Structural Transformations and The Political Roots of Fiscal Capacities in LA

Héctor Bahamonde

PhD Candidate • Political Science Dpt. • Rutgers University

e:hector.bahamonde@rutgers.edu

w:www.hectorbahamonde.com

21st April, 2016

Abstract

There is a very strong consensus on the role of fiscal capacities on state formation. However, the available models developed for Europe do not perform well for Latin American countries. Taking a sectoral politics approach, we argue that the political monopoly pursued by agricultural incumbents was broken when an emerging industrial sector accepted to be income-taxed in exchange of industrial tariffs (i.e. protectionism) and better institutional guarantees of political representation, leading to the 19th century political oligarchies. We test these relationships using cross-national panel data from 1900 to 2010 for a sample of Latin American countries. More historical details are discussed presenting Chile as a shadow case to illustrate the mechanisms at work. Both approaches strongly confirm the theory.

Bob: I think the core of it is sound (pending Paul's comments on the stats). But on the theoretical section, you need to make clearer what you mean by the trade-off between short term costs (foregoing expropriation?) and long-term gains of growing taxation. At least that's what I think you mean. I am also still unclear about what kind of expropriation you're talking about – can you give examples? I'd also like to see a bit more flesh on the bones when you talk about fiscal capacity – perhaps in the Chilean case, if not more generally. Presumably, you mean not only an income tax, but also an expansion of the bureaucracy that is supposed to monitor and collect it. Do you have information that this actually took place in Chile or elsewhere after they passed the income tax? Did they reform the Finance Ministry, for example, or add to the tax agency budget? I do think you've made a lot of progress on the paper and that its well on the way to completion.

Dan: Equifinality: is this the only path for income taxation? I have to include an "alternative explanations" section.

Me:

Put more meat/meaning to the Cox prediction/simulation plot. For ex., how much longer does it take for a country with "low" industrial development? Make sure I put concrete numbers in the Discussion section. CALCULATE THE FISCAL DEVELOOPMENT DELAY

Also, criticize this idea that incumbent elites will block all new technologies that might endanger their political/economical advantaged positions (was it Boix?). Here, (I have to say) I follow Olson: Why not instead of block it, tax it?

I. Introduction

the only important coercion which is
crucial to development is taxation

Sir William Arthur Lewis, 1965

the budget is the skeleton of the state
stripped of all misleading ideologies

Schumpeter, 1991

Lorem to many political economists, fiscal sociologists, development economist and economic historians, fiscal capacities are a necessary condition for political development and state formation. Much progress has been made for European countries, however there is still much work to do to understand the development of post-colonial Latin America state capacities. The consensus on the importance of fiscal capacities exists, however, the political and economic *origins* of fiscal capacities in LA are unclear. *Why do some countries have better fiscal capacities than others? What have been the factors that led post-colonial Latin American countries to self-impose a system to direct taxation?* These questions are key to understand the development of the modern state in Latin America. Particularly, it is difficult to use models developed to medieval Europe as wars have been insufficient to mobilize domestic resources. Moreover, elite structures were very different, challenging the standard assumptions and incentives of these models. Hence we must inquire what are the *conditions* that provided for fiscal capacities and trace down its origins, specifically, in the Latin American context.

This paper explains the conditions under which post-colonial Latin American states invested in fiscal capacities. These capacities are product of a bargaining conflict between agricultural political incumbents and an emerging and politically excluded industrial sector. When the rate of industrial output was fast enough to compensate for long-term losses relative to short-run expropriation-type strategies, agricultural monopolistic incumbents imposed a system to tax income. In exchange, the industrial class demanded commercial protectionism in the form of tariffs, and political representation via institutionalized and open-to-the-elites competition. Both the tax and political representation dimensions triggered a series of institutional investments such as institutions of checks-and-balances to monitor and enforce income taxation, including the development of professional bureaucracies. When industrial output was slow, agricultural monopolistic incumbents faced higher opportunity costs and rather than wait-and-tax industrial output, they shifted to expropriation-type strategies. The agricultural political monopoly was not broken, and the endogenous incentives to invest in institutions never existed. These countries then were trapped in underdevelopment sub-optimal

equilibriums. I test these relationships using econometric methods for panel data, particularly hazard models, and qualitative/historical evidence following a shadow case design. Both methodologies strongly support my argument.

II. Taxation and State Formation

This paper seeks to explain internal state capacities, specifically, by tracing the political origins of fiscal capacities. The literature on state formation situates taxation as one of the two main state capacities[1], and how states raised (or not) revenues, including the ability to tax incomes.

This issue is not new. There are several explanations on the relationship between taxation and state formation. Starting with Tilly [1992][2], international conflicts forced motivated kings to levy taxes. Local elites bargained representation to monitor the king's behavior[3]. However, these mechanisms have been recently challenged[4]. Particularly, outside Europe, the relationship between war and state formation is still contested[5]. Centeno [2002] finds that there were not enough wars to produce political mobilization of economic resources. Arias [2013, p. 665] finds that in México, "a focal central authority" must be present to be able to centralize fiscal institutions in the presence of external threats. Given these theoretical and empirical difficulties, some have generalized "war" for "interstate rivalries"[6], while others have interacted the presence of military conflict with state-military alliances[7]. The political origins of fiscal capacities remain disputed[8].

This paper acknowledges the possible influence of external threats. However it presents an argument based on *endogenous domestic* factors that lead (or not) early (and late) Latin American countries to invest in fiscal institutions. Most of the literature on state formation puts its emphasis on the financial *needs* caused by wars[9]. While my focus also shares the same emphasis centered on *fiscal needs*, it changes the focus from *external incentives*, to the *domestic incentives* to legally *robber* (i.e. "tax") domestic profit via an income tax.

Fiscal capacities form the very roots of the modern state. This paper presents an argument

[1] The other one being *legal capacities* and the study of the role of contract enforcement and property rights protection. See Cárdenas [2010] and also Besley and Persson [2010].

[2] See also Ames and Rapp [1977, p. 162, 170] where he argues that in Europe, "[m]edieval taxation developed from the "extraordinary" revenues, and ultimately became the fiscal basis of government [...] When governments found efficient sources of tax revenues in wartime it would have served their best interests to make these incomes permanent and unconditional".

[3] Stasavage [2011]. See also Levi [1989].

[4] Boucoyannis [2015].

[5] Besley and Persson [2009, p. 1218] does find that "The United States first introduced a form of income taxation in 1861 during the Civil War, and the Internal Revenue Service (IRS) was founded on the back of this with the Revenue Act of 1862".

[6] Thies [2005].

[7] López-Alves [2000, p. 37].

[8] In fact, Lange and Balian [2008, p. 314], in their "instigating" model, find that the exact opposite: states with high levels of state infrastructural power contain more violence.

[9] Great work done by Mahoney [2010], Soifer and Kurtz [2006, 2013] are not considered here. They focus on the legacies of different *types of colonial institutions* and different *types of colonial rules*. Although these are great contributions, this paper focuses mostly on the origins of *fiscal capacities* and its relationship with state formation.

building on the "fiscal sociology" tradition. This paradigm argues that the political economy of public finances offers the key to a theory of the state[10]. According to Schumpeter [1991, p. 108], "[t]axes not only helped to create the state. They helped to form it". From an historical perspective, the fiscal sociology paradigm proposes that the great modern cleavage was not the rise of capitalism (Marx) nor the rise of modern bureaucracy (Weber), but the rise of the "tax state", which developed institutions to penetrate the private, i.e. *individual*, economies[11]. From a conceptual perspective, the mere concept of "tax state" is misleading: "tax" has so much to do with "state" that the expression "tax state" might almost be considered a pleonasm[12].

Not all kind of taxes play a *formative* role. For example, states can levy revenues via tariffs and/or taxing revenues originated in the exploitation of natural resources. These *indirect* sources of revenue do not lead to the development of strong fiscal capacities since the state needs little organizational and political effort to collect those taxes. This paper claims that the endogenous domestic incentives to invest in *bureaucratic capacities* is key to understand any state-formation process. Without a strong bureaucracy able to collect and administer taxes is very difficult to conceive any theory of the state. That is why taxation and bureaucratization are correlated[13]. As others have argued, "administrative constraints are identified as the main constraint to the ability of states to collect revenues in general and direct taxes such as income tax in particular"[14]. Hence, given the null impact of indirect taxation on bureaucratization, that revenue is considered "unearned income"[15] or "easy-to-collect source of revenues"[16]. The relationship between taxation and bureaucratization also holds for LA. "In Latin America, for instance, when the state depends heavily on the taxation of international trade, rather than domestic economic activity, the state apparatus tends to be less developed because the collection of tariffs and duties does not require an elaborate fiscal structure"[17].

Direct taxation leads to the development of strong fiscal capacities[18]. Direct taxation involves

[10] Musgrave [1992, p. 99].

[11] Moore [2004b, p. 298]. This view is also shared by Schumpeter [1991, p. 100] and Lewis [1965, p. 42] - See epigraphs.

[12] Schumpeter [1991, p. 101].

[13] It is important to emphasize that we are referring to a system of taxation and bureaucratization *after* the collapse of colonial Latin America, i.e. about the time when the *liberal* experiments took place. A simple association between the development of bureaucracies and political (i.e. "democratic") development would be incorrect. For example, Mahoney [2010, p. 26] explains how more complex "colonizer institutions" (i.e., "mercantilist" institutions) played *against* political development. Consequently, building on this framework, we focus on the "liberal" bureaucracies that took place after the independence. For example, Peru had very strong "colonizer institutions", but shows very weak state capacities compared to Chile, which had weak "colonizer institutions" relative to Perú. Consequently, and very much in line with the concept of the "reversal of fortunes" (Acemoglu et al. [2002]), strong colonial states are not associated with strong modern/liberal states. In a similar vein, as others have argued, "[t]he modernization of bureaucracy preceded the process of democratization", as it is the case of Spain after 1845 (Rota [2016, p. 43]).

[14] Di John [2006, p. 5].

[15] Moore [2004b, p. 304].

[16] Coatsworth and Williamson [2002, p. 10].

[17] Campbell [1993, p. 177].

[18] In fact, according to, Best [1976, p. 53]"indirect taxes are but substitutes for direct taxes". This view is also supported by Moore [2004a, p. 14].

a compulsory transfer from private hands into the government sector for public purposes[19]. The most invasive way of direct taxation is *income taxation*, and its introduction "was one of the major events in fiscal history that contributed to the growth in government observed during the past 150 years"[20]. In other words, it separates private from public property, inserting the state in the private economic sphere[21]. Hence, direct taxation implies "meddling" in *private* (domestic) affairs. They require not only the development of the know-how to be able to collect, administer and enforce them (accounting, for example), but also they presume a strong *political* coercive (and legitimated) power able to do it in a sustained manner. Following the fiscal sociology tradition, this paper asserts that the introduction of income taxation in early (and not so early) Latin American countries played a mayor role in the formation of post-colonial states.

Income tax is the hardest to collect, administer and enforce. The literature emphasizes both technical and political constrains. "The detrimental factors commonly identified in developing country tax systems are: insufficient staff with appropriate skills, low public-sector wages, lack of up-to-date equipment and facilities [and] poor information collection and identification of taxpayers"[22]. For example, "[i]n 1967 the national income tax office in Guatemala employed 194 people, only 9 of whom had graduated from a college"[23]. Political constrains are also big impediments of income taxation. Taking a macro-historical and class-centered standpoints, this paper argues that it is theoretically appropriated to think of "how tax revenues depend upon the interests of different classes as they attempt to use political power via the state for their own needs and purposes"[24]. Moreover, this paper agrees in that "tax struggles are among the oldest forms of class struggle"[25].

Given that taxation is the best response of financial needs (both *international* and *domestic*), fiscal capacities form the very roots of the modern state. Many scholars find that income taxation, alone, explains considerable variance of state capacities[26]. However, others have argued in favor of others measurements of "stateness". For example, some scholars have argued in favor of military conscription or censuses[27]. Multidimensional are also very popular. Contrasting several existent indexes of state capacities, Fukuyama [2004, p. 7] argues that "stateness" is a two-dimensional concept, namely, the *scope of state activities*, which refers to different functions and the *strength of state power*, or the ability of states to execute policies. In a later work, however, Fukuyama [2013, p. 347] suggests a different two-dimensional framework, *capacity* and *autonomy*. Similarly,

[19] *Cfr.* Raja Chellia, "Trends in Taxation in Developing Countries", in Migdal [1988, p. 282].
[20] Aidt and Jensen [2009, p. 171].
[21] Musgrave [1992, p. 98].
[22] Di John [2006, p. 5].
[23] Di John [2006, p. 5].
[24] Best [1976, p. 50]. Furthermore, he argues that the "actual composition of taxes can be viewed as dependent upon the distribution of power rather than as an expression of the free choice of the majority of the people" (in Best [1976, p. 71]). For a similar analysis, see also Campbell [1993, p. 169].
[25] Goldscheid (1925), in Campbell [1993, p. 168].
[26] See for example, Hanson and Sigman [2013, p. 15] and Centeno [2002].
[27] For the latter, see for example, Lee and Zhang [2013].

Mann [2008, p. 357] argues that the state is composed by two dimensions too, a *despotic* and an *infrastructural* power[28]. Finally, Soifer [2012] proposes a three-dimensional measurement of state capacity, i.e. *security*, *administration* and *extraction*. Multidimensional conceptualizations of state capacities do improve our understanding of the complexity of state capacities[29]. Beyond being a measurement commentary, this paper develops a theory for the origins of, what we believe, is one of the main state capacities. Moreover, from an empirical and conceptual standpoints, parsimonious explanations about a complex world[30] enjoy from different advantages too. Hence, in this paper we focus on fiscal capacities, particularly, direct taxation, and more specifically, the development of income taxation.

The purpose of this paper is to explain the origins of *strong* and *weak state* capacities, tracing down their origins to *strong* and *weak fiscal* capacities, focusing on the political origins of indirect taxation, and particularly, income taxation. It is important to stress that this paper does not equate *higher taxation levels* with *higher levels of "stateness"*. For example, since "American institutions [were] deliberately designed to weaken or limit the exercise of state power"[31], the U.S. taxes very little. However, it is not reasonable to say that the U.S. has a "weak state". Rather, this paper proposes that the *development* of a direct tax system, particularly, *income taxation*, is causally related to the origins of state capacities[32]. Furthermore, following some fiscal economists, here we argue that what is linked to state capacities is not the actual tax-to-GDP ratio, but rather, "tax efforts". This index measures the ratio between the proportion of actual collection and taxable capacity[33]. As explained in the argument section and illustrated in our case study, the income tax system was fundamental for the formation of the LA states, not the for the actual tax money levied but for the set of institutions and political compromises that were needed to implement such a system.

The problem at hand is of the greatest importance. The idea that higher fiscal capacities are related to more capable states is widely accepted by many political economists[34]. However, it is unclear what the political *origins* of income taxation are. Much effort has been put in the study of tax reforms. For example, Fairfield [2013] studies different strategies policymakers pursue to tax elites starting in 1990. Mahon [2004] studies the causes of tax reform in LA starting around 1980s. Similarly, Ross [2004] studies the relationship between taxation and representation between 1971 and 1997. Although we acknowledge these contributions, we expand on those findings to study

[28] Soifer and vom Hau [2008, p. 224] argue in favor of the infrastructural approach proposed by Mann [1984].
[29] As Fukuyama [2004, p. 9] explains, "[a] country like Egypt, for example, has very effective internal security apparatus and yet cannot execute simple tasks like processing visa applications or licensing small businesses efficiently". In Singerman, (1995).
[30] Mann [1984, p. 112] argues that "[t]he state is undeniably a messy concept ".
[31] Fukuyama [2004, p. 6].
[32] See for example Besley and Persson [2014, p. 117], where they argue that "[t]axation has played a central role in the development of states".
[33] For example, Best [1976, p. 54] calculates tax efforts for Central America.
[34] For an example, see Besley and Persson [2011].

earlier (i.e. post-colonial) periods of state-formation. Finally, Sokoloff and Zolt [2007] studies the evolution of tax institutions comparing the U.S. with Latin America. However, as this paper shows, there is quite a lot of (unstudied) variance within LA[35]. This paper presents a macro-structural argument which traces under which conditions endogenous investments in fiscal capacities were more likely to happen in LA starting from 1900.

The remainder of this paper proceeds as follows. First, we present and develop our argument. Taking a sectoral politics approach, we argue that the political monopoly pursued by agricultural incumbents was broken when an emerging industrial sector accepted to be income-taxed in exchange of industrial tariffs (i.e. protectionism) and political representation, leading to the 19th century political oligarchies. Second, in the historical section, we present Chile as a shadow case to illustrate in more detail the mechanisms at work. Third, in the econometric section, we test these relationships using cross-national panel data from 1900 to 2010 for a sample of Latin American countries. Finally, we conclude with a brief discussion.

III. Argument

My argument comes in four parts. First, following the inertia of post-colonial legacies, early Latin American states were governed by agricultural monopolistic elites. The incipient industrial sector, conformed by newcomers around 1900s, was politically excluded. Second, early Latin American states enjoyed from different industrial output speed rates, relative to the agricultural sector output speed rates. Third, in post-colonial states where the industrial sector was large-enough to compensate for long-term losses relative to short-run expropriation-type strategies, agricultural monopolistic incumbents imposed a system designed to target and tax increasing industrial returns which took the form of an income tax. In exchange, the industrial class demanded commercial protectionism in the form of tariffs, and political representation via institutionalized and open-to-the-elites competition. Both the tax and political representation dimensions triggered a series of institutional investments such as institutions of checks-and-balances to monitor and enforce income taxation, including the development of professional bureaucracies.

In post-colonial states where the industrial sector was not large-enough to compensate for long-term losses relative to short-run expropriation-type strategies, agricultural monopolistic incumbents faced higher opportunity costs and rather than wait-and-tax industrial output, they engaged in to expropriation-type strategies. The agricultural political monopoly was not broken, and the endogenous incentives to invest in institutions never existed. These countries then were trapped in underdevelopment sub-optimal equilibriums.

[35] In a similar diagnostic, Di John [2006, p. 5] finds that in most studies regarding taxation and institutional development "[t]here is no attempt to explain why and how administrative capacities change. Second, there is no explanation as to why tax capacities differ across countries".

Agricultural Monopoly All monopolies generate waste and negative externalities. In this case, and as the historical section illustrates, we build a case for when *political* natural monopolies, that is, a situation where political competition was artificially limited, generating political and economic distortions. In this case, the agricultural sector would artificially impose policies convenient for their sector, at the expenses of the non-represented segments of the society. It would also limit entrance by others agents into the political system, putting higher legal barriers to entry.

Industrial Output Speed Rates Despite this monopolistic political market, an incipient industrial sector developed. There were many factors that explain the first industrial boom in LA. Among these, tariffs oriented to protect the agricultural markets unintentionally helped to protect the domestic industrial sector. There are other factors that led some LA countries to develop stronger industrial sectors than others. For brevity sake, we do not explore those in this paper. We left-censor our theory/data/sample starting in 1900. Figure 1 shows agricultural and industrial outputs (in logarithmic scales)[36] from 1900 to 2010 for a sample of LA countries. Additionally, each scatter plot shows two vertical lines. The green line shows when the system was opened for contestation[37], while the sky blue one shows when in each polity was imposed an income tax system[38]. While the parametric relationship between these phenomena is going to be left for the empirical analyses, in this section we introduced an operationalized way to observe inter-elite conflict, and particularly, how the agricultural sector was challenged by an incipient industrial sector.

Sectoral outputs measure the levels of inter-elite conflict. The degree in which industrial output catches up with agricultural output represents the degree in which the industrial sector *challenges* the agricultural sector. In other words, we are interested in measuring different levels of inter-sectoral inequality. As we explain below, political monopolies were terminated when inter-sectoral equality is high. However, when inter-sectoral equality is low, political resources will be oriented to perpetuate the legacies of the colonial period, prioritizing policy goods for the agricultural sector. Other scholars have already theorized about the relationship between the lack of economic and political competition and state formation. Cárdenas [2010, p. 40] in his formal and empirical models finds that "concentration of political and economic power reduces the incentives to invest in state capacity". However, he models inequality between *elites* and *citizens*. We expand on this idea by modeling the period *before* full democratization existed, that is, when the two elites decided to share political power between them. The sectoral origins of income taxation has been approached before too. From

[36] We use the *Montevideo-Oxford Latin American Economic History Data Base* (MOxLAD), specifically the *agriculture value-added* and *manufacturing value-added* variables. The former measures "the output of the sector net of intermediate inputs and includes the cultivation of crops, livestock production, hunting, forestry and fishing". The later "[r]eports the output of the sector net of intermediate inputs". Both of them are expressed in local currency at 1970 constant prices. Finally, "the depreciation of reproducible assets or depletion/degradation of natural resources were not deducted". Details about this dataset are presented in the Data section.

[37] We proxy that using Boix's data on democratization. See Boix et al. [2012].

[38] Author's data. Based on several reports and official information.

a development perspective in Central America, Best [1976, p. 55], argues that "the sectoral origin of income is an important determinant of tax potential and that the large subsistence portions of the agricultural sectors in Central America preclude effective income taxation"[39]. We elaborate this insight by tracing down the *political origins* of income taxation[40]. Finally, Garfias [2015] finds in México the exact opposite: unequal relative distribution of political and economical power causes state formation. The proposed mechanism is that ruling elites, taking advantage of their transitory strengthened position, expropriate weaker elites and send bureaucrats to control local weakened bosses (his proxy for state formation). We find that political monopolies were broken when the excluded industrial sector gained economic leverage that allowed them to bargain better political and economical conditions.

[39] Mares and Queralt [2015] study how income taxation in Europe is associated to between-elites conflicts, particularly between the landed elite and the industrial elite. However, state-capacities are tangentially studied.

[40] Sanchez de la Sierra [2014] studies the relationship between taxation and state formation in Eastern Congo. From a regime type perspective, intra-elite inequality is developed by Acemoglu and Robinson [2009, Ch. 9] and Ansell and Samuels [2014].

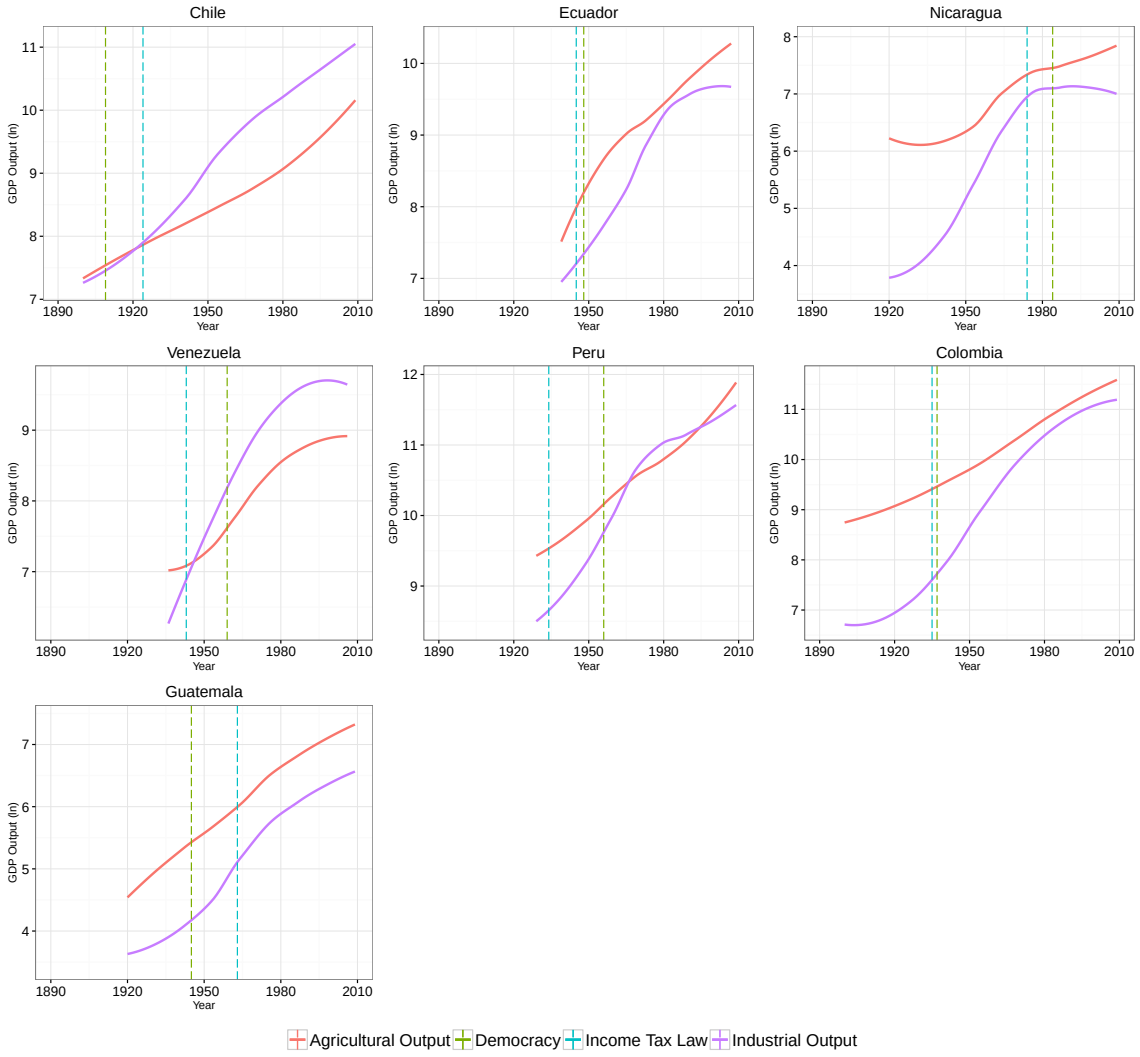

Figure 1: *Industrial and Agricultural Outputs, and Political Contestation*

Strong States: A story of economic contestation and political competition "Strong" states were able (while being "weak" states) to break initial monopolistic conditions. Agricultural political incumbents would govern making use of their monopolistic conditions. Both the states that turned into "strong" and "weak" states shared the same initial conditions. What differentiated strong from weak states was that the former had a strong industrial sector that challenged agricultural elites.

Initial monopolistic conditions were broken in the presence of high levels of inter-elite equality. That is, when the size of the industrial sector caught up with the size of the agricultural sector.

Following the idea of the "stationary bandit"[41], this paper develops two possible strategies for agricultural political incumbents. Each one is best response depending on the rate of industrial growth. The first strategy was to engage in *predatory practices*, expropriating industrial output and enjoying short-term benefits associated to immediate liquidity. During the next term, however, revenue returns to their initial levels as the industrial resources got exhausted. This strategy is best response when the rate of industrial growth is slow. Here, the benefits associated to expropriating industrial output today, even when it is too small, offset the benefits of rather encouraging industrial production and tax it. In other words, the long-term benefits of having a secured, *but excessively small* source of tax revenue for the future *do not* offset the short-term costs associated to enjoy revenue extracted through small taxation doses at a time. The second strategy consists of *institutional investments*, systematizing a mechanism that allowed agricultural incumbents to rob industrial output in small doses at a time through a direct tax system. The system had to incorporate a proportional mechanism to allow agricultural incumbents to capture increasing tax rates if industrial growth rates were also increasing. In other words, an income tax had to be implemented[42]. This strategy is best response when the rate of industrial growth is fast. In cases of rapid rates of industrial growth, the long-term benefits of having a secured source of tax revenue for the future offset the short-term costs associated to enjoy revenue extracted through small taxation doses at a time. In fact, it was in the agricultural incumbents' interest to protect and encourage industrial growth as that would translate into higher revenues for the treasury. As other have explained before, by imposing an income tax system, the treasury appoints itself as the investor's partner who will always share in the investor's gains and losses[43].

Figure 1 shows different sector sizes. Chile had a very contested political economy, i.e. both sectors had approximately the same size. In fact, the industrial sector not only caught up agricultural output but also surpassed it around 1930, which is around the time when income taxation was imposed. The total opposite case is for example, Nicaragua. This country never had a strong industrial sector. Agricultural elites never felt challenged, and consequently income tax was introduced very lately, around the 1980s. More qualitative evidence will be provided in the historical section.

Higher levels of inter-elite equality led to the imposition of income taxation. This new endogenous disturbance triggered a series of institutional investments. The new income tax was not important because of the extra revenue income taxation brought the Treasury but because of the introduction of endogenous institutions. First, the political monopoly was broken. As simply promising keeping income tax rates constant was not credible, industrialists agreed to be taxed on their increasing

[41] Olson [2000].

[42] The idea that political elites generally are better able to impose/raise taxes during economic booms is common in the political economy literature. Campbell and Allen [1994, p. 647] argue that "economic development should be directly related to individual and corporate income tax rates". Also, Besley and Persson [2011, p. 59] argue that "investing in fiscal capacity becomes more attractive [...] when wages or incomes [...] are higher".

[43] Domar and Musgrave [1944, p. 389].

incomes in exchange for political institutions that allowed them to participate in politics. A new competitive oligarchy was born, open for intra-elite competition[44]. Second, institutions of property right protection were needed. Now that both sectors had access to political resources, the two elites were interested in protect each other's property from mutual expropriation. Alternative models suggest a bourgeoisie seeking protection against the expropriative policies of the king. Here, institutions protect the elite from themselves[45]. Given that open political systems are the most effective ones for processing and aggregating interests[46], both sectors could introduce institutions for macroeconomic stabilization and other regulatory institutions. Third, by encouraging optimal taxation rates, strong states were able to produce higher levels of economic growth[47]. Fourth, higher levels of economic growth and accumulation of human capital, produced a larger middle class, which turned found its place in an incipient professional bureaucracy[48].

Besides institutional investments, there were also economic compromises. The most important one was the introduction of higher/newer tariffs designed to protect the industrial sector. A common misconception is that industrial protectionism originated with the ISI. However, as Haber [2005, p. 3-4] explains "governments followed policies designed to subsidize and protect industry in the decades after 1950 precisely because industrialists and industrial workers had been protected since the 1890s". Early industrialists were able to bargain tariffs for income taxation. Lederman [2005, p. 53] shows how a protectionist cycle matches with the period for when income taxation was imposed[49]. The introduction of higher/newer tariffs were key for the subsequent development of the industrial sector. As Haber [2005, p. 15] argues, "virtually none of [the industrial development] would have existed had it not been for tariff protection"[50].

Weak States: A story of uncontested economic elites and political monopoly When the industrial output was not large-enough to compensate for long-term losses associated to future taxation of little revenues, incumbents engaged in predatory strategies. The agricultural political monopoly was not broken, and the endogenous incentives to invest in institutions never existed.

[44] Di John [2006, p. 8] finds that in less developed countries, high tax collection is associated to strong political party systems.

[45] Timmons [2005, p. 531] finds that "[t]he more money a state raises from progressive taxes as a percentage of GDP [...] the better it protects property rights". See also Rodrik [2000, p. 6] for a general overview.

[46] Rodrik [2000, p. 3].

[47] Grossman and Helpman [1994a, p. 35], in what has been called the "protection for sale model", argue that secured property rights shifts the incentives to invest in "[i]nnovation [which in turns] sustains both capital accumulation and growth".

[48] Brown and Hunter [2004, p. 842] finds that "[Latin American] democracies devote a higher percentage of their educational resources to primary education".

[49] In fact, the industrialists *as a sector*, gathered around this issue in a quite organized way, reinforcing their class self-image. As Sokoloff and Zolt [2007, p. 122] argue, the expansion of the "manufacturing production [...] helped to nurture the development of a powerful constituency for higher tariffs".

[50] See also Coatsworth and Williamson [2002, p. 21]. There is some debate on whether protectionism is associated to economic growth. Coatsworth and Williamson [2002, p. 10] argue that "protection was associated with faster growth in the European core and their English-speaking offshoots [...] but it was *not* associated with fast growth in [...] Latin American periphery" (Emphasis in the original).

These countries then were trapped in underdevelopment sub-optimal equilibriums. First, institutions of property right protection were weak, and they did not necessarily represent the agents' incentives, generating unstable equilibria, such as political instability. Weak fiscal policies did not generate incentives to invest in the know-how regarding taxing technologies capable to monitor individuals incomes nor in skilled bureaucracies.

ADD MORE ON WEAK STATES

IV. Unpacking the Mechanisms: Illustrative Case, Chile 1850-1930

From an economic standpoint, before and during the colonial period, agriculture was the most important sector. Besides supplying European markets with raw materials, Latin American economies supplied "a variety of tropical foods and [other] goods [such as] sugar, coffee, and tobacco [...] The demand for such items was stimulated by the rising consumption of the new and prosperous European bourgeoisie"[51].

Politically, agriculturalists monopolized the political realm. The historiography has contradictory references, either in favor or against this antagonistic notion. Some say that they they were obvious antagonists. Some have argued, for example, that landed elites conformed a very strong monopoly[52]. Others have claimed that any notion of antagonism is a false interpretation[53]. The main argument against this vision is that there was a very blurry division between these "two" classes[54]. For example, landowners were also invested in industry[55]. However, there are some stylized facts that strongly suggest that *in general*, relative to other economic activities, agricultural elites were *primus inter pares*. First, some historiographic evidence suggests that the agricultural sector did monopolize politics. Zeitlin [1984, p. 13] argues that "landowners controlled both the vote and the labor power of the agrarian tenants (*inquilinos*) and dependent peasants (*minifundistas*), and this was the *sine qua non* of their continuing political hegemony". In Congress, and the presidency itself, the landowners were the single most important group[56]. Consequently, industrialist were heavily under-represented in parliament. As Baland and Robinson [2008, p. 1748] argue, "[c]ongressional representation was heavily weighted in favor of rural districts where the peasantry historically formed a pliable and controllable mass base for conservative and reactionary groups". Second, and as a consequence, fiscal pressures for agricultural taxes were minimal as opposed to mining taxes (the first alternative to

[51] Marichal [1989, p. 74].

[52] McBride [1936, p. 15] argues that "Chile's people live on the soil. Her life is agricultural to the core. *Her government has always been of farm owners. Her Congress is made up chiefly of rich landlords.* Social life is dominated by families whose proudest possession is the ancestral estate". Emphasis is mine.

[53] See for example Mamalakis [1976, p. 125].

[54] Bauer [2008, p. 30, 44, 94, 108].

[55] Coatsworth and Williamson [2002, p. 23] argues that "[t]he only landowners that mattered in 19th century Latin America politics were those for whom land represented but one asset in a much broader portfolio". In the same line, Bauer [2008, 180] argues that "[m]iners and merchants bought haciendas but landowners in turn invested in banks, insurance companies, commercial firms and the incipient industrial sector".

[56] Bauer [2008, p. 45].

agricultural production). As Best [1976, p. 56] explains, "when all central government taxes are considered, agriculture is still substantially undertaxed relative to the other sectors"[57]. Taxation was biased against non-agricultural production[58]. In fact, "[i]n those areas where the government did interfere in the countryside, the effect was to strengthen the position of the landowning class"[59]. The few public infrastructure that existed, was in favor of agriculture too. The state would either invest huge amounts of money or borrow resources to build infrastructure capable to mobilize agricultural goods, starting with the gold rush in both California and Australia[60]. For instance, in Chile, a foreign investor "was contracted to build a second state-sponsored railroad that would connect Santiago with the south-central agricultural districts"[61]. This was not an isolated issue, but a clear pattern. Presidents also engaged in the same deliberated practices. For example, "the Montt regime did invest in the construction of Chile's railways but only in the Central Valley and south-central zones [b]ut there was no public investment [...] in railroads built in the Norte Chico mining provinces, which in fact provided most of the state's tax revenues"[62].

The origins of the the industrial sector are much older than the ISI policies of the 1950s. "The development of large-scale, mechanized (and even "heavy") industry can be dated from the 1890s in the region's larger economies"[63]. For almost 400 years, mining was the most important activity not related to agriculture. Although it was very important during the Colonial period, not only "Latin American's consumption of industrial metals continued to be very small until toward the end of the nineteenth century", but also it was very rudimentary showing little or no technological refinement[64]. Most mineral-related industry (if not all) was foreign owned, except for Chile[65]. Mining elites made their fortunes during the 1840s-1850s during the mining boom. After the boom, the mining elite shifted to the first "true" industrial work which actually was born under agricultural auspices, i.e. the cotton mills[66]. The first "industries" were called *obrajes*[67]. And although servile and slave labor were used at the end of the colonial period, all labor was free and waged starting with the independence period. "Large-scale *obrajes* existed alongside smaller units of production - modest

[57] Bauer [2008, p. 81] provides a very plausible practical explanation for why the agricultural sector was "structurally" protected against taxation. As he explains, "[t]he availability of an easily accountable source of public revenue - bags of nitrate or bars of cooper - meant that any need for the Chilean government to intrude into the affairs of landowners was reduced [...] the state kept its political hands off the countryside until the overwhelming urban demands for more food and political support in the 1960s".

[58] There was an agricultural income tax. However, it was weak and abolished after the civil war of 1981.

[59] Bauer [2008, p. 118].

[60] Rippy [1971], Marichal [1989], Zeitlin [1984], Bauer [2008].

[61] Rippy [1971, p. 85].

[62] Zeitlin [1984, p. 41].

[63] Haber [2005, p. 2].

[64] Rippy [1971, p. 230].

[65] Stephens et al. [1992, p. 165, 176, footnote 5, 324].

[66] See Rippy [1971, p. 231] and Bethell [1986, p. 271]. As Bethell [1986, p. 271] argues, "[t]he first power looms were brought [in Peru, Ecuador, and Venezuela] in the 1840s, 1850s; but in all three they were a failure, some of the early mills in Ecuador being destroyed by an earthquake. It was not until after 1890 that textile industries of these nations began to operate with reasonable success. Guatemala's first cotton mill was established in 1882, and between that date and 1910 a few mills appeared in Chile, Argentina, Uruguay, and Colombia" (Rippy [1971, p. 232]).

[67] I.e., Proto-industrial redoubts.

workshops and prosperous artisan-dominated enterprises - in virtually all urban centres"[68]. Beyond cotton and the textile industries, early industrialists also processed other agricultural goods[69]. Other industries for domestic consumptions developed around 1900[70]. The industrial sector was boosted by international conditions too. From an international trade perspective, Haber [2005, p. 5] argues that given a change in the metallic standard, "exchange rate depreciation resulted in the expansion of the tradables sectors at the expense of non-tradables". Lower transportation costs and higher demands for processed grains in Europe also played a big role boosting early industrial production. As Bauer [2008, p. 68] argues, "[b]ad harvests in Europe and disruptions caused by wars were other factors that enabled Chilean grain to be sold on European Markets". Industrial work started very small[71], progressing "from the shop to the factory during the latter half of the nineteenth century"[72]. In Chile, almost all non-agricultural produce were personified by an incipient, yet strong group of individuals[73]. From the process of going from mineowners to proto-industrialists, they developed a strong sense of social *class*. During the 1920s, industrialists started to "form trade associations to engage in lobbying and propaganda as more coherent interest groups"[74], such as the *Sociedad de Fomento Fabril* (SOFOFA) founded in 1883 to represent the interests of the the industrial sector against the interests of the agricultural sector, represented by the *Sociedad Nacional de Agricultura* (SNA), founded in 1838.

Inter-elite economic equality paired with inter-elite political inequality propitiated an unstable equilibrium. First, "public revenues came almost exclusively from taxes on mining and its exports"[75]. Second, the political representation was heavily biased against the non-agricultural sector, including industrialists and miners. Third, public expenditure and fiscal policies were heavily biased in favor of the agricultural sector. Under these circumstances, agricultural elites did not have a political counterpart. Agricultural incumbents, for example, engaged in several predatory practices, the first type being plain expropriation. As some historians have argued, governments before the 1920s engaged in "nationalization by means of naturalization, government intervention, and government participation"[76]. During the oligarchic republics, there was in fact the first "*wave* of expropriations"[77].

[68] Bethell [1986, p. 271]. Emphasis in original.

[69] For instance, they processed animal grease and tallow (for soap and candles), dried and cured meats, flour, bread, beer, wines, spirits - most of these were for domestic consumption (Bethell [1986, p. 272]). Other food industries, such as the production of chocolate, candies, biscuits, vegetable oils were also very important.

[70] Some examples are tobacco, pottery, felt hats, matches, footwear, specially in Argentina, Brazil, Chile, Uruguay and Perú (Rippy [1971, p. 235]).

[71] Marichal [1989, p. 68].

[72] Rippy [1971, p. 235].

[73] As historian Francisco Encina described it, "[i]t was precisely this segment of the dominant class that consummately personified the development of Chilean capitalism (mineowner and banker, railroad magnate and manufacturer, shipper and trader, *hacendado* and miller were most frequently not only close associates, or drawn from the same family, but they were same individuals: Ossa, Edwards, Vicuña Mackenna, Matta, Goyenechea, Cousiño, Urmeneta, Gallo, Subercasaux)".In Zeitlin [1984, p. 30]. Emphasis in the original.

[74] Weaver [1980, p. 107].

[75] Zeitlin [1984, p. 38].

[76] Rippy [1971, p. 238].

[77] See Chang et al. [2010].

Chile, Perú, Uruguay, among others, went to a clear process of nationalization of the non-agricultural sector around the 1920s[78]. In Chile, these two sectors had enough antagonistic preferences that they confronted each other in two bloody civil wars[79].

From Dan: how did they move from civil war/ adversary status to a mutual accomodation? EXPLAIN

Include in this paragraph below specific quotes from legislative discussion

Political and economic concessions were in the best interests of both sectors. On the one hand, Chilean industrial output offered promising enough revenues if a tax system were imposed. However, the political representation issue would have had to be solved, along other problems too, such as biased public spending policies. Chilean industrialists accepted taxation in exchange for institutions that guaranteed better political accesses, the implementation of independent and professional bureaucracies and institutions of property rights protection. "There was visible bargaining: [the non-agricultural sector] (reluctantly) accepted taxation, while demanding state services and expecting to influence how tax revenues were spent"[80]. In this bargaining process, the industrial sector heavily campaigned for policies favorable to them, particularly, economic protection. For example, the SOFOFA, as an organized lobbying group, pursued an agenda in favor of protective industrial tariffs[81]. Consistent with the economic literature on lobby[82], "the protection pattern differs between politically organized and non-organized sectors"[83]. In fact, given this pressure from the SOFOFA, "by the early 1920s Chile's manufacturers were no longer just demanding (and obtaining) protective tariffs, they actively lobbied for government subsidies to establish a range of new industries"[84]. An intervening variable in this bargaining process was a fiscal deficit originated in a deceleration of trade taxes. Agricultural exports in Chile, such as wheat production had a boom between 1865-1875 until 1880[85]. However, "[t]he importance of trade taxes as sources of public revenues began a steady decline in 1918, which lasted until 1925. This downfall is explained by the fall of export revenues caused by the collapse in the prices of Chile's major exports during the war"[86]. **Within this unstable equilibrium propitiated by inter-elite economic equality paired with inter-elite political inequality, the fiscal pressures, plus promising industrial growth, culminated in the imposition of income taxation in 1924**. After income taxes were imposed, "the revenue motivation for imposing trade taxes declined"[87]. These bargains had the expected outcomes on

[78] Chua [2010].
[79] Zeitlin [1984, p. 23] argues that the civil wars confronted a "large landed property [elite against a] productive capital [elite]".
[80] Carmenza Gallo, in Brautigam et al. [2008, p. 165]. She refers specifically to nitrate producers. As I have explained above, miners and industrialists shared the same historical origins.
[81] Lederman [2005, p. 54] and Haber [2005, p. 18].
[82] Grossman and Helpman [1994b].
[83] Goldberg and Maggi [1999, p. 1136].
[84] Haber [2005, p. 18].
[85] Bauer [2008, p. 68-69-70]. See also Lederman [2005, p. 55].
[86] Lederman [2005, p. 54-55].
[87] Lederman [2005, p. 55].

the economic and political spheres. First, "the country was able to impose a substantial tax [...] and pay the salaries of government and military employees"[88]. Eventually, as the relative size of the industrial sector increased, they were able to gain ground in politics, managing to impose other important institutions such as the secret ballot. "The introduction of the secret ballot had an immediate impact on the balance of political power in Chile [as] landowners could no longer effectively control the votes of rural labor"[89], largely benefiting urban interests.

V. Econometric Analysis

This paper presents a macro-structural theory of the origins of fiscal capacities. The model which we have elaborated here proposes that inter-elite economic equality posits challenges to agricultural political incumbents. From both a theoretical and historical perspectives, income taxation plays a fundamental role in the development of other subsequent state capacities. Budget is *the* primary state capacity that allows the introduction of other state capacities. We have also argued about inter-sectoral bargains, and how income taxation imposed on a promising strong industrial sector was exchanged for protectionists policies and political representation.

This section empirically tests these relationships. Following Aidt and Jensen [2009], we model the conditional probability that a country which has not yet adopted the income tax adopts it in a given year as a function of the relative sizes of the agricultural and industrial sectors, plus a control variable. We compute these probabilities using a series of functional forms. First we assume a Cox Proportional Hazard parametrization to computes the hazard rate, in this case, of a particular country-year to "fail" (i.e., implement the income tax law) conditional on baseline levels of covariates[90]. And such, countries drop out of the sample when they adopts the income tax. Second, we assume a generalized estimating equation (GEE) functional form which are usually used to analyze longitudinal and other correlated data especially when they are binary[91]. Similarly, this model estimates the conditional probability of implementing the income tax conditional on a set of covariates. Finally, we assume a conditional logit form ("fixed effects" model) to see country-specific effects. In order to correct time dependency, we included different time-transformed variables, in the form of a lagged dependent variable to accounts for partial adjustment of behavior over time[92] and also using time-transform functions. Panel-corrected standard errors were also included (i.e., "robust variance"). Finally, in order to test that income taxation initiated a path of institutional investments, starting with the incorporation of a democratic system, open to inter-elite competition, we use a generalization of the Cox models, and estimated an Andersen-Gill model[93]. Using a slightly different

[88] Bauer [2008, p. 80]. He refers particularly to "nitrate exports", another non-agricultural source of growth.
[89] Baland and Robinson [2008, p. 1749].
[90] Box-Steffensmeier and Jones [2004].
[91] Hanley [2003].
[92] Wawro [2002].
[93] Therneau and Grambsch [2000, 185-].

data structure, we estimate the jointly occurrence of income taxation *and* democracy, within a multiple failure-time framework. All these models strongly suggest that relative higher levels of industrial output are strongly correlated to the income tax law (individually), but also to the jointly realization of the income tax and democracy.

I. Data and Sample

Using the MOxLAD, we estimate all models. "These data build on the studies and statistical abstracts of the Economic Commission for Latin America, but also rely on Mitchell's International Historical Statistics, International Monetary Fund's International Financial Statistics, the World Bank's World Development Indicators and a variety of national sources". Our sample is given by all Pacific coast countries for which we have available data, that is, Chile, Ecuador, Nicaragua, Venezuela, Peru, Colombia and Guatemala (see Figure 1). The time span goes from 1900 to (potentially) 2010. Observations are left-censored before the timespan, and right-censored after the timespan. However, as stated before, country-year observations dropout of the sample once they impose the tax income for the Cox models, and when both democracy and the income tax happen (for the Andersen-Gill model).

II. Results

	Cox-PH	Cox-PH	Cox-PH: Lagged	Conditional Logit	Cox-PH: Andersen-Gill	Logit GEE
Manufacture Output$_{tt}$	0.28^{***}					
	(0.07)					
Agricultural Output$_{tt}$	-0.25^{***}					
	(0.07)					
Manufacture Output (ln)		31.64^{***}		0.92^{***}	5.06^{*}	2.73^{**}
		(3.79)		(0.16)	(2.33)	(0.97)
Agricultural Output (ln)		-24.26^{***}		-0.43	-9.91^{*}	-2.80^{*}
		(3.31)		(0.23)	(4.30)	(1.24)
Total Population (ln)		61.98^{***}	93.50^{***}			6.11^{*}
		(7.32)	(11.41)			(2.56)
Manufacture Output$_{t-1}$ (ln)			47.50^{***}			
			(5.84)			
Agricultural Output$_{t-1}$ (ln)			-35.99^{***}			
			(4.70)			
Urban Population (ln)					-0.97	
					(0.80)	
(intercept)						-48.54^{**}
						(17.91)
AIC	31.25	11.54	10.87	3248.15	19.97	
R^2	0.11	0.21	0.22	0.32	0.09	
Max. R^2	0.24	0.24	0.24	1.00	0.32	
Num. events	7	7	7	447	4	
Num. obs.	181	181	174	621	48	621
Missings	0	0	0	0	186	
PH test	0.00	0.99	1.00		1.00	
Num. clust.						7

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$. Robust Standard Errors in All Models

Table 1: *Structural Origins of Income Taxation*

Table 1 shows six models[94]. The first three are Cox models, under different time-transformations. The fourth model is a conditional logistic regression ("fixed effects" model). The fifth model is an Andersen-Gill model which predicts the jointly realization of both the income tax and democratization. Finally, the sixth model shows a GEE logistic regression model. All these results strongly suggest that higher levels of industrial output are associated to the imposition of the income tax[95]. In substantive terms, as the size of the politically excluded sector catches up with the size of the agricultural incumbents, the political monopoly of the latter is broken, giving way to a series of political and economic bargains. Here we have theorized (and demonstrated in our historical case study) that in exchange of the income tax, industrial tariffs were implemented along with more open conditions for inter-elite political competition. Some times, we control for different measures of population density. Population has been associated to the probability in which elites expanded the franchise. Denser populations also expand the tax base. The scarcity of people meant that local and state governments were extremely concerned with attracting migrants. Because population inflows would lower the cost of labor, and boost land values and tax revenues, these societies were induced to adopt institutions attractive to immigrants. Among these, were cheap land and political participation[96].

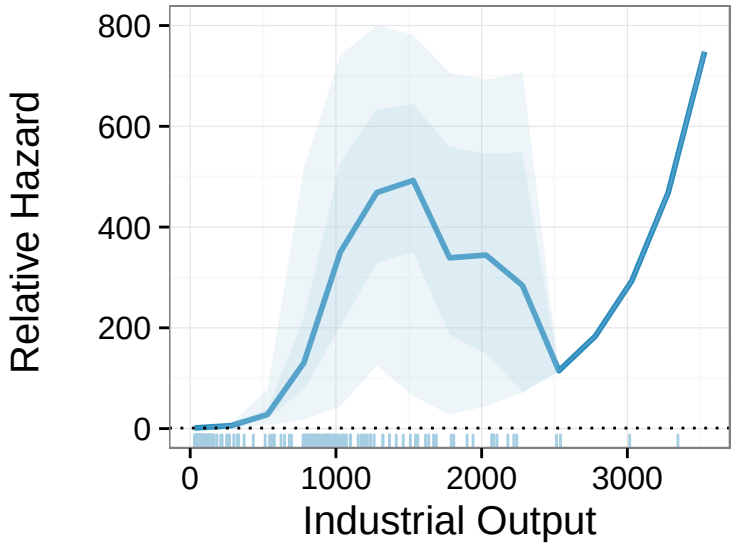

Figure 2: *Relative Hazards of Implementing The Income Tax: Industrial Output*

[94] All tables were produced using the `texreg` package (Leifeld [2013]). All Cox models were computed using `survival` R package (Therneau [2015]). The GEE logistic regression was computed using the `geepack` package (CITE). This paper was written in LaTeX using the dynamic report R package `knitr` (Xie [2016]), for fully replicable research.

[95] "Because the coefficients are parameterized in terms of the hazard rate, a positive coefficient indicates that the hazard is increasing as a function of the covariate (and hence, the survival time is decreasing) and a negative sign indicates the hazard is decreasing as a function of the covariate" (Box-Steffensmeier and Jones [2004, p. 50]).

[96] Engerman and Sokoloff [2005, p. 892-893].

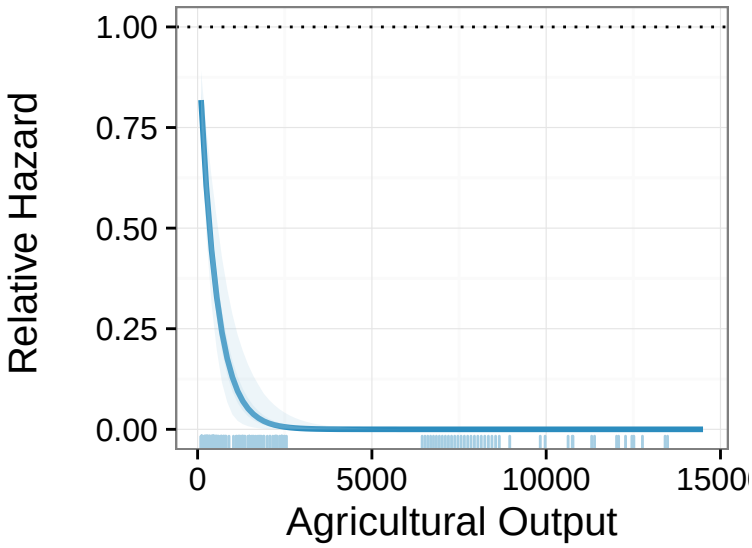

Figure 3: *Relative Hazards of Implementing The Income Tax: Agricultural Output*

Following Gandrud [2015] and King et al. [2000], Figure 2 and Figure 3 show 2,000 simulations from a variant of the main model (model 2 in Table 1, from where both sectors are included in the same equation) and show their individual predictions in two separate plots[97]. These plots strongly suggest that higher industrial output substantively boosted the introduction of the income tax, while higher agricultural output systematically the diminished the probability of the introduction of the income tax. Altogether these results strongly argue in favor of the theory presented here, namely, income taxation was possible once the status quo which was favorable to the agricultural sector was broken in order to give way to a path of institutional investments.

VI. Discussion

PENDING

[97] The `simPH` package does not handle natural logs well. Hence, we estimated an alternative model that considers the same sample and specification than the main model (model 2), but without taking the natural log on the variables considered. In the appendix section, Table 2 shows the results. The numbers differ from the main results in Table 1 because the scales are different, local currencies vs. the natural log of local currencies.

VII. Appendix

I. Additional Graphical Representations

Figure 4 shows two simple plots of the conditional hazard rates. These two pieces of information strongly suggest conditional on both covariates, industrial output increases the probability of imposing an income tax law.

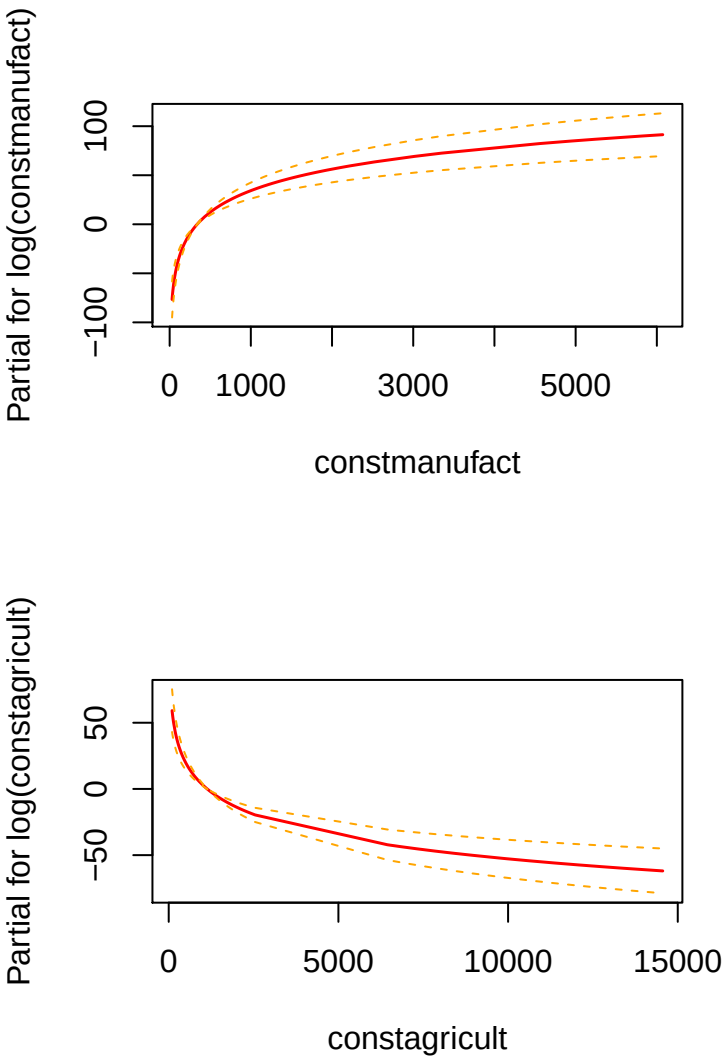

Figure 4: *Graphical Plots of the Estimates*

II. Testing Proportionality Assumption

Cox *proportional* rest on the assumption that hazard rates are proportional to time dynamics[98]. Non-proportional hazard model are becoming an increasing problem across all subfields in political science[99]. In this section, we test whether this assumption holds. Non-significant p-values indicate that the proportionality assumption holds. Also, Figure 5 shows how the spline fitted lines (i.e., the regression coefficients of the main model) are almost constant across time, confirming that the hazard rates are, in fact, *proportional*.

```
##                         rho    chisq     p
## log(constmanufact)  0.0213 0.000706 0.979
## log(constagricult) -0.0409 0.003579 0.952
## log(totpop)         0.0987 0.021272 0.884
## GLOBAL                  NA 0.347609 0.951
```

[98] Box-Steffensmeier and Jones [2004].
[99] Licht [2011].

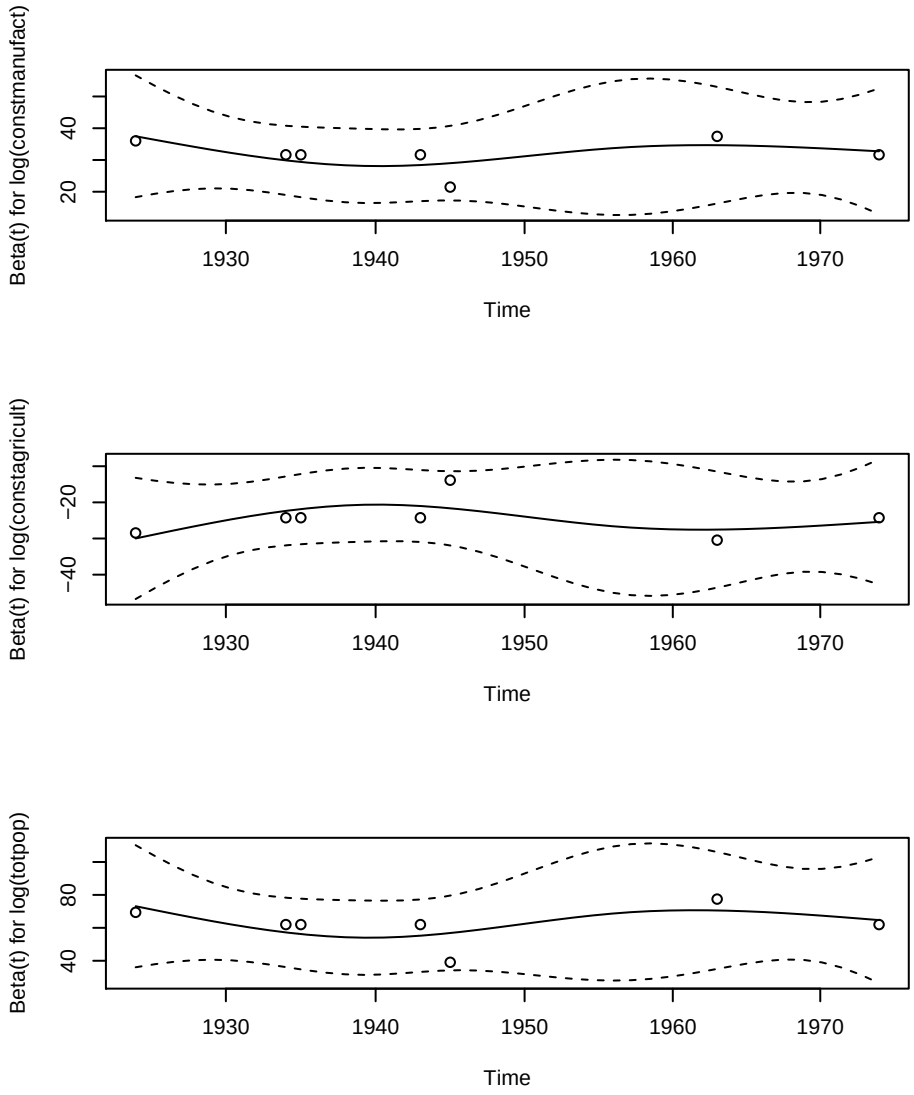

Figure 5: *Graphical Plots of the Estimates against Time*

III. Model used for Simulation Plot

Table 2 shows the estimates used to compute the 2,000 simulations in the Figure 2 and Figure 3 figures.

	Cox-PH
Manufacture Output	0.01^{***}
	(0.00)
Agricultural Output	-0.00^{***}
	(0.00)
Total Population	0.00^{***}
	(0.00)
AIC	17.99
R^2	0.18
Max. R^2	0.24
Num. events	7
Num. obs.	181
Missings	0
PH test	0.49

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$. Robust Standard Errors in All Models

Table 2: *Structural Origins of Income Taxation: Model Used to Compute Simulations*

References

Daron Acemoglu and James Robinson. *Economic Origins of Dictatorship and Democracy*. Cambridge University Press, 2009.

Daron Acemoglu, Simon Johnson, and James Robinson. Reversal Fortune: Geography and Institutions in the Making of the Modern World Income Distribution. *The Quarterly Journal of Economics*, 117(4):1231–1294, 2002.

Toke Aidt and Peter Jensen. The Taxman Tools Up: An Event History Study of the Introduction of the Personal Income Tax. *Journal of Public Economics*, 93(1-2):160–175, 2009. ISSN 00472727. doi: 10.1016/j.jpubeco.2008.07.006. URL http://www.sciencedirect.com/science/article/pii/S0047272708001229.

Edward Ames and Richard Rapp. The Birth and Death of Taxes: A Hypothesis. *The Journal of Economic History*, 37(1):161–178, 1977.

Ben Ansell and David Samuels. *Inequality and Democratization: An Elite-Competition Approach*. Cambridge University Press, 2014.

Luz Marina Arias. Building Fiscal Capacity in Colonial Mexico: From Fragmentation to Centralization. *The Journal of Economic History*, 73(3):662–693, 2013. ISSN 00220507. doi: 10.1017/S0022050713000570.

Jean Marie Baland and James Robinson. Land and Power: Theory and Evidence from Chile. *American Economic Review*, 98(5):1737–1765, 2008. ISSN 00028282. doi: 10.1257/aer.98.5.1737.

Arnold Bauer. *Chilean Rural Society: From the Spanish Conquest to 1930*. Cambridge University Press, 2008.

Timothy Besley and Torsten Persson. The Origins of State Capacity: Property Rights, Taxation, and Politics. *American Economic Review*, 99(4):1218–1244, aug 2009. ISSN 0002-8282. doi: 10.1257/aer.99.4.1218. URL http://pubs.aeaweb.org/doi/abs/10.1257/aer.99.4.1218.

Timothy Besley and Torsten Persson. State Capacity, Conflict, and Development. *Econometrica*, 78(1):1–34, 2010. ISSN 0012-9682. doi: 10.3982/ECTA8073. URL http://www.wiley.com/bw/journal.asp?ref=0012-9682http://doi.wiley.com/10.3982/ECTA8073.

Timothy Besley and Torsten Persson. *Pillars of Prosperity: The Political Economics of Development Clusters*. Princeton University Press, 2011.

Timothy Besley and Torsten Persson. Why Do Developing Countries Tax So Little? *Journal of Economic Perspectives*, 28(4):99–120, 2014.

Michael Best. Political Power and Tax Revenues in Central America. *Journal of Development Economics*, 3(1):49–82, 1976. ISSN 03043878. doi: 10.1016/0304-3878(76)90040-7.

Leslie Bethell. *The Cambridge History of Latin America, Volume 4: c. 1870-1930*, volume IV. Cambridge University Press, 1986. ISBN 978-0521232258.

Carles Boix, Michael Miller, and Sebastian Rosato. A Complete Data Set of Political Regimes, 1800-2007. *Comparative Political Studies*, 46(12):1523–1554, nov 2012. ISSN 0010-4140. doi: 10.1177/0010414012463905. URL http://cps.sagepub.com/cgi/doi/10.1177/0010414012463905.

Deborah Boucoyannis. Power, Taxation, and Representation: The Limits of Bargaining and the Endogeneity of Institutions to State Capacity to Tax, Especially the Most Powerful. 2015.

Janet Box-Steffensmeier and Bradford Jones. *Event History Modeling A Guide for Social Scientists*. Cambridge University Press, Cambridge, 2004. ISBN 9780521546737.

Deborah Brautigam, Odd-Helge Fjeldstad, and Mick Moore. *Taxation and State-Building in Developing Countries: Capacity and Consent*. Cambridge University Press, 2008. ISBN 9781139469258. URL http://books.google.be/books?id=yKqioeqwsTkC.

David Brown and Wendy Hunter. Democracy and Human Capital Formation: Education Spending in Latin America, 1980 to 1997. *Comparative Political Studies*, 37(7):842–864, sep 2004. ISSN 0010-4140. doi: 10.1177/0010414004266870. URL http://cps.sagepub.com/cgi/doi/10.1177/0010414004266870.

John Campbell. The State and Fiscal Sociology. *Annual Review of Sociology*, 19(1):163–185, aug 1993. ISSN 0360-0572. doi: 10.1146/annurev.so.19.080193.001115. URL http://www.annualreviews.org/doi/abs/10.1146/annurev.so.19.080193.001115.

John Campbell and Michael Allen. The Political Economy of Revenue Extraction in the Modern State: A Time-Series Analysis of U.S. Income Taxes, 1916-1986. *Social Forces*, 72(3):643, mar 1994. ISSN 00377732. doi: 10.2307/2579775. URL http://links.jstor.org/sici?sici=0037-7732(199403)72:3{\T1\textless}643:TPEORE{\T1\textgreater}2.0.CO;2-9http://www.jstor.org/stable/2579775?origin=crossref.

Mauricio Cárdenas. State Capacity in Latin America. *Economía*, 10(2):1–45, 2010. ISSN 1533-6239. doi: 10.1353/eco.2010.0003. URL http://muse.jhu.edu/content/crossref/journals/economia/v010/10.2.cardenas.html.

Miguel Angel Centeno. *Blood and Debt: War and the Nation-State in Latin America*. Penn State University Press, 2002.

Roberto Chang, Constantino Hevia, and Norman Loayza. Privatization and Nationalization Cycles. 2010. URL http://www.nber.org/papers/w16126.

Amy Chua. The Privatization-Nationalization Cycle: The Link between markets and Ethinicity in Developing Countries. *Columbia Law Review*, 95(2):223–303, 2010. ISSN 00101958. doi: 10.2307/1123231.

John Coatsworth and Jeffrey Williamson. The Roots of Latin American Protectionism: Looking Before the Great Depression. Technical report, National Bureau of Economic Research, Cambridge, MA, jun 2002. URL http://www.nber.org/papers/w8999.pdf.

Jonathan Di John. The Political Economy of Taxation and Tax Reform in Developing Countries. 2006.

Evsey Domar and Richard Musgrave. Proportional Income Taxation and Risk-Taking. *The Quarterly Journal of Economics*, 58(3):388–422, 1944. URL http://www.jstor.org/stable/1882847.

Stanley Engerman and Kenneth Sokoloff. The Evolution of Suffrage Institutions in the New World. *The Journal of Economic History*, 65(04):891, dec 2005. ISSN 0022-0507. doi: 10.1017/S0022050705000343. URL http://journals.cambridge.org/production/action/cjoGetFulltext?fulltextid=354329http://www.journals.cambridge.org/abstract{_}S0022050705000343.

Tasha Fairfield. Going Where the Money Is: Strategies for Taxing Economic Elites in Unequal Democracies. *World Development*, 47:42–57, jul 2013. ISSN 0305750X. doi: 10.1016/j.worlddev.2013.02.011. URL http://linkinghub.elsevier.com/retrieve/pii/S0305750X13000648.

Francis Fukuyama. *State-Building: Governance and World Order in the 21st Century*. Cornell University Press, 2004.

Francis Fukuyama. What Is Governance? *Governance*, 26(3):347–368, jul 2013. ISSN 09521895. doi: 10.1111/gove.12035. URL http://doi.wiley.com/10.1111/gove.12035.

Christopher Gandrud. simPH: An R Package for Illustrating Estimates from Cox Proportional Hazard Models Including. *Journal of Statistical Software*, 65(3):1–20, 2015. ISSN 1548-7660. doi: 10.2139/ssrn.2318977. URL http://www.jstatsoft.org/v65/i03/.

Francisco Garfias. Elite Competition and State Capacity Development: Theory and Evidence from Post-Revolutionary Mexico. 2015.

Pinelopi Goldberg and Giovanni Maggi. Protection for Sale: An Empirical Investigation. *American Economic Review*, 89(5):1135–1155, dec 1999. ISSN 0002-8282. doi: 10.1257/aer.89.5.1135. URL http://pubs.aeaweb.org/doi/abs/10.1257/aer.89.5.1135.

Gene Grossman and Elhanan Helpman. Endogenous Innovation in the Theory of Growth. *Journal of Economic Perspectives*, 8(1):23–44, feb 1994a. ISSN 0895-3309. doi: 10.1257/jep.8.1.23. URL http://pubs.aeaweb.org/doi/abs/10.1257/jep.8.1.23.

Gene Grossman and Elhanan Helpman. Protection For Sale. *The American Economic Review*, 84(4):833–850, 1994b. URL http://links.jstor.org/sici?sici=0002-8282{%}28199409{%}2984{%}3A4{%}3C833{%}3APFS{%}3E2.0.CO{%}3B2-Y.

Stephen Haber. Development Strategy or Endogenous Process? The Industrialization of Latin America. 2005.

James Hanley. Statistical Analysis of Correlated Data Using Generalized Estimating Equations: An Orientation. *American Journal of Epidemiology*, 157(4):364–375, feb 2003. ISSN 00029262. doi: 10.1093/aje/kwf215. URL http://aje.oupjournals.org/cgi/doi/10.1093/aje/kwf215.

Jonathan Hanson and Rachel Sigman. Leviathan's Latent Dimensions: Measuring State Capacity for Comparative Political Research. *Manuscript, Maxwell School of Citizenship and Public Affairs, Syracuse University*, pages 1–41, 2013. URL http://faculty.maxwell.syr.edu/johanson/papers/hanson{_}sigman13.pdf.

Gary King, Michael Tomz, and Jason Wittenberg. Making the Most of Statistical Analyses: Improving Interpretation and Presentation. *American Journal of Political Science*, 44(2):341–355, apr 2000. ISSN 00925853. doi: 10.2307/2669316. URL http://www.jstor.org/stable/2669316?origin=crossref.

Marcus Kurtz. Where Does a "Strong" State Come from? Resources, War, or Society in South American State Building. In *Annual Meeting of the American Political Science Association*, pages 1–52, Philadelphia, PA, 2006.

Marcus Kurtz. *Latin American State Building in Comparative Perspective: Social Foundations of Institutional Order*. Cambridge University Press, 2013.

Matthew Lange and Hrag Balian. Containing Conflict or Instigating Unrest? A Test of the Effects of State Infrastructural Power on Civil Violence. *Studies in Comparative International Development*, 43(3-4):314–333, dec 2008. ISSN 0039-3606. doi: 10.1007/s12116-008-9025-9. URL http://link.springer.com/10.1007/s12116-008-9025-9.

Daniel Lederman. *The Political Economy of Protection: Theory and the Chilean Experience*. Stanford University Press, Stanford, CA, 2005. ISBN 9780804749176.

Melissa Lee and Nan Zhang. The Art of Counting the Governed: Census Accuracy, Civil War, and State Presence. 2013. URL http://cddrl.stanford.edu/.

Philip Leifeld. texreg: Conversion of statistical model output in r to latex and html tables. *Journal of Statistical Software*, 55(8):1–24, 2013. URL http://www.jstatsoft.org/v55/i08/.

Margaret Levi. *Of Rule and Revenue*. University of California Press, 1989.

Arthur Lewis. *The Theory of Economic Growth*. Harper & Row, 1965.

Amanda Licht. Change Comes with Time: Substantive Interpretation of Nonproportional Hazards in Event History Analysis. *Political Analysis*, 19(2):227–243, apr 2011. ISSN 1047-1987. doi: 10.1093/pan/mpq039. URL http://pan.oxfordjournals.org/cgi/doi/10.1093/pan/mpq039.

Fernando López-Alves. *State Formation and Democracy in Latin America, 1810-1900*. Duke University Press Books, 2000.

James Mahon. Causes of Tax Reform in Latin America, 1977-95. *Latin American Research Review*, 39(1):3–30, 2004. ISSN 1542-4278. doi: 10.1353/lar.2004.0014. URL http://muse.jhu.edu/content/crossref/journals/latin{_}american{_}research{_}review/v039/39.1mahon.html.

James Mahoney. *Colonialism and Postcolonial Development: Spanish America in Comparative Perspective*. Cambridge University Press, 2010.

Markos Mamalakis. *Growth and Structure of the Chilean Economy: From Independence to Allende*. Yale University Press, 1976.

Michael Mann. The Autonomous Power of the State: Its Origins, Mechanisms and Results. *European Journal of Sociology*, 25(02):185, 1984. ISSN 0003-9756. doi: 10.1017/S0003975600004239.

Michael Mann. Infrastructural Power Revisited. *Studies in Comparative International Development*, 43(3-4):355–365, dec 2008. ISSN 0039-3606. doi: 10.1007/s12116-008-9027-7. URL http://link.springer.com/10.1007/s12116-008-9027-7.

Isabela Mares and Didac Queralt. The Non-Democratic Origins of Income Taxation. *Comparative Political Studies*, jul 2015. ISSN 0010-4140. doi: 10.1177/0010414015592646. URL http://cps.sagepub.com/cgi/doi/10.1177/0010414015592646.

Carlos Marichal. *A Century of Debt Crises in Latin America: From Independence to the Great Depression, 1820-1930*. Princeton University Press, 1989.

George McCutchen McBride. *Chile: Land and Society*. Octagon Books, 1936.

Joel Migdal. *Strong Societies and Weak States*. Princeton University Press, 1988.

Mick Moore. Taxation and the Political Agenda, North and South. *Forum for Development Studies*, 1:7–32, 2004a. ISSN 0803-9410. doi: 10.1080/08039410.2004.9666262.

Mick Moore. Revenues, State Formation, and The Quality of Governance in Developing Countries. *International Political Science Review*, 25(3):297–319, 2004b. ISSN 01925121. doi: 10.1177/0192512104043018.

Richard Musgrave. Schumpeter's Crisis of The Tax State: An Essay in Fiscal Sociology. *Journal of Evolutionary Economics*, 2(2):89–113, jun 1992. ISSN 0936-9937. doi: 10.1007/BF01193535. URL http://link.springer.com/10.1007/BF01193535.

Mancur Olson. *Power And Prosperity: Outgrowing Communist And Capitalist Dictatorships*. Basic Books, 2000.

James Rippy. *Latin America and the Industrial Age*. Greenwood Press, 1971.

Dani Rodrik. Institutions for High-Quality Growth: What They Are and How to Acquire Them. *Studies In Comparative International Development*, 35(3):3–31, 2000.

Michael Ross. Does Taxation Lead to Representation? *British Journal of Political Science*, 34 (2):229–249, apr 2004. ISSN 0007-1234. doi: 10.1017/S0007123404000031. URL http://www.journals.cambridge.org/abstract{_}S0007123404000031.

Mauro Rota. Military spending, Fiscal Capacity and The Democracy Puzzle. *Explorations in Economic History*, 60(November):41–51, apr 2016. ISSN 00144983. doi: 10.1016/j.eeh.2015.11.002. URL http://dx.doi.org/10.1016/j.eeh.2015.11.002http://linkinghub.elsevier.com/retrieve/pii/S0014498315000595.

Raul Sanchez de la Sierra. On the Origin of States: Stationary Bandits and Taxation in Eastern Congo. 2014. URL http://www.columbia.edu/{~}rs2861/Jobmarketpaper.pdf.

Joseph Schumpeter. *Joseph A. Schumpeter: The Economics and Sociology of Capitalism*. Princeton University Press, 1991.

Hillel Soifer. The Institutional Origins of State Infrastructural Power: Historical Evidence from Latin America.

Hillel Soifer. Measuring State Capacity in Contemporary Latin America. *Revista de Ciencia Política*, 32(3):585–598, 2012.

Hillel Soifer and Matthias vom Hau. Unpacking the Strength of the State: The Utility of State Infrastructural Power. *Studies in Comparative International Development*, 43(3-4):219–230, dec 2008. ISSN 0039-3606. doi: 10.1007/s12116-008-9030-z. URL http://link.springer.com/10.1007/s12116-008-9030-z.

Kenneth Sokoloff and Eric Zolt. *Inequality and the Evolution of Institutions of Taxation: Evidence from the Economic History of the Americas*. Number July. 2007. ISBN 0226185001. URL http://www.nber.org/chapters/c10654.

David Stasavage. *States of Credit: Size, Power, and the Development of European Polities*. Princeton University Press, 2011.

John Stephens, Dietrich Rueschemeyer, and Evelyne Huber Stephens. *Capitalist Development and Democracy*. University of Chicago Press, 1992.

Terry Therneau. *survival: Package for Survival Analysis*, 2015. URL https://cran.r-project.org/web/packages/survival/. R package version 2.38-3.

Terry Therneau and Patricia Grambsch. *Modeling Survival Data: Extending the Cox Model*. Statistics for Biology and Health. Springer New York, New York, NY, 2000. ISBN 978-1-4419-3161-0. doi: 10.1007/978-1-4757-3294-8. URL http://link.springer.com/10.1007/978-1-4757-3294-8.

Cameron Thies. War, Rivalry, and State Building in Latin America. *American Journal of Political Science*, 49(3):451–465, jul 2005. ISSN 0092-5853. doi: 10.1111/j.1540-5907.2005.00134.x. URL http://doi.wiley.com/10.1111/j.1540-5907.2005.00134.x.

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

Jeffrey Timmons. The Fiscal Contract: States, Taxes, and Public Services. *World Politics*, 57(4):530–567, 2005. ISSN 00438871. doi: 10.2307/40060117. URL http://www.jstor.org/stable/40060117.

Gregory Wawro. Estimating Dynamic Panel Data Models in Political Science. *Political Analysis*, 10 (1):25–48, feb 2002. ISSN 10471987. doi: 10.1093/pan/10.1.25. URL http://pan.oupjournals.org/cgi/doi/10.1093/pan/10.1.25.

Frederic Weaver. *Class, State, and Industrial Structure: The Historical Process of South American Industrial Growth*. Praeger, 1980.

Yihui Xie. *knitr: A General-Purpose Package for Dynamic Report Generation in R*, 2016. URL http://yihui.name/knitr/. R package version 1.12.3.

Maurice Zeitlin. *The Civil Wars in Chile: (or The Bourgeois Revolutions that Never Were)*. Maurice Zeitlin, 1984.