000), separating the analysis of

empirical effects of electoral systems from the impact of form of government is not uncommon (see for example Persson and Tabellini 2003). Importantly, the type of government does not change my expectations regarding the effects of electoral system since election turnover volatility, the distribution of seats in the legislature, and opposition influence is linked to the electoral system in both presidential and parliamentary systems.¹¹

Ideology and Tax Policy: A Review of the Literature

Earlier research into the effects of partisanship on economic policy gives contradictory results.¹² While some find that left-wing rule is associated with lower unemployment, larger governments, and more welfare spending (Cameron 1978, Cusack 1997, Hibbs 1977, Hicks and Swank 1992, Kittel and Obinger 2003), others find no such connection (e.g., a meta-study presented in Imbeau, Pétry and Lamari (2001), looking at 43 studies, finds no link between partisanship and policy outputs). Scholarly work on the determinants of tax structure highlights the puzzling result that countries that experienced long periods of left-wing dominance are characterized by a large welfare state paid for with regressive taxation (Beramendi and Rueda 2007, Kato 2003, Steinmo 1989). This has led to the argument that regressive consumption taxes raised considerably more revenue, which facilitates a larger welfare state (Kato 2003, Steinmo 1993). However, the causality might as well run in the opposite direction, where preferences for increased spending coupled with a need to keep taxes on capital low (in order to boost economic growth) leaves regressive taxation as the only option (Ganghof 2006). Others have suggested that the left in fact does seek redistribution through the revenue system (i.e., progressive taxation) but is constrained by corporatism, making increases in income and capital taxation difficult (Beramendi and Rueda 2007).

While early contributions were interested in the pure effect of parties, few were concerned with

¹¹In the main specification I nevertheless control for presidentialism, the results remain the same. In section C of the appendix I present results when the sample only contains parliamentary countries.

¹²There is a wealth of literature concerning the determinants of government growth, emphasizing, among other factors, international trade (Rodrik 1998), interest groups (Mueller and Murrell 1986), and the role of the bureaucracy (Niskanen 1971). This paper speaks to the subset of this literature that considers the redistributive role of government and its connection with party politics as the main factors explaining the size of government. Moreover, the focus of the present paper is on the *shape* of taxation and not its *size*.

how this effect is mediated by formal institutions (Schmidt 1996). Lately, this possibility has been explored by scholars who found that the effect of left parties on the size of government is stronger in more majoritarian countries (Tavits 2004, using Lijpharts (2012) majoritarian/consensus distinction), the effect of partisanship on welfare expenditure is muted by the number of constitutional veto points (Kühner 2010), and the effect of parties is stronger where the legislature dominates the executive (Cusack and Beramendi 2006).

The previous work most closely connected to the argument in this paper is Cusack and Beramendi (2006). They argue that the effect of partisanship (left and right) on taxes on labor is different in majoritarian and proportional representation systems. Following insights from the median voter theory (Downs 1957), they assume that majoritarian elections lead to a two-party competition where both parties converge on the median voter, reducing differences between parties in these systems. In proportional representation, the authors expect a greater difference between left and right parties (following Austen-Smith and Banks 1988). Interestingly, both these assertions have been investigated empirically and results suggest – contrary to Cusack and Beramendi’s expectations – that proportional representation systems tend to generate policy closer to the median voter compared to majoritarian countries (Powell 2000). Moreover, case study evidence shows that the United Kingdom, using a single-member district electoral system, has been plagued by large shifts in policy as a result of shifting power between the right and the left (Rogowski 1987, Steinmo 1993). Empirically, Cusack and Beramendi use Lijphart’s (2012) executive-parties index, of which the electoral system is only one of five dimensions. Using data from fourteen OECD countries from 1965 to 1995 (in five-year intervals), they show that the left imposes a higher tax rate on labor income in systems with a weak executive compared to the left in a system with a strong executive.

While there is a large body of literature concerning the last decades of the twentieth century, there are very few large-n studies on the period before the Second World War. One exception is Aidt and Jensen’s (2009) study of ten countries in western Europe from 1860 to 1938 where they find that the left-wing seat share in parliament is associated with less taxing and spending, more revenue from customs, and less from market taxes. Another exception is Peter Lindert (2004*a* and 2004*b*) who is

concerned with social spending and economic growth from the late nineteenth century and onwards. While explicitly ignoring constitutional factors and political parties in his empirical analysis (2004*a*, p. 4 and p. 27), he alludes to the importance of the ability for the left to commit to spending when pushing through regressive taxation, speculating that the left will be less averse to regressive taxation as long as it can commit to generous social programs (2004*b*, p.36 and p. 305). However, Lindert does not elaborate on if and why some left parties can commit to redistributive spending while others cannot. A major drawback with most historical studies (both qualitative and quantitative) is that they focus solely on Europe, which is problematic given the unique history of this part of the world.

Empirical Strategy

To test the hypotheses, I will present descriptive evidence as well as formal econometric analyses using a novel dataset covering up to 22 countries from 1870 to 1945.¹³ The first part describes the data used to measure the dependent and independent variables. Next, I present descriptive patterns in partisanship, electoral systems, and tax structure. The third part motivates the econometric strategy and presents regression results.

Before I move on to describing the data, a brief note is needed regarding the choice of time period. Data availability for government ideology constricts the analysis to the period from 1870 forward, which is not a major issue since this paper focuses specifically on left-wing governments in democracies, a combination that is extremely rare before the twentieth century. Likewise, the modern conception of the “left” and the “right” is strongly linked to industrialization and urbanization, processes that did not begin to have a major impact until the latter half of the nineteenth century (at least for most of the countries in the sample) (Mann 1993, p.597-598 and p.723). Moreover, the early phase of industrialization gave rise to an urban/rural cleavage and it was not until later class became the salient dimension (Lipset and Rokkan 1967, p.19-21), which is visible in terms of the rise of the first left parties in the late twentieth century. An advantage of starting in 1870 is also that many countries were not independent (New Zealand, Canada) or unified (Italy and Germany) before this.

¹³Note that although the data on tax revenue cover 31 countries, the sample is restricted since I focus only democracies and because of data availability for other variables in the model.

There are several reasons for focusing on the period up to 1945. First, 1945 marks the beginning of a long period of relative peace in Europe and a remarkable increase in the size of government. The major part of earlier research in this area focuses on the second half of the twentieth century, a very particular economic and international context. It is also during the 1960s and onwards that the modern version of broad-based taxation – the VAT – spread around the world. The rapid spread of the VAT was partly a result of policy diffusion and promotion by international organizations such as the IMF (Eccleston 2007), factors outside the theoretical framework presented here. Setting 1945 as the end-point of the temporal scope decreases the risk of factors such as the influence of international organizations distorting the results. In addition, while most earlier research has focused on the post-war era, many factors such as party systems, institutions, and tax systems are path dependent and rarely change. Concentrating on this crucial earlier period when democracy, party systems, and modern taxation coevolved constitutes an important contribution to our knowledge of the development of modern tax systems.

It is important to note that democratic countries using PR were almost nonexistent before the early twentieth century. The first country to introduce PR was Belgium in 1899 and in 1915 only four countries in the dataset were democratic and used PR. However, by 1930 this number had increased to eleven (compared with only six democracies using a majoritarian system). Similarly, left governments did not appear until the early twentieth century. The first left-wing head of government was José Batlle Ordonez in Uruguay in 1903, and the first left-wing head of governments in *democracies* were Andrew Fisher and Aristide Briand in Australia and France, respectively (both in 1910) (Brambor, Lindvall and Stjernquist 2014).

Data

The dependent variables were collected in collaboration with Thomas Brambor and present information on central government tax revenue, covering 31 countries from 1800 (or independence) to 2012.¹⁴ To our knowledge, there exists no comprehensive historical dataset on public finance. Even

¹⁴The dataset is unbalanced and the countries included are: Argentina, Australia, Austria, Belgium, Bolivia, Brazil, Canada, Chile, Colombia, Denmark, Ecuador, Finland, France, Germany, Ireland, Italy, Japan, Mexico,

for OECD member states, no cross-national database provides information from the nineteenth century up to today. The Government Revenue Dataset (2017) is based on secondary sources providing partial temporal or geographic coverage.

In many cases different sources relied on the same underlying data; in other cases, they reported conflicting estimates of revenue yields and the size of the economy. To complement and adjudicate between existing databases, we combined information from these existing datasets with information from country-specific sources.¹⁵

Total central government tax revenue is disaggregated into direct and indirect taxes. These categories are further disaggregated into income and property taxes (direct taxes), and customs, excises, and consumption taxes (indirect taxes). The main reason we focus on *central* government revenue is that data availability at the local level is very poor in comparison. The dataset is described in more detail in section A of the appendix.

Since property taxation includes taxes on land, its distributive effect is not entirely straightforward. Recent investigations of the distributive impact of different taxes finds that excises and consumption taxes are regressive while income taxes in general are progressive (Prasad and Deng 2009, Joumard, Pisu and Bloch 2012). I therefore focus on income, excise, and consumption taxes in the following section. Similar indicators of the regressivity/progressivity of taxation have also been used in similar studies focusing on more recent trends in taxation (see Timmons 2005). Since the theoretical expectation is the same for excise and consumption taxes, these are analyzed together, and “consumption” refers to both in the remainder of the paper.

The measure of electoral systems – the main independent variable – focuses on the formula translating votes to seats. The main distinction between the systems is whether majority rule or proportional representation (PR) is used. Although there is variation within PR systems, these differences are much smaller than those between PR and majoritarian systems (Rae 1967). Consequently, I have collapsed open and closed list PR into the same category. Since a larger

New Zealand, Norway, Paraguay, Peru, Portugal, Spain, Sweden, Switzerland, The Netherlands, The United Kingdom, The United States, Uruguay, and Venezuela

¹⁵The complete list of sources is available in the codebook.

district magnitude is associated with greater proportionality (*ibid.*), majoritarian countries are defined as single-member districts with majority rule.¹⁶ There are countries that at some time used multi-member districts with majority rule, but since the theoretical expectations regarding this combination is unclear, I have chosen to not include them in the majoritarian category.¹⁷ This means that the two categories PR and majoritarian are not exhaustive, and there is a third category of mixed and indirect systems. The information on electoral systems is from Colomer (2004).

My proposed mechanism presupposes that the country is a democracy. A widely-used measure of democracy available from 1800 is Polity IV (Marshall and Jaggers 2002), but since this index largely ignores suffrage (an important aspect if one is interested in democracy and redistribution), I have instead chosen the dichotomous definition in Boix, Miller and Rosato (2012) to separate democracies from non-democracies. This measure is based on *both* participation and contestation. Participation is conceptualized as suffrage rights for the majority of the male population and contestation means that the executive is directly or indirectly elected in free and fair elections (*ibid.*).

To measure government ideology I rely on the Heads of Government dataset that codes the ideological orientation of the head of government (left, right, or center) in 33 countries from 1870 to 2012 (Brambor, Lindvall and Stjernquist 2014). The original coding is based on an economic dimension and takes five values: left, right, center, other and none (when there is no head of government). “Left” parties have a strong redistributive platform and include communist, socialist or social democratic parties. “Center” parties are agrarian and social liberal parties. Coded “right” are conservative, market-liberal, Catholic, Christian democratic, and fascist parties. For example in the United Kingdom, the Conservatives are coded “right”, the Liberals “center”, and Labour “left”. For more detailed information regarding coding the reader is referred to Brambor, Lindvall and Stjernquist (2014). Based on this dataset, I have created a variable taking the value one if there is a left head of government and zero otherwise. Important to note is that in some country years there is no viable left party (e.g., post-1945 United States).

¹⁶In section C of the appendix I present results using lower chamber district magnitude instead of electoral system.

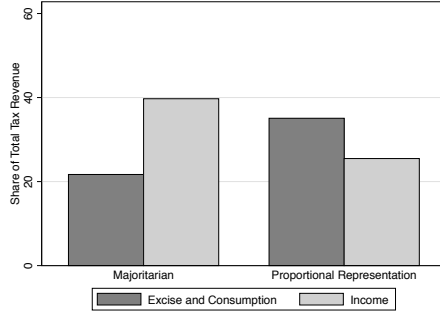
¹⁷While the majority of democracies use some kind of PR or majoritarian system, there are exceptions. For example, Switzerland used an indirect electoral system between 1848 and 1918 and Japan, Italy, and Mexico used a mixed system from 1994, 1993, and 2000, respectively.

This measure is far from perfect. The ideological composition in the cabinet and/or assembly would be more appropriate, but as far as I know there is no dataset that provides this information sufficiently far back in time. It is also important to point out that the head of government is different depending on whether the country is presidential or parliamentary. How the assembly is elected affects tax policy regardless since even a president in most cases needs support from an elected assembly to implement legislation. It is also important to point out that since my econometric analysis relies on within-country variation, any independent effects of presidentialism/parliamentarism are controlled for since they very rarely change within a democratic country.

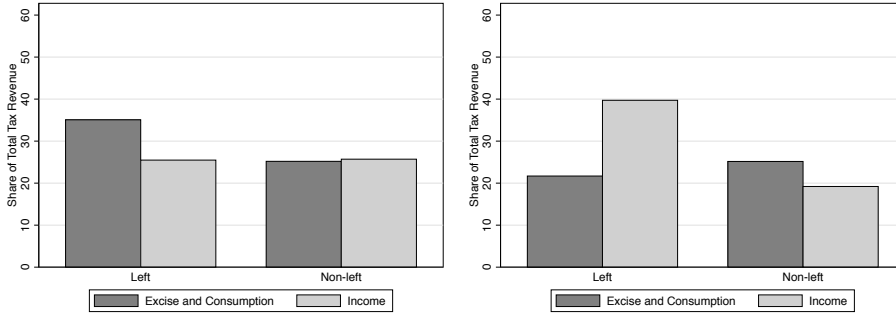
In order to test the mechanism with which the electoral system affects left-wing tax strategy I measure volatility and constraints separately. To measure volatility I use the Historical Varieties of Democracy dataset to create a variable indicating the cumulative number of times the incumbent party or coalition lost its majority or plurality dominance in the legislature to a different party or coalition (Coppedge et al. 2017). In order to measure veto players/constraints, I use the Political Constraints Index (Polcon III) from Henisz (2000).

Descriptive Evidence

Figure 2a shows the mean share of income and consumption taxes when a left-wing head of government was in office grouped by electoral system. The figure clearly shows that left-wing governments in majoritarian countries generate almost twice as much revenue from income than from consumption taxes, while the pattern is the opposite in proportional representation systems (although the difference between the shares is smaller). While this pattern is supportive of H1 and H2, it is also consistent with the argument that the left is more constrained in PR systems (H5). After all, minority governments and coalitions are more common in these countries. If the left is simply more constrained in PR and we accept the assumption that the left wants redistribution, then we would expect PR countries to be associated with smaller governments and less redistribution compared to majoritarian states, assuming left governments are as common in both systems. But, as earlier research has shown, PR countries have larger governments (Persson



(a) Taxation by the Left, 1870-1945



(b) Proportional Representation

(c) Majoritarian

Figure 2: Tax Shares in Proportional and Majoritarian Countries, 1870-1945

2002) and redistributes more (Iversen and Soskice 2006).

The pattern could also be a result of the electoral system. That is, we would see this pattern even if there were no difference between the left and center/right within electoral systems. Figure 2b cuts the data differently, presenting the mean share of income and consumption taxes in proportional representation countries grouped by left and non-left head of government. The left portion of the figure shows the share of income and consumption taxes in PR democracies ruled by the left. The right side displays the same information for PR democracies with a non-left head of government (i.e., center and right-wing). There is hardly a difference between tax shares among non-left governments but the difference between income and consumption taxes within left governments is clear: they rely much more on the latter. This is in line with the first hypothesis (H1) that left governments rely more on regressive taxes in PR systems.

Figure 2c makes the same comparisons as Figure 2b, but in countries using a majoritarian electoral system. Among non-left governments, consumption taxes constitute a larger share of

government revenues, but the difference compared with the income tax share is small. In the group of democracies ruled by a left government, revenue from income tax is almost twice that coming from consumption taxes. This is in line with H2.

We can get an additional piece of evidence by looking at the introduction of progressive and regressive taxes using the Tax Introduction Dataset (Seelkopf and Genschel 2017). There were only five cases in the sample of a personal income tax – which is generally progressive – being introduced by a left-wing head of government, and *all of those occurred in majoritarian countries*. In contrast, among the six left-wing introductions of a general sales tax – which is a regressive tax on consumption – four were in PR systems. The pattern is even clearer for the Value-added Tax (VAT), where six out of the eight left-wing introductions occurred under PR.

In sum, not only are left-wing governments in majoritarian countries more likely to increase their reliance on income tax, they were also more likely to introduce the tax in the first place (compared to left-wing governments in proportional representation systems). In PR, left-wing governments are more likely to introduce regressive taxes, and also increase their importance in the budget.¹⁸

Econometric Analysis

While the patterns in the previous section are suggestive, a more careful analysis is needed to rule out alternative explanations and spurious relationships, as well as testing H3-H5 which deals with electoral volatility and political constraints.

To control for unobserved heterogeneity, all regressions include country-fixed effects. Importantly, this excludes estimation of factors that do not change over time within countries, such as geographic region, constitutional veto points, and electoral system. However, since I am interested in the effect of the ideological orientation of the government, which does change over time within states, this is not a problem.¹⁹

¹⁸It is interesting to note that Peru and Spain introduced the personal income tax when the left was in control in a majoritarian system, while the VAT was introduced by left-wing governments during a period when both countries had a PR electoral system. All VATs were introduced after the period under consideration in this paper.

¹⁹Among the democracies in the sample, the electoral system changes in only three cases. In section C of the appendix, I report results when dropping the linear electoral system term (since it rarely change over time

A Lagrange multiplier (LM) test confirms correlated errors. As recommended by Beck and Katz (2011), I include a lagged dependent variable to alleviate this problem. A second LM test reveals that one lag is enough to remove autocorrelation.²⁰

There are two additional issues with this specific data structure. First, as Beck and Katz (1995) have shown, time-series cross-section data are plagued by both contemporaneous correlation across units and unit-level heteroskedasticity. To account for these issues, I employ panel-corrected standard errors. Second, non-stationarity can lead to so-called spurious regressions. However, since the dependent variables are bounded (the share can only take values between 0 and 100), non-stationarity should not be a concern.²¹

Controls

Earlier research has suggested a relationship between war and taxation (Tilly 1990; Scheve and Stasavage 2010). War pressure induces states not only to increase existing taxes but also to invest in new modes of taxation. Armed conflict can also have an impact on the electoral fortunes of left-wing parties. I have included a dummy variable indicating the presence of war using the Correlates of War dataset (Palmer et al. 2015).

During the 1930s many countries suffered the effects of the Great Depression, possibly affecting both tax revenues and the fortunes of political parties. More generally, the state of the economy might impact both the share of tax revenue from different sources as well as the electoral fate of left-wing parties (see Lindvall 2017). To control for the economic situation, I have included the log of GDP per capita (from Maddison (2007)).

There might be a concern that the non-left parties which are the reference category are significantly different. In particular, Christian Democratic parties might pursue a different redistributive

within country), as well as running models without country fixed effects. Results remain unchanged.

²⁰In section C of the appendix, I show results using three alternative ways of dealing with autocorrelation: Prais-Winsten regression, Driscoll-Kraay errors, and clustering errors by country. Results remain the same. The potential bias induced by using country fixed effects and a lagged dependent variable (Nickell 1981) should not be a problem since T is greater than 20 (Beck and Katz 2011).

²¹The model does not, however, take into consideration that the dependent variable is bounded (e.g., it might generate out of bounds predictions). Papke and Wooldridge (2008) recommends using the Bernoulli quasi-MLE approach when analyzing panel data with a fractional dependent variable. Using this method yields the same results but with narrower confidence bands (lending stronger support for H1 than the present specification). Results are available from the author upon request.

policy than other right-wing parties (e.g., Huber, Ragin and Stephens 1993). I have included a variable from the HoG-dataset indicating if the head of government in that year was from a religious party.

Although the way the lower house is elected matters for a government both in presidential and parliamentary systems, *how* it matters differs since the government in a presidential system is elected independently of the lower house. Model 6 includes a control for presidentialism using information from Przeworski (2013).²² Finally, I add two additional control variables. First, total tax revenue as a share of the economy is included to control for the effects of existing tax capacity. Second, decade dummies are added to control for common shocks. The following two equations are estimated:

$$\begin{aligned} Consumption_{it} = & \alpha_i + \beta_1 Consumption_{it-1} + \beta_2 Left_{it-1} + \beta_3 Esystem_{it-1} \\ & + \beta_4 Left_{it-1} * Esystem_{it-1} + \beta_5 X_{it-1} + \epsilon_{it} \end{aligned} \quad (1)$$

and

$$\begin{aligned} Income_{it} = & \alpha_i + \beta_1 Income_{it-1} + \beta_2 Left_{it-1} + \beta_3 Esystem_{it-1} \\ & + \beta_4 Left_{it-1} * Esystem_{it-1} + \beta_5 X_{it-1} + \epsilon_{it} \end{aligned} \quad (2)$$

Where α represents country fixed effects and β_4 the interaction effect. X is a vector of control variables. “Esystem” is a dichotomous variable taking the value 1 if PR and 0 if majoritarian. All independent variables are lagged one year.

For H3-H5, I replace the dichotomous electoral system variable with volatility (cumulative partisan election turnover in the lower chamber) and political constraints, which are closer empirical measures of the alternative mechanisms.

²²In section C of the appendix I report results from models excluding presidential countries from the sample. The results remain essentially the same, but somewhat less precisely estimated for the impact on income tax and somewhat more precisely estimated for the impact on excise and consumption taxes.

Results

For H1 and H2, I present results for 8 models for each dependent variable with successive inclusion of controls. Models 1-8 in Table 1 all have the share of excise and consumption taxes as dependent variable and evaluate hypothesis 1. Models 1-8 in Table 2 concern H2 and thus have the share of income taxes as a dependent variable.

H1: Consumption Taxation

The first hypothesis is that left governments rely more on consumption taxes in PR countries. Model 1 shows the simple model with only fixed effects for time and country, while the subsequent models add controls. In all models, the interaction effect is positive and in four cases significant at the 10 % level. In support of the hypothesis, the results shows a positive impact of left-wing government on consumption taxation in PR systems, while the impact is negative in majoritarian systems. However, these estimated effects fall short of conventional levels of statistical significance. It is important to point out that including a lagged dependent variable, country fixed effects as well as time dummies is extremely demanding. Except for GDP/capita, none of the control variables had a statistically distinguishable impact on the share of consumption taxes.

H2: Income Tax

The second hypothesis states that left governments in majoritarian systems should rely more on income tax. Model 1 in Table 2 shows the simple model with only the variables of interest and country and time fixed effects, and models 2 - 8 add controls. When interpreting Table 2, focus should be on the estimated impact of left wing governments in majoritarian systems (i.e., row two). Across all different specifications there is a positive and statistically significant impact of left wing governments on the income tax share. This effect remains even when controlling for the alternative mechanisms – volatility and political constraints – suggesting that there is an independent effect of the electoral system. Moreover, the impact is fairly strong: a left-wing head of government in a country using a majoritarian electoral system is associated with an almost

Table 1: Results: Excise and Consumption Taxes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
				h				
Lag DV	0.84*** (0.03)	0.84*** (0.03)	0.84*** (0.03)	0.85*** (0.03)	0.85*** (0.03)	0.85*** (0.03)	0.85*** (0.03)	0.85*** (0.03)
Left HoG	-0.94 (0.91)	-0.99 (0.92)	-1.03 (0.92)	-0.96 (0.97)	-0.95 (0.97)	-0.94 (0.97)	-0.82 (0.98)	-0.91 (0.97)
Electoral System	0.79 (0.73)	0.80 (0.73)	0.88 (0.73)	0.69 (0.75)	0.54 (0.76)	0.59 (0.77)	0.42 (0.76)	0.55 (0.76)
Left X Electoral System	1.91 (1.26)	1.97 (1.27)	2.35* (1.27)	2.13 (1.31)	2.26* (1.32)	2.28* (1.32)	2.16 (1.32)	2.40* (1.31)
War		0.45 (0.61)	0.55 (0.61)	0.85 (0.61)	0.85 (0.61)	0.75 (0.62)	0.73 (0.62)	0.67 (0.62)
GDP/capita (log)			-3.13* (1.67)	-3.23* (1.76)	-3.32* (1.77)	-3.49** (1.78)	-3.50** (1.79)	-3.62** (1.78)
Tax/GDP				-0.11 (0.07)	-0.10 (0.07)	-0.10 (0.07)	-0.09 (0.07)	-0.09 (0.07)
Religious HoG					1.02 (1.04)	1.02 (1.04)	0.91 (1.07)	1.01 (1.07)
President						0.06 (1.29)	0.05 (1.29)	-1.79 (2.23)
Veto Players							2.59 (2.79)	3.30 (2.74)
Volatility								0.29 (0.28)
<i>N</i>	675	675	675	652	652	648	648	648
R ²	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
χ ²	13679.9	13733.8	14422.9	29541.9	29782.1	29662.4	55663.8	59.89
RMSE	4.50	4.50	4.49	4.46	4.46	4.47	4.47	4.47

Panel corrected standard errors in parentheses

Constants estimated but not reported

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

two percentage point short-run increase in the income tax share. The long-run effect (assuming a permanent left-wing government) is even higher: 8 percentage points. The results also suggests a negative effect of left-wing head of government on the income tax share in PR systems.

In line with earlier research, models 2-8 reveal that war and GDP/capita has a consistently positive and statistically measurable impact on the income tax share. Size of government, religious HoG, and presidentialism are all associated with a lower share of income tax. More frequent electoral turnover of the legislature on the other hand, was found to be positively related to the share of income tax. Interestingly, political constraints had no measurable impact.

In sum, the analysis suggests that left governments tax more regressively in proportional

Table 2: Results: Income Tax

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Lag DV	0.77*** (0.04)	0.76*** (0.04)	0.76*** (0.04)	0.78*** (0.04)	0.78*** (0.04)	0.77*** (0.04)	0.77*** (0.04)	0.77*** (0.04)
Left HoG	1.60** (0.77)	1.29* (0.75)	1.39* (0.76)	1.91** (0.82)	1.91** (0.82)	1.89** (0.82)	2.05** (0.94)	1.94** (0.93)
Electoral System	0.06 (0.85)	0.07 (0.86)	-0.02 (0.86)	-0.22 (0.84)	0.10 (0.86)	0.08 (0.86)	-1.02 (1.06)	-0.87 (1.05)
Left X Electoral System	-2.40** (1.17)	-2.04* (1.16)	-2.60** (1.15)	-2.80** (1.16)	-3.10*** (1.17)	-2.99** (1.19)	-3.54** (1.41)	-3.18** (1.40)
War		1.50** (0.69)	1.23* (0.67)	1.39** (0.65)	1.36** (0.64)	1.32** (0.67)	1.30* (0.70)	1.29* (0.69)
GDP/capita (log)			5.23** (2.25)	5.82** (2.35)	6.18*** (2.36)	5.89** (2.38)	6.96*** (2.58)	6.33** (2.56)
Tax/GDP				-0.16* (0.09)	-0.17* (0.09)	-0.18** (0.09)	-0.24** (0.10)	-0.25** (0.10)
Religious HoG					-2.99* (1.58)	-2.98* (1.58)	-2.76* (1.59)	-2.45 (1.60)
President						-5.54* (2.83)	-5.79** (2.80)	-6.10** (2.84)
Veto Players							0.83 (3.08)	1.83 (3.11)
Volatility								0.77** (0.38)
N	609	609	609	586	586	582	551	551
R ²	0.89	0.89	0.89	0.90	0.90	0.90	0.90	0.90
χ ²	95294.4	54259.9	141876.9	130.1	743.6	110.9	1642.5	172195.2
RMSE	5.73	5.72	5.70	5.49	5.48	5.49	5.55	5.55

Panel corrected standard errors in parentheses

Constants estimated but not reported

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

representation and more progressively in majoritarian systems. This supports both H1 and H2. However, the marginal effect of left-wing head of government fails to achieve conventional levels of statistical significance when evaluating the impact on consumption taxation. Interestingly, the results remain after controlling for the two alternative mechanisms volatility and political constraints (veto players). In the next section I look closer at these two mechanisms.

H3-5: Volatility and Constraints

In two additional analyses I test hypotheses 3-5 which deals specifically with alternative mechanisms with which the electoral system affect left-wing taxation: constraints and volatility.

Table 3 (in section B of the appendix) reports results for the impact of a left-wing head of government conditional on volatility (the cumulative number of legislative turnover of majority). As expected, when volatility is low, left-wing government is associated with higher consumption taxes (H3) and lower income taxes (H4). However, the results are far from being statistically distinguishable. This is interesting since previous research has emphasized partisan turnover as important for tax policy (Timmons 2010*a*).

Table 4 in section B of the appendix shows the impact of left-wing government conditional on political constraints. Models 1-3 have excise and consumption taxes as dependent variables, and models 4-6 have income tax share as outcome. In line with the expectations in H5, the impact of left-wing government on the income tax share when constraints are low is positive. However, the results fail to reach conventional levels of significance.

In sum, I find no clear evidence for an impact of partisan turnover or veto players.

Conclusion

Political institutions need to be taken into account if we are going to understand how government ideology affects policy output. I have argued that while left-wing governments share a preference for redistribution, how they attain this goal depends on the strategic environment created by political institutions.

I have presented three ways in which a left-wing government's strategy is affected by the electoral system: political volatility, political constraints, and opposition influence. Using a novel historical dataset over government tax revenue I find that in majoritarian countries, the patterns of taxation conform to traditional intuition: left-wing governments rely more on the progressive income tax than on regressive taxes on consumption. In proportional representation systems, the pattern is the reverse; left-wing governments rely more on consumption taxes. Interestingly, this pattern is not due to political volatility (which is higher in majoritarian countries), or political constraints (which are more numerous in proportional representation systems). In fact, the conditional impact of left wing government remains even when controlling for these to factors.

By themselves, they do not condition the effect of left-wing government on tax policy.

These results suggest that many of the puzzles associated with the impact of ideology on taxation might be better understood if we take the institutional environment into account. They also help explain conflicting results regarding the impact of partisanship and the relationship between taxation and redistribution. The reason scholars have found a connection between left rule, size of government, and redistribution might be that PR is more strongly associated with left rule than majoritarian systems (Iversen and Soskice 2006). My results are completely compatible with this finding and does not conflict with the higher redistribution found in countries governed by the left (Bradley et al. 2003 and Iversen and Soskice 2006). At the same time, my explanation is based on the different strategies employed by the left as a result of the electoral system, not constraining factors such as unions (Beramendi and Rueda 2007) or mounting spending pressure (Ganghof 2006), allowing it to explain earlier periods in history when these factors were not present.

There is also a slightly different way of interpreting the results, highlighting the historical context of the period under study. Iversen and Soskice (2006) suggest that left-wing parties in majoritarian systems seek to represent both the poor and the middle class and will, to begin with, attract middle class voters but implement a overly redistributive economic policy, leading the middle class to eventually support the right-wing party. In PR countries, the middle class has a separate party representing them, which will have more influence in a coalition with a party representing the poor. In the long-run, Iversen and Soskice expect left-wing governments to be rare in majoritarian systems since the middle class will vote for the right. Interestingly, in my data I follow the very first left-wing governments and actually do find that they implement a more progressive tax policy than the left in PR systems. An interesting line of future research would be to investigate whether this also lead to a decline in the frequency of left-wing governments in these systems.

Finally, it is important to point out that the theoretical arguments in this paper are only partly examined due to the paucity of historical data on disaggregated government *spending*. Future research could make major contributions by collecting and systematizing spending data, allowing more precise tests of theories concerning the politics of redistribution and taxation.

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A The Government Revenue Dataset

The overall aim of the coding process has been to create time series that are internally consistent within a country over time and connects to contemporary datasets (such as the OECD for European and North American countries and CEPAL for South America) in order to allow easy updates of the dataset. An advantage of this approach is that it is suitable for fixed-effects models, like the ones employed in this paper. We also aimed at minimizing the number of sources for each data series while keeping high coverage over time. Our main interest is to explain long-run trends within countries, so in situations where we needed to prioritize between using one source to obtain cross-country consistency and employing different sources to reach within-country consistency, we preferred the latter. There are many decisions involved in creating the final dataset and I refer the interested reader to the codebook in which we also list all the country-specific primary and secondary sources that we used in the final version of the dataset.

In order to make the dataset comparable over time we needed to settle for a fairly simple structure. The total tax revenue of the *central* state is disaggregated based on the guidelines set out in the *Government Finance Statistics Manual 2001* of the International Monetary Fund (2001), but given the paucity of historical data and the focus of our project, we combined some categories. Total central tax revenue is divided into direct and indirect taxes. Further, two subcategories of direct taxes are measured separately: taxes on property and taxes on income. The subcategories of indirect taxes are: consumption taxes, excises, and customs (which includes taxes on import, exports, exchange profits, and profits from export/import monopolies). Property taxes include taxes on real estate, wealth, and land taxes. The income tax category includes taxes on income, profits, and capital gains by individuals and corporations as well as taxes on payrolls and workforces. Ideally, these categories should be measured separately, however, the historical data sources rarely allow for a more fine-grained categorization. Tax on consumption consists mainly of sales and turnover taxes prior to the introduction of value-added taxes in the 1950s and 1960s. Excises are taxes on specific goods, for example tobacco or alcoholic beverages. Excise and consumption taxes are collapsed into one category in the empirical section since the theory does

not distinguish between the two. Finally, it is important to note that the focus on tax revenue means that fees and social security contributions are excluded.

Restricting the data to the central level allows for a larger sample, both in time and across countries. It is important to note that this is problematic in cases where there is significant subnational authority in the area of taxing and spending, as this revenue will not show up in our data.

It is important to note that even though the sample is the widest available, it still excludes a significant part of the world. For example, the dataset contains no countries from Eastern Europe or Africa and includes only one Asian country (Japan). Data availability also means there is a bias towards more developed countries, and Europe is overrepresented for earlier years. Another important aspect is that the sample varies over time – i.e., countries are only included once they are independent, which means that the sample is smaller in the beginning of the nineteenth century. Data limitations also mean that Europe is overrepresented for earlier years. However, the universe of possible cases also changes over time. For example, in the beginning of the twentieth century there were only 55 sovereign states in the world (Karatnycky 2000).

The number of countries included also varies depending on data availability. Sometimes there is no information available for a country in a specific year. This can be the result of lack of data or that there was no tax of that type. For example, the number of countries with an existing income tax was much lower in the nineteenth than in the twentieth century.

B Results for H3-5

Table 3: Results: Volatility

	(1) Excise & Cons.	(2) Excise & Cons.	(3) Excise & Cons.	(4) Income	(5) Income	(6) Income
Lag DV	0.845*** (0.0267)	0.848*** (0.0297)	0.850*** (0.0307)			
Left HoG	1.029 (0.834)	1.183 (0.858)	0.789 (0.857)	-0.193 (0.950)	-0.830 (0.954)	-0.949 (1.047)
Volatility	0.204 (0.263)	0.272 (0.264)	0.281 (0.294)	0.939** (0.391)	0.596 (0.390)	0.766* (0.396)
Left X Volatility	-0.198 (0.259)	-0.218 (0.265)	-0.168 (0.269)	0.124 (0.220)	0.342 (0.223)	0.378 (0.233)
War		0.663 (0.598)	0.567 (0.609)		1.510** (0.649)	1.419** (0.703)
GDP/capita (log)		-2.491 (1.664)	-3.207* (1.784)		4.222* (2.226)	6.056** (2.517)
Tax/GDP		-0.0935 (0.0699)	-0.0696 (0.0750)		-0.175* (0.0923)	-0.293*** (0.105)
Religious HoG		1.061 (0.998)	0.674 (1.064)		-1.978 (1.603)	-2.253 (1.593)
President		-1.413 (2.089)	-1.391 (2.221)		-5.928** (2.806)	-6.369** (2.842)
Veto Players			3.720 (2.711)			1.383 (3.096)
Electoral System			0.824 (0.757)			-1.283 (1.045)
Lag DV				0.792*** (0.0412)	0.775*** (0.0412)	0.778*** (0.0419)
N	716	676	648	633	596	551
r2	0.900	0.897	0.892	0.892	0.905	0.902
chi2	15835.8	24071.7	22217.1	85767.3	97.69	764.1
rmse	4.474	4.426	4.479	5.771	5.456	5.554

Panel corrected standard errors in parentheses
 Constants estimated but not reported
 * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4: Results: Constraints

	(1)	(2)	(3)	(4)	(5)	(6)
	Excise & Cons.	Excise & Cons.	Excise & Cons.	Income	Income	Income
Lag DV	0.845*** (0.0268)	0.848*** (0.0300)	0.849*** (0.0310)			
Left HoG	1.949 (2.290)	1.299 (2.369)	-1.124 (3.265)	3.055 (2.343)	2.146 (2.387)	5.337* (2.921)
Veto Players	4.829** (2.356)	3.808 (2.438)	3.390 (2.808)	1.756 (2.734)	2.223 (2.732)	2.709 (3.183)
Left X Veto Players	-3.533 (4.813)	-1.928 (5.118)	3.022 (7.063)	-6.861 (5.235)	-4.882 (5.522)	-11.55* (6.777)
War		0.689 (0.599)	0.613 (0.615)		1.448** (0.695)	1.355* (0.699)
GDP/capita (log)		-2.292 (1.657)	-3.182* (1.774)		4.812** (2.388)	5.779** (2.495)
Tax/GDP		-0.0897 (0.0700)	-0.0843 (0.0729)		-0.173* (0.0937)	-0.240** (0.100)
Religious HoG		0.593 (1.028)	0.627 (1.074)		-2.315 (1.563)	-2.260 (1.600)
President		-0.0808 (1.267)	-1.401 (2.223)		-6.653** (2.990)	-6.312** (3.091)
Volatility			0.220 (0.281)			0.882** (0.385)
Electoral System			0.847 (0.765)			-1.140 (1.057)
Lag DV				0.799*** (0.0401)	0.779*** (0.0402)	0.772*** (0.0423)
<i>N</i>	716	676	648	602	565	551
r2	0.900	0.897	0.892	0.889	0.903	0.902
chi2	15450.3	26682.3	30081.3	20745.8	20428.7	255.0
rmse	4.469	4.427	4.481	5.874	5.543	5.556

Panel corrected standard errors in parentheses

Constants estimated but not reported

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

C Robustness tests

All models below are identical to model 8 in table 1, unless stated otherwise, and thus include a full battery of controls. Table 6 refers to models with excise and consumption taxes as dependent variables and table 5 refers to models with income tax as outcome.

Models 1-4 uses different methods to adjust standard errors: Prais-Winsten AR(1), Driscoll-Kraay, Newey-West lag(1), and standard errors clustered by country. The results remain the same. In model 5 I drop the linear electoral system term since electoral system rarely change over time and the model includes country fixed effects, the results do not change. In model 6, I drop country fixed effects for similar reasons. The results remain unchanged. In model 7 I use data from Coppedge et al. (2017) on the lower chamber district magnitude instead of the indicator variable on electoral system. The results remain the same. Important to note is that data on lower chamber district magnitude is more scarce than for electoral system, so this model is estimated on a smaller sample. Finally, in model 8 I restrict the sample to only parliamentary states. The results remain the same, but are less precisely estimated for income tax and slightly more precisely estimated for excise and consumption tax.

Table 5: Robustness tests: Excise and Consumption Taxes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Prais-Winsten	Driscoll-Kraay	Newey-West	Cluster/Robust	No esys term	No Country FE	District Magnitude
Left HoG	2.748** (1.235)		7.892*** (2.286)	7.892*** (3.104)		2.003** (0.857)	13.76** (6.255)
Left HoG		7.892** (2.800)			2.121** (0.938)		
Electoral System	0.829 (2.510)		2.555 (3.335)	2.555 (5.320)		-0.0772 (0.928)	
Left X Electoral system	-5.379*** (1.851)		-12.65*** (3.062)	-12.65*** (3.120)		-2.410* (1.415)	
Electoral system		2.555 (4.066)					
War	2.293** (0.957)	4.822*** (1.405)	4.822*** (1.377)	4.822 (2.856)	1.302* (0.700)	1.471** (0.639)	3.380 (5.703)
GDP/capita (log)	12.61** (5.059)	0.484 (5.545)	0.484 (4.508)	0.484 (6.437)	6.781*** (2.558)	1.608 (1.409)	-6.912 (6.488)
Tax/GDP	0.246 (0.207)	0.675 (0.466)	0.675*** (0.249)	0.675** (0.293)	-0.228** (0.0976)	-0.0821 (0.0546)	0.00415 (0.305)
Religious HoG	-1.117 (2.143)	-5.621 (3.653)	-5.621 (3.737)	-5.621* (2.923)	-3.039** (1.520)	-1.576* (0.940)	-2.896 (3.945)
President	-13.71** (5.367)	-15.68*** (3.613)	-15.68*** (4.030)	-15.68*** (4.711)	-5.710** (2.772)	0.147 (0.804)	-19.04*** (5.977)
Veto Players	-0.797 (4.006)	2.074 (8.801)	2.074 (6.686)	2.074 (7.876)	0.269 (3.035)	2.130 (2.368)	20.71** (9.449)
Left X Electoral System		-12.65*** (4.147)			-3.802*** (1.412)		
Lag DV					0.769*** (0.0430)	0.869*** (0.0291)	0.518*** (0.104)
Low. Chamb. Dist. Mag.							-0.330 (0.845)
Left X L. Ch. Dist mag							-1.718** (0.851)
N	562	562	562	562	551	551	158
r2	0.474			0.592	0.902	0.893	0.803
chi2	2338.3				979.1	3467.1	108.2
rmsc	5.923			8.672	5.552	5.699	6.130

Different standard errors in parentheses
 Constants estimated but not reported
 * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 6: Robustness tests: Excise and Consumption

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Prais-Winsten	Driscoll-Kraay	Newey-West	Cluster/Robust	Dropping esys term	Dropping Country FE	District Magnitude
Left HoG	-0.604 (1.002)		2.343 (2.023)	2.343 (2.495)		-1.059 (0.910)	4.530 (4.590)
Left HoG		2.343 (2.709)			-0.831 (0.975)		
Electoral system	1.343 (1.706)		1.429 (2.095)	1.429 (5.101)		-0.528 (0.579)	
Left X Esys	1.515 (1.399)		2.212 (2.641)	2.212 (2.933)		2.951** (1.304)	
Electoral System		1.429 (1.688)					
War	0.877 (0.837)	3.584* (1.872)	3.584** (1.718)	3.584 (2.443)	0.729 (0.616)	0.793 (0.506)	-3.974 (3.288)
GDP/capita (log)	-2.545 (3.683)	-2.647 (5.054)	-2.647 (3.658)	-2.647 (6.453)	-3.477* (1.775)	-1.878*** (0.686)	-1.638 (3.546)
Tax/GDP	0.123 (0.130)	-0.770*** (0.194)	-0.770*** (0.169)	-0.770** (0.347)	-0.0913 (0.0720)	-0.0812** (0.0327)	-0.162 (0.162)
Religious HoG	-0.911 (1.255)	-5.123 (3.511)	-5.123 (3.211)	-5.123** (2.091)	1.038 (1.042)	1.893*** (0.582)	-0.432 (1.940)
President	-15.63** (7.307)		-1.961 (3.183)		0.0174 (1.284)	-0.502 (1.076)	0 (.)
Veto Player	3.396 (3.761)	5.187 (5.881)	5.187 (6.268)	5.187 (15.16)	2.955 (2.799)	0.172 (2.232)	-2.979 (6.523)
Left X Esys		2.212 (3.198)			2.285* (1.322)		
Lag DV					0.848*** (0.0308)	0.898*** (0.0201)	0.715*** (0.0593)
Low. Ch. Dist. Mag.							-0.202 (0.539)
Left X L. C. dist. mag.							-0.514 (0.568)
N	650	650	650	650	648	648	148
r2	0.348			0.273	0.892	0.888	0.908
chi2	4249.9				54503.9	5560.9	6978.4
rmse	4.682			8.248	4.467	4.492	3.823

Different standard errors in parentheses
 Constants estimated but not reported
 * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$