# Structural Transformations and State Institutions in Latin America, 1900-2010

Héctor Bahamonde, PhD

*Postdoctoral Fellow • Center For Inter-American Policy & Research • Tulane University

e:hbahamonde@tulane.edu

w:www.hectorbahamonde.com

September 5, 2017

**Abstract**

I argue that the context in which countries implemented the income tax law was a critical juncture, promoting or undermining long-term economic and political development. When the implementation of the income tax reflected the foundational sectoral economic cleavage (rooted in the secular structural transformation), the tax expanded the overall state capacities, crystallizing a series of reforms that replaced the backwards institutional order, fostering long-term sectoral balanced economic growth. In turn, balanced growth promoted higher levels of sectoral equality precluding sectoral dominance of either political elite.

**Please consider downloading the last version of the paper here**

*I thank Robert Kaufman, Daniel Kelemen, Douglas Blair, Paul Poast, John Landon-Lane, Mark Pickup, Paul Kellstedt, Henry Thomson, Quintin Beazer and Ira Gang for all the helpful comments. I also thank the participants of the 75th Annual Conference of the Midwest Political Science Association, the School of Arts and Sciences and the Political Science Department at Rutgers for granting me a Pre-Dissertation Award (2016) that helped me to continue with this project. All errors are my own.

# I. Sectoral Conflicts and Development

> *Practically all governments are engaged in promoting one [group]. There are [...] landlord governments against the peasants and the industrialists*
>
> Lewis [1965, 410]

The literature on political and economic development is vast. Without trying to survey all of it, there seems to be an agreement in that strong institutions cause better economic performance. For example North [1990, 3] asserts that the idea that "institutions affect the performance of economies is hardly controversial." However, most explanations of economic success focus property rights protection,[1] and regime type. I find that this is a limitation since authoritarian regimes with little or no respect for property rights grow at levels that sometimes even surpass democratic countries. While I still think that institutions matter for economic growth, this paper seeks to contribute to the literature by emphasizing the role of sectoral conflicts on political *and* economic development. I build on the *fiscal sociology* paradigm to argue that fiscal institutions, which are the engine of state-*making*, are product of a sectoral conflict. In turn, borrowing from the *dual sector* model, I document how the secular structural transformation (the gradual emergence of the industrial sector) fostered the reversal of the backward institutional order implemented since colonial times, producing long-term balanced economic growth. I exploit sectoral outputs from 1900 to 2009 to proxy the emergence of the industrial sector in a number of Latin American countries,[2] vector autoregressive models (VAR), Granger-causality tests, impulse response functions (IRFs) and the Chilean case to illustrate the causal mechanisms. The results amply suggest that the context in which countries implemented the income tax law was a critical juncture, promoting or undermining long-term economic and political development.

I argue that the context in which countries implemented the income tax law was a critical juncture, promoting or undermining long-term economic and political development. When the implementation of the income tax reflected the foundational sectoral economic cleavage between the industrial and agricultural sectors, the tax expanded the overall state capacities, crystallizing a series of reforms that replaced the backwards institutional order, fostering long-term sectoral balanced economic growth. In turn, balanced economic growth promoted political development by fostering an economy structured in a way where the industrial and the agricultural sectors

[1] Johnson and Koyama [2016].
[2] The actual data availability might vary by case.

were mutually dependent. Balanced economic growth was important for political development because each of the corresponding political arms representing these sectors had the same military resources and similar access to other bargaining assets, fostering in this way inter-elite cooperation and institutional investments. However, when the tax was implemented in contexts where the sectoral conflict was weak (because the industrial was not strong enough to pose credible threats to the landed elites), the post-colonial institutional order was left unaltered, preserving the political advantages the landowning elites enjoyed since colonial times. Elsewhere I have argued that the rise of the industrial sector accelerated the implementation of the income tax law,[3] causing a long-lasting positive impact on state capacities.[4] In this paper I study how the implementation of the income tax in cases of high sectoral conflict set states in a path of political development causing long-term *modern* (i.e. 'balanced') economic growth (see Figure 1). Importantly, since the economy alters the balance of political power, this theory is relevant also for explaining political development too (circular arrows at the end of the causal chain). The crux of the argument is that the economic structural transformation characterized by "a secular decline of agriculture and substantial expansion of manufacturing"[5] imposed tight constraints on the way politics was run by the incumbent landowning class, rising levels of sectoral conflicts. I focus on one particular conflict, differences in sectoral preferences towards direct taxation.

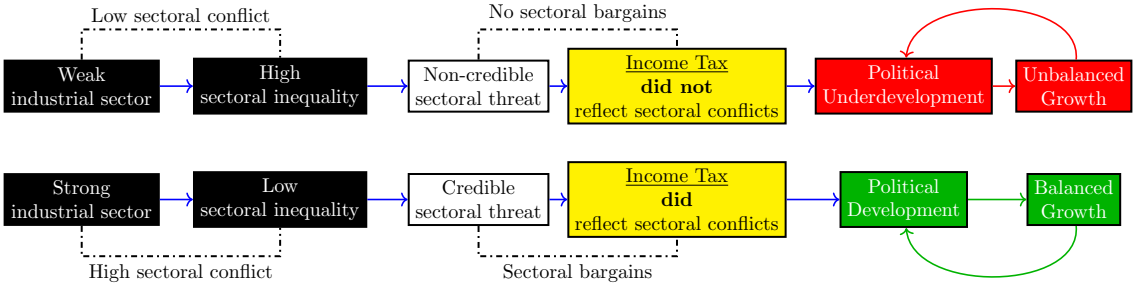


**Figure 1:** *Causal Mechanism*

The sectoral conflict has its origins in how elites invested in different assets have different views towards taxation. Since taxation affects landowners and industrialists in different ways,[6] economic elites are divided on their preferences towards fiscal policies.[7] Agriculturalists typically resist taxation as land fixity increases the risk premium of their main asset.[8] In contrast, industrialists' preferences

[3] Bahamonde [2017b].
[4] Bahamonde [2017c].
[5] Johnston and Mellor [1961, 567].
[6] Acemoglu and Robinson [2009, 289].
[7] See for example Llavador and Oxoby [2005].
[8] Robinson [2006, 512].

toward taxation are more elastic as capital can be reinvested in nontaxable sectors.[9] However, this political-economic cleavage is more likely to resolve in favor of direct taxation when income inequality among the elites is low.[10] Particularly, given the initial advantage of the landowning elites, post-colonial landowners were very effective resisting direct taxation. However, the emergence of a strong industrial class put heavier pressures for centralization and investments in public goods. Beramendi et al. [2016, 18] explain that as industrialists depended more on infrastructure implemented at the local level such as roads, railroads and bridges, they "[*preferred*] to shoulder a higher tax burden through progressive direct taxation." Additionally, lower levels of inter-elite economic inequality implied similar degrees of military capabilities.[11] In these circumstances war was most likely to exhaust all existent assets without producing positive outcomes for either sector,[12] putting then pressures to reach agreements rather than engaging in armed conflicts. I identify one such agreement, the implementation of the income tax, and explain how the process of implementing the tax required the incorporation of previously excluded elites - industrialists - changing the institutional order and promoting long-term economic development.

Empirically, I find that in cases where the income tax was introduced in reaction to the emergence of a strong industrial sector there was a reversal of the backwards institutional order inherited during colonial times. Particularly, in these cases the income tax is associated with long-run balanced economic growth, 'balancing' the relative power of their corresponding political elites. Moreover, the implementation of the income tax law in these cases was product of a sectoral compromise between the two groups, promoting quasi-voluntary sectoral compliance with the new tax. Given the importance of the income tax for state-making, the incorporation of both sectoral interests promoted economic and political development. However, when the elite structure was weak, the income tax did not reflect the sectoral cleavage but other factors. As I explain later, the implementation of the income tax law in Chile responded to endogenous domestic pressures, particularly when there were lower levels of inter-sectoral inequality, securing the inclusion of both groups in the design and implementation of the income tax law. The Chilean internal revenue service is among the finest tax institutions in Latin America. For instance, Guatemala imposed the income tax law in 1963, and by 1967 the national income tax office employed 194 people, and only 9 of whom had graduated from college.[13] While Guatemala did implement the tax, the institution did not reflect the preferences of the both sectors. In fact, the law responded to exogenous factors. Particularly, the law was imposed

[9] Hirschman [1970] and Ronald Rogowski in Drake and McCubbins [1998, ch. 4]. However, see Bates and Lien [1985, 15].
[10] Tani [1966, 157] explains that the absence of "wealth groups" makes passing an income tax law easier.
[11] Boix [2015].
[12] Richard Salvucci in Uribe-Uran [2001, 48].
[13] Di John [2006, 5].

by the US-backed dictator Colonel Enrique Peralta Azurdia, bypassing the inter-sectoral economic cleavage (because there was no cleavage). As industrialists were too weak, landowners were never challenged and there were less pressures to implement an income tax, crystallizing the backwards institutional order inherited in colonial times. Consequently, the income tax is a necessary but not sufficient cause of development as it required the presence of high sectoral conflicts to cause economic development.[14]

The political development literature has traditionally focused on socio-economic cleavages and potential alliances between a *homogeneous* ruling elite and politically excluded segments of the society, traditionally peasants or other disenfranchised groups such as the bourgeoisie. Moore [1966], Tilly [1992], Boix [2003], Stasavage [2008] and Acemoglu and Robinson [2009] are among the most prominent examples supporting this view.[15] In this paper I focus on political divisions *among* the elite. The elite-sector approach is hardly new. Just to mention some examples, Ansell and Samuels [2014] and Boix [2015] examine the role of economic inequality/equality among the elite on democratization, Saylor [2014, 8] looks at the "coalitional basis of state building" and Mares and Queralt [2015] examine how income taxation in Europe is associated with inter-elite conflicts, particularly between the landed elite and the industrial elite. While political economists have already recognized the relevance of sectoral conflicts or the role of the structure of the economy on the political structure, most of the times the focus has been on democratic development. Using the same sectoral approach as a starting point this paper stresses how structural conflicts are associated with institutional *and* economic development.

Next section explains the dual sector theory, focusing on how balanced growth happens and why it is important for political development. Then I provide some historical context presenting the Chilean case to illustrate the theory. Using the fiscal sociology paradigm, I pay especial attention to how the series of inter-elite bargains that surrounded the implementation of the income tax fostered institutional development and state-*making*. Next, I present econometric evidence, putting especial attention to the relationship between institutional development, particularly, fiscal expansion and long-term balanced economic growth. Lastly, I provide some final comments.

[14] Similarly, Johnson and Koyama [2017] find that the link between state capacities and economic growth is conditional on several factors (population size, culture, population homo(hetero)geneity, among others). However, in my account, the role of the income tax is conditioned on the degree of intersectoral conflicts, which I measure via the size of the industrial sector.

[15] For example, Acemoglu and Robinson [2009, 293] explain that 'all members of the elite have identical endowments so there is no heterogeneity among the elites.' However, later in the book (p. 289) they briefly consider the preferences of industrialists and agriculturalists towards democratization.

# II. Structural Transformations and the Dual Sector Economy Model

> *When by the improvement and cultivation of land [...] the labour of half the society becomes sufficient to provide food for the whole, the other half [...] can be employed [...] in satisfying the other wants and fancies of mankind*
>
> Smith [1904, I.11.59]

The *dual sector* or *balanced growth* model explains the mechanics of modern economic growth[16] by emphasizing the importance of macro-structural gradual transformations. The theory argues that the economy is divided into two sectors loosely defined as 'advanced or modern sector' or 'manufacturing sector,' and 'backward or traditional sector,' or 'agriculture.'[17] The basic intuition of this paradigm is that in order for the industrial sector to develop it needs *first* an efficient and strong agricultural sector. As I explain later, contingent on efficient agricultural productivity, the industrial sector rises its productivity relative to the agricultural sector's. If the agricultural sector lacks economic efficiency, the industrial sector hardly develops, leading to a stagnant economy. This literature is vast. While this section explains just the core, there are many current theoretical and methodological applications and extensions of the dual sector model. Just to name a few, Thirlwall [1986], Mathur [1990], Hatton and Williamson [1991], Blunch and Verner [2006], Tiffin and Dawson [2003], Kanwar [2000] and McArthur and McCord [2017] study sectoral growth, shock persistence, and other related topics using the same theoretical framework and methodology I employ in this paper (or some variation of it). Notably, Ansell and Samuels [2014] use this model in political science to explain democratization.

It was Lewis [1965, 151] who popularized the idea that "[t]he secret of most development problems is to maintain a proper balance between sectors." The dual nature of the economy has been widely accepted and forms part of "a long tradition in development economics."[18] And while dichotomizing the entire economy in just two sectors might sound as too much of an oversimplification, I follow Dixit [1973, 325] in that the dual economy model provides a significantly better description of the

[16] Gollin et al. [2002, 160].

[17] Jorgenson [1961, 311]. Importantly, I follow Kuznets [1967, 87] in that "mining is combined with [...] industry because of the large scale of its productive unit, its close connection with manufacturing, and the distinctive trend in its share in product and resources." Similarly, Debowicz and Segal [2014, 237] includes mining within the industrial sector.

[18] Kelley et al. [1972, 8].

economy because "it reflects several vital social *and* economic distinctions."[19] Johnston and Nielsen [1966, 280] also explain that "[t]he reality found in most underdeveloped countries approximates this dichotomy [...] sufficiently." In fact, Lindert and Williamson [1985, 354] explain that the dual-sector model is "the dominant paradigm used by Third World observers." However, "balanced growth is almost axiomatic as a desirable objective, for both developed *and* under-developed countries."[20] For example, Bergquist [1986, 8] explains that "Colombia's two traditional political parties crystallized in the 1840's and reflected in many respects the dual nature of the Colombian economy." While this is a stylized model, Dixit [1973, 326] is right in that a "major drawback of dualistic theories [...] is the total neglect of the service sector." However, the literature is consistent in that the third sector necessarily develops *after* the industrial sector is developed.[21]

Economic development depends on the emergence of the industrial sector which in turn depends on the development of a productive agricultural sector.[22] As Kuznets [1961, 59] puts it, "economic growth is *impossible* unless there is a substantial rise in product per worker in the agricultural sector."[23] Similarly, Hayami and Yamada [1969, 105] argue that "[i]ndustrialization and modern economic growth are basically *conditioned* by the level of agricultural productivity."[24] There are two main reasons for why agricultural development is a prerequisite of industrial development: efficient agricultures are more likely to supply the industrial sector with cheap foodstuff and cheap labor. In Johnston [1951, 498]'s words, "[e]xpanded agricultural productivity releases people from the land for employment in industry [and] provides food for the growing population." If the expansion of the agricultural sector is compromised, it will necessarily compromise the expansion of the industrial sector as well.[25] The political correlate of the inter-sectoral dependence proposed in this framework is that a weak inter-sectoral structure (e.g. a lack of structural complementarity) will truncate the emergence of a strong political challenger (industrialists) able to contest the landed elites. I contend that inter-elite contestation is important for political development. As Hechter and Brustein [1980, 1085] explain, "state formation will be more likely to the degree that powerful individual actors form two groups on the basis of divergent economic and political interests." Here I explain how these sectoral dynamics helped to form the Latin American state, fostering economic growth as well.

The first reason for why a productive agricultural sector is key to industrial development is that

[19] Emphasis is mine.
[20] Streeten [1959, 169]. Emphasis is mine.
[21] Galenson [1963, 506-507, 513] and Baer and Herve [1966, 95-96].
[22] Johnston and Mellor [1961, 567] argue that this process "seems to be a necessary condition for cumulative and self-sustaining growth."
[23] Emphasis is mine.
[24] Emphasis is mine.
[25] In fact Landon-Lane and Robertson [2003, 2] find that an important source of growth in developing economies is "derived through the reallocation of resources [particularly] by drawing labour moving out of traditional sector employment into the modern sector."

more efficient agricultural techniques make agricultural production less labor intensive, allowing landowners to free workers which the industrial sector can rely on. The need for an improvement in agricultural production as a necessary step prior to industrialization "has been termed the 'prerequisite' hypothesis."[26] Technologies such as "crop rotation, pest control, seed breeding [and] fertilizer use [represent] the major potential source of agricultural labor productivity,"[27] increasing also "non-agricultural value added per worker."[28] Nicholls [1961, 339-340] shows that advanced industrial countries initially had relatively more developed and productive agricultural sectors. In fact, Gallo [1991, 57] finds that in Bolivia, *a primarily agricultural economy*, "[t]he tools employed in production were few and rudimentary, the use of fertilizers was minimal, and methods for conservation of the soil were practically unknown until the beginning of the 1950s." However, highly industrialized countries such as Japan, the U.K., the U.S.S.R. and Taiwan adopted *prior industrialization* very efficient agricultural technologies such as higher-yielding varieties, fertilizers and other activities that improved farm practices.[29] In fact, Serrano and Pinilla [2016] find that in Latin America there has been a declining role of agricultural exports as industrialization levels have increased.

Surplus of labor naturally leads to a reallocation of redundant workers into the industrial sector, which is the crux of economic development.[30] Nurkse [1953] in fact argues that development *means* to employ the surplus labor.[31] The literature coincides in that the 'natural' role of the agricultural sector is to provide labor to the industrial sector.[32] For example, Dixit [1973, 326] argues that the "agricultural sector *must* fulfill [...] its dual role of supplier of labour to industry and of food for the industrial labour force."[33] While Lewis [1954] in his canonical work argued that there existed an 'unlimited' supply of agricultural labor, a word of caution is in order. The meaning of the supposedly 'unlimitedness' of labor should *not* be taken literally as in reality means *redundant labor force*.[34] In fact, Nurske [1961, 225] points out that the concept "is commonly used to denote all types of rural unemployment."[35]

[26] Kelley et al. [1972, 133].
[27] Ranis and Fei [1964, 62].
[28] McArthur and McCord [2017].
[29] Johnston and Mellor [1961, 571] and Johnston [1951, 507-508]. Similarly Caselli [2005, 723] explains that poorer economies have inefficient agricultural sectors which at the same time are the mayor source of employment.
[30] Ranis and Fei [1964, 7] and Leibenstein [1957b, 51].
[31] Similarly, Matsuyama [1991, 621-622] points out that "[i]ndustrialization [*consists of*] a shift of resources from agriculture to manufacturing."
[32] Ranis and Fei [1964, 114] argue that "labor reallocation [...] is the *inevitable* and *natural* consequence of the continuous expansion of agricultural labor productivity." Emphases are mine.
[33] Emphasis is mine.
[34] See Ranis and Fei [1964, 203] and Jorgenson [1967, 289].
[35] Or as Leibenstein [1957a, 102-103] puts it, "where the existing labor supply could cultivate more land without loss of efficiency." In any case, Sen [1966] explains that a number of important predictions made by the dual sector model do not need this assumption to hold for the model to work. On a separate note, Ranis and Fei [1964, 99], Skott and Larudee [1998, 280] and Fields [2004, 730] argue that a pool of *redundant* agricultural workers (a 'reserve army')

The second reason for why a productive agricultural sector is key to industrial development is because efficient techniques in agricultural production are able to supply cheaper foodstuff.[36] "It is *self-evident* that without increasing food output, the capitalist sector must remain in a stationary state."[37] Food surplus is a direct consequence of efficiency, and it is just as important as labor reallocation. In sum, as Kuznets [1961, 60] explains it, if "output per worker in agriculture does not rise substantially, economic growth in the first case will be stopped by scarcity of agricultural products, and in the second case by scarcity of labour."

I argue that balanced economic growth is important for political development because it fosters a *level* 'playing' political field. When the economy is structured in a way where both economic sectors are mutually dependent, each sector's corresponding political arm has the same military resources and similar access to other bargaining assets, fostering inter-elite cooperation. As section III explains, higher relative levels of dependence on public infrastructure of the industrial sector promoted the implementation of the income tax. In turn, following the fiscal sociology paradigm,[38] I contend that the tax was a state-*making* institution, particularly when the preferences of both elites were incorporated into this institution important for state-building.[39] However, *un*balanced economic growth promoted an *unleveled* 'playing' political field. Following the inertia of post-colonial institutions, unbalanced growth helped with the persistence of the advantaged position of the landed elites. The income tax when implemented did not necessarily reflect the foundational sectoral-economic cleavage, and the incentives of having an efficient income tax were low. Since industrial elites were too weak to pose credible threats to agricultural incumbents, the equilibrium was to rely on import taxes, compromising both state expansion in the long-run and long-term economic growth.

## III. Dualism in Chile: A Brief Illustrative Case

Historically, agriculturalists had been a hegemonic group protected by norms and institutions that originated in colonial times. Those norms had survived due to institutional inertia, perpetuating the advantaged position of the landed elites.[40] Collier and Collier [2002, 106] argue that the "national

is what prevents a rise in industrial wages.

[36] See Jorgenson [1961, 312] and Ranis and Fei [1964, 157].

[37] Ohkawa [1961, 21]. Emphasis is mine.

[38] For a review, see Martin and Prasad [2014].

[39] I agree with Kurtz [2009, 484] in that "the incorporation of upper-class actors into the national political system is crucial to enabling cooperation in state building and public-goods provision activities, despite whatever other cleavages might divide them."

[40] This idea also applies for Mexico. "The principal source of [Mexico's] wealth was not its mines, Humboldt noted, but agriculture." Amaral and Doringo, in Uribe-Uran [2001, 13].

government was dominated by [...] owners of large agricultural holdings."[41] Similarly, while Zeitlin [1984, 13] explains that "landowners controlled both the vote and the labor power of the agrarian tenants [and] peasants [...] and this was the *sine qua non* of their continuing political hegemony," Baland and Robinson [2008, 1748] explain that "[c]ongressional representation was heavily weighted in favor of rural districts." In the presidency also, landowners were the single most represented group.[42]

Historians still debate whether agriculturalists and industrialists comprised two *different* elites. Some claim that this dualism is incorrect.[43] They argue that since landowners also invested in industry,[44] there was a blurry class division between the mining, banking and agricultural sectors.[45] Perhaps the most cited reference regarding this issue is Veliz [1963, 231-247]. I contend that there are a series of stylized facts that strongly suggest that there was indeed a structural economic cleavage which led to the consolidation of two separate sectors. First of all, there were certain practices that mask the existence of a sectoral dualism. For example, it was common that industrialists invested in real state. However, in many instances they did so *just* to obtain credit. Kirsch [1977, 59] explains that "in a *rural society* land offered one of the best guarantees for loans [since] loans could not be secured by equipment, machinery, or inventory. Only real estate was acceptable collateral."[46] In fact, this practice shows how the credit system was oriented to give unfair advantage to the landed elites. Similarly, Zeitlin [1984, 174] finds 'the combined ownership of capital and landed property was a distinctive quality of *certain* [elites] actors,'[47] not something that was generalizable to *the* elites. There were also other instances where miners invested in banking. Yet, Segall [1953] argues that Chilean bankers, after the crisis of the mining sector around the 1870s, had acquired a number of mineral deposits given as collateral years before. Similarly, but for the Argentinean case, Hora [2002, 609] explains that 'the image of an entrepreneurial elite with assets *scattered throughout several spheres of investment* does not appear entirely correct.'[48] In fact, Freeman and Quinn [2012] explains that while most political development theories run short due to their purely domestic nature, asset diversification constitutes a later development "in international markets [roughly after 1980]."

[41] See also McBride [1936, 15] who 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."
[42] Bauer [2008, 45].
[43] See for example Mamalakis [1976, 125].
[44] Kirsch [1977, 57, 95] who cites Bauer [2008]. See also Coatsworth and Williamson [2002, 23] argue that "[t]he only landowners that mattered in 19th century Latin American politics were those for whom land represented but one asset in a much broader portfolio." In the same vein, 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."
[45] Bauer [2008, 30, 44, 94, 108].
[46] Emphases are mine.
[47] Emphasis is mine.
[48] Emphasis is mine.

In addition, I find here that the agricultural sector's role in the economy is to supply labor to the industrial sector, limiting agriculture's expansion relative to industry's growth,[49] evidencing the lack of incentives of crossed investments. I contend that the nature of the main factors of production of agriculturalists and industrialists (land v. capital), in addition to their preferences over fiscal policy, produced a strong sectoral cleavage. I find little evidence in this paper in favor of the conventional wisdom, e.g. elites in Chile had one single fracture, particularly, regarding the role of the state versus the catholic church on society.

Agricultural hegemony promoted biased public investments. For instance, the existent public infrastructure mostly benefited the agricultural sector.[50] However, lower levels of inter-elite inequality (granted by industrial expansion) posed credible threats to Chilean agricultural elites. Initially, both elites confronted each other in two civil wars. Zeitlin [1984, 23] argues that the civil wars challenged a "large landed property [elite against a] productive capital [elite]." Importantly, lower levels of inequality allowed both elites access to similar military capacities. For instance, while *Balmacedistas* managed to secure the support of the army, *congresistas* (the anti-Balmaceda group) gathered support from the navy. However, war was not sustainable over time. For example, there were a number of *aborted* coups in 1907, 1912, 1915 and 1919,[51] suggesting an equilibrium where no elite had more capacities than the other elite. The requirement of better public investments for Chilean industrialists forced both the agricultural and industrial elites to reach political compromises. The keystone of these inter-elite compromises was the implementation of the income tax. In 1924, industrial elites accepted to be income taxed by agriculturalist incumbents in exchange of having more *state services* and being included in state politics. As others have explained, the non-agricultural sector "accepted taxation, *while demanding state services and expecting to influence how tax revenues were spent* [...] *Consultation and cooperation were relatively institutionalised between the two sides.*"[52] This is why the expansion of political rights *among the elite* and the rise of the industrial sector share the same timing. As Collier [1977, 683] has pointed out, "the real story of Chilean industrialization belongs to the Parliamentary period" (1891-1925).

The tax was not only important because of the new revenue it collected, however. While Humud (1969, p. 154) explains that the income tax generated considerable resources for the Chilean treasury,[53] following the fiscal sociology paradigm, the tax was important because it replaced the old institutional order, promoting state-making as well. Musgrave [1992, 99] argues that since taxation

[49] Bahamonde [2017a].
[50] For example, Zeitlin [1984, 41] explains that "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."
[51] Collier and Collier [2002, 109].
[52] Carmenza Gallo, in Brautigam et al. [2008, 165]. Emphases are mine.
[53] Bowman and Wallerstein [1982, 451-452].

(especially on incomes) requires such a high degree of state penetration, public finances offer the key for a theory of state-building. Indirect taxes are easier to levy, and hence this kind of revenue is generally considered "unearned income"[54] or "easy-to-collect source of revenues."[55] Given the relatively lower costs states have to incur to collect them, indirect taxes have a very low impact on state-building.[56] For example Krasner [1985, 46] explains that "tariffs and export taxes are easier to obtain than direct taxes, which require high levels of bureaucratic skill and voluntary compliance." In fact, when early Latin American states depended heavily on trade taxes, the state apparatus tended to be less developed.[57] Since customs administrations have always been concentrated in a few critical locations, especially ports, tariffs and customs duties did not require an elaborate fiscal structure.[58]

The very implementation of the income tax produced a secular accumulation of know-how, particularly, of better technologies able to monitor individual incomes. Unlike 'regular' institutions, income taxation infiltrates the state's coercive sovereignty unto the individual itself. Not only observing individual economies, but transforming them into public property is what fostered state expansion.[59] This argument goes in line with Besley et al. [2013] who explain that implementing the income tax law is "associated with investments in public administrative structures that support tax collection" in a number of countries, including Chile. I contend that the knowledge and expertise the state accumulated were transfered to other state institutions via spillovers, augmenting the overall levels of *stateness*. For instance, it was necessary to send official emissaries to check on accounting books of the refinery in the north, the winery in the central valley and the *hacienda* in the south. Eventually, these delegations became more complex, increasing the density of state presence in the territory. For instance, Strayer [2005] explains how official state delegations traveled the territory dispensing judicial decisions, fostering state centralization. Also, Dincecco [2015] explains that states became effective organisms upon centralizing a system of direct taxation and implementing some kind of checks-and-balances system. Others find that the *introduction* of the income tax is associated with state expansion too. For instance, Dincecco and Troiano [2015, 3] find "a positive and significant relationship between the introduction of the income tax and (1) per capita total expenditures, (2) per capita education expenditures, and (3) per capita health expenditures." Analytically, the *effectiveness* of income taxation on fiscal *capacities* increased due to

[54] Moore [2004b, 304].
[55] Coatsworth and Williamson [2002, 10].
[56] Moore [2004a, 14].
[57] Campbell [1993, 177].
[58] Bertola and Ocampo [2012, 132].
[59] Musgrave [1992, 98] and Moore [2004b, 298]. While Kurtz [2009, 2013], Soifer [2015] situate the relevant state-building critical juncture at the end of the colonial period, before the class compromises I identify in this paper, I argue that the implementation of the income tax was an important building block in this process.

the nature of the implementation of the income tax. Aghion et al. [2004, 566] explain how optimal institutional choices result from political settings where all involved actors "had a voice in the choice of institutions," essentially contributing to an equilibrium of quasi-voluntary compliance.[60]

## IV. Time Series Analyses: Vector Autoregressive Models and Granger Causality Tests

> *what a sector does is not fully attributable or credited to it but is contingent upon what happens in the other sectors*
>
> Kuznets [1961, 41]

> *Structural change is clearly an endogenous process, driven by a variety of economic forces [...] also in the statistical sense*
>
> Temple and Wößmann [2006, 212]

**Granger-causality Tests** The theory should pass a number of tests. Before the emergence of the industrial economic sector and their corresponding political elites, the landowning elites enjoyed the advantages of the post-colonial order, generating economic growth in a way that mostly benefited the agricultural sector. However, in cases where the industrial sector was strong enough to pose credible threats to the political system controlled by the landed elites, we should see a reversal of the political order. Institutional change is depicted with the implementation of the income tax law, which was particularly important for industrial development. As the Chilean case illustrates, industrial elites were willing to implement an income tax on themselves in exchange of the delivery of local public goods and access to state politics. In this section I show evidence of how the incorporation of the industrial elites changed the institutional order, fostering economic growth of *both* sectors (balanced growth). Empirically, in the first set of cases we should see that the agricultural sector grew *at expenses* of the industrial sector *both before and after* of the implementation of the income tax. However, in the second set of cases we should see that *after* the income tax was implemented there was a *reversal* of the flow of inputs, generating growth *from* the agricultural sector *to* the industrial sector (balanced growth). Importantly, in these countries the industrial sector did not grow *at*

[60] Levi [1989].

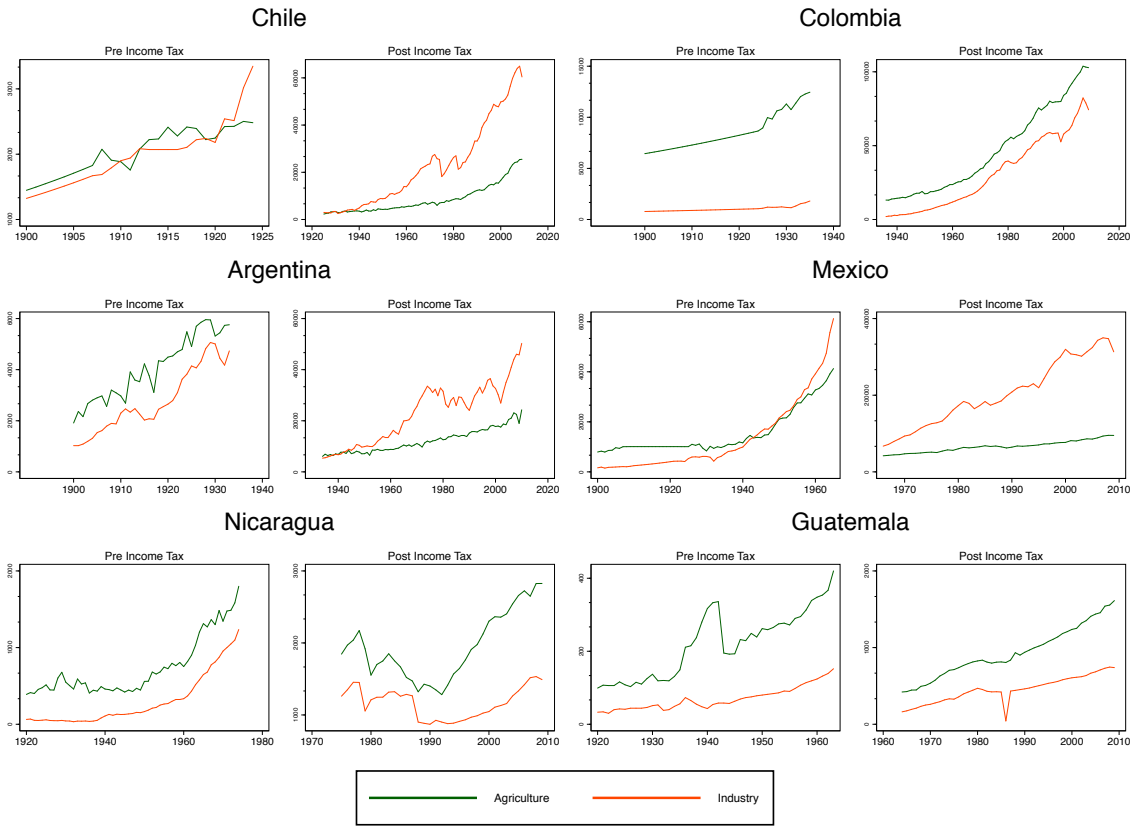


**Figure 2:** *Sectoral Outputs Before and After the Implementation of the Income Tax Law*

*expenses of* agricultural development but *because of* agricultural development. In econometric terms we should see that the income tax reversed the way in which one sector 'Granger-caused' the other.[61]

I utilize the MOxLAD data, particularly the *agriculture value-added* and *manufacturing value-added* variables.[62] The dataset spans from as early as 1900 to as late as 2009.[63] Table A1 specifies the country-specific available time spans. Using secondary sources, the table also states *when* the income tax was implemented, what the law was and its corresponding source(s).[64] Following Mahoney [2010, 5] I consider two 'advanced' economy countries (Chile and Argentina), two 'intermediate'

[61] Lutkepohl [2006, 42] explains that if some variable $X$ forecasts variable $Y$ (and not vise versa), $X$ is said to 'Granger-cause' $Y$. According to Granger [1980, 349], this concept of 'causation' is based on the idea "that the future cannot cause the past." See also Durr [1992, 197] for a similar definition. Both Beck [1992, 241] and Angrist and Pischke [2008, 237] Granger-causality is not really *causal*.

[62] 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."

[63] According to Astorga et al. [2005, 790], this dataset provides extended *comparable* sectoral value-added series in constant purchasing power parity prices.

[64] Some countries implemented some kind of income tax before, however these laws lacked enforcement, they were weak or not at all followed. In Table A1 in the Appendix section I establish the year that the literature seems to agree for when the law was implemented and properly enforced.

countries (Mexico and Colombia) and two 'less advanced' countries (Guatemala and Nicaragua). Figure 2 shows the sectoral outputs for each country, both before and after the income tax law was implemented. The econometric analyses in this section intend to recover Mahoney's typology, linking the mechanics of economic development with fiscal expansion. I expect *advanced* countries to have *balanced* economic growth *after* the implementation of the income tax, and *less advanced* countries to have *unbalanced* economic growth *both* before *and* after the implementation of the tax (null results in favor of a reversal in sectoral Granger-causation).

In Table 1 I test for Granger-causality both prior and after the implementation of the income tax law.[65] The results strongly suggest that in *advanced* countries, particularly Chile, Colombia and Mexico, the implementation of the income tax was associated with the reversal of economic backwardness institutions that promoted unbalanced economic growth. In these cases, before the income tax law, industrial growth Granger-caused agricultural growth, but after the income tax law, the agricultural sector Granger-caused industrial development (all p-values are significant at the .05 level).[66] These results suggest that the implementation of the income tax was associated with the reversal of the economic structure, going from an economic backwardness equilibrium to a balanced growth equilibrium. I interpret this change in the mechanics of economic growth as the overthrowing of the political institutions and practices that permitted agricultural expansion at expenses of the modern sector. Following the fiscal sociology literature, I contend that when the income tax was implemented under contexts of sectoral contestation this institution fostered the expansion of state institutions. In turn, these kinds of institutions set in motion a path of long-term economic development (Figure 1).[67] In Nicaragua and Guatemala, however, the tests suggest the exact opposite (all p-values are significant at the .05 level).[68] The implementation of the income tax in these countries did *not* reverse the initial economic backwardness equilibrium. I contend that when implemented, the tax did not reflect the inter-sectoral economic cleavage proper of contested political economies. The industrial sector never had enough economic leverage to politically confront the landowning elite and hence industrialists never posed credible threats to the status quo, relaxing the endogenous incentives to invest in state institutions. The Argentinian case is different. The Granger tests are inconclusive, and no significant results were found, suggesting a weak inter-sectoral cleavage structure.

**Vector Autoregressive Models (VAR) and Impulse Response Analysis (IRF)** Once we have determined the directionality of economic growth changes upon the implementation of the

[65] Specifically, the tests were computed after estimating the reduced form VAR specified in Equation 1.
[66] Except for the Mexico after the implementation of the income tax (p-value = .06).
[67] See especially next section.
[68] Except for the pre income tax period test of Guatemala, which is significant at the .1 level.

| Country | Pre/Post Income Tax | Sample | Directionality | chi2 | P-value |
|---|---|---|---|---|---|
| Chile | Pre | 1905 - 1924 | Agriculture → Industry | 3.55 | 0.47 |
| | | | Industry → Agriculture | 12.13 | 0.02 |
| | Post | 1928 - 2009 | Agriculture → Industry | 11.92 | 0.00 |
| | | | Industry → Agriculture | 5.37 | 0.07 |
| Colombia | Pre | 1902 - 1935 | Agriculture → Industry | 4.96 | 0.03 |
| | | | Industry → Agriculture | 10.44 | 0.00 |
| | Post | 1938 - 2009 | Agriculture → Industry | 4.32 | 0.04 |
| | | | Industry → Agriculture | 1.63 | 0.20 |
| Argentina | Pre | 1903 - 1933 | Agriculture → Industry | 4.19 | 0.12 |
| | | | Industry → Agriculture | .42 | 0.81 |
| | Post | 1937 - 2010 | Agriculture → Industry | .18 | 0.91 |
| | | | Industry → Agriculture | 1.37 | 0.50 |
| Mexico | Pre | 1902 - 1965 | Agriculture → Industry | .73 | 0.39 |
| | | | Industry → Agriculture | 11.57 | 0.00 |
| | Post | 1969 - 2009 | Agriculture → Industry | 5.56 | 0.06 |
| | | | Industry → Agriculture | 1.32 | 0.52 |
| Nicaragua | Pre | 1923 - 1974 | Agriculture → Industry | .48 | 0.79 |
| | | | Industry → Agriculture | 6.83 | 0.03 |
| | Post | 1977 - 2009 | Agriculture → Industry | .014 | 0.91 |
| | | | Industry → Agriculture | 4.96 | 0.03 |
| Guatemala | Pre | 1924 - 1963 | Agriculture → Industry | 2.18 | 0.54 |
| | | | Industry → Agriculture | 6.72 | 0.08 |
| | Post | 1966 - 2009 | Agriculture → Industry | .58 | 0.45 |
| | | | Industry → Agriculture | 6.05 | 0.01 |

**Table 1:** *Granger Causality Wald Tests*

income tax law only in countries where the industrial sector was strong enough to challenge the agricultural status quo, it is necessary to establish the inter-sectoral long-run economic equilibrium. This section tests whether the implementation of the income tax is associated with long-run economic development, and how/if this relationship is associated with fiscal expansion. Given that the implementation of the income tax reflected a number of inter-elite political compromises, I expect this institution to have caused deeper state development, fostering long-run economic growth. In non-advanced cases, the tests should show null results.

The study of the sectoral component of economic growth is an endogenous one.[69] If this endogeneity is not accounted for, the error term and the regressors will be correlated, and so OLS will be inconsistent. Additionally, growth rates are usually integrated. Integrated series are processes whose deviations from the mean tend to persist, cumulating or growing in time. In addition to that, integrated vectors that are mutually endogenous (like industrial and agricultural growth) imply a 'cointegrated' CI(1) relationship, imposing additional statistical restrictions. While the economic literature generally coincides in that economic growth is an I(1) process and that sectoral development is a CI(1) process, these are assumptions that should be tested. The first step is to find strong evidence of integration in each of the series. Table A2 shows several unit root tests.[70] The table indicates that all variables, periods, sectors and countries have I(1) processes, satisfying one important assumption of CI(1) vectors. The second step is to find evidence of cointegration.[71] Substantively, cointegration means that there is a long-lasting mutual inter-sectoral economic *dependence*, allowing *both* sectors to grow in a balanced fashion. Lack of evidence in favor of cointegration implies a relationship of economic backwardness between the two sectors. Consequently, I expect to find evidence of cointegration only in 'developed' cases.[72] Following Johansen [1988], Table 2 indicates that all 'developed' and 'semi-developed' countries have cointegrated series, while 'less developed' countries do not have cointegrated series,[73] suggesting that industrialists in 'developed' and 'semi-developed' countries were able to pose enough credible threats to agricultural incumbents, challenging the post-colonial institutional order and causing long-term economic growth. Less developed countries in turn lacked of an economic/political sectoral-based conflict, and consequently the political order beneficial for the landed elites remained unchallenged, compromising long-term economic growth.

To estimate the relationship of long-run inter-sectoral economic growth I use the vector-autoregressive (VAR) approach specified in Johansen [1988] which is estimated via MLE and not requiring the specification of the number of cointegrated vectors (as opposed to error correction models).[74] Formally, I fit Equation 1 in differences, one per country, both before and after the income tax law was passed.[75]

[69] Tiffin and Dawson [2003, 33].

[70] I show the test statistic and its associated MacKinnon approximate p-value in parenthesis for the ADF and Phillips-Perron tests. Both trend and drift were tested in all tests, when applicable. As I did not find any differences, I show the test statistic with no trend nor drift and one lag. The lags in the KPSS test were selected via an automatic procedure. "†" indicates that the test is barely significant or non-significant.

[71] I use VAR regressions, which do not necessarily need cointegrated vectors (see Box-Steffensmeier et al. [2014, 161, 164]). Cointegration, however, is important from a substantive standpoint in this paper.

[72] Given that the maximum number of cointegrated vectors in bivariate cointegrated series is 1, I only test for the minimum number of cointegrated relationships. See Box-Steffensmeier et al. [2014, 165].

[73] Since I am interested in the long-run equilibrium, I do not split the sample before and after the implementation of the income tax.

[74] Box-Steffensmeier et al. [2014, 164].

[75] For simplicity, the VAR equation is in reduced form.

| Country | Number of Cointegrated Vectors (rank) | Restrictions | Lags | Log-Likelihood | Trace |
|---|---|---|---|---|---|
| Chile | at least 1 | Restricted Constant | 5 | -1665.9736 | 0.3799 |
| Argentina | at least 1 | Restricted Constant | 3 | -1802.292 | 4.7657 |
| Colombia | at least 1 | Restricted Trend | 2 | -1805.6773 | 10.0076 |
| Mexico | at least 1 | Restricted Constant | 4 | -1978.1322 | 1.0274 |
| Nicaragua | 0 | Restricted Constant | 2 | -1020.221 | 11.5297 |
| Guatemala | 0 | Trend | 3 | -859.2802 | 16.5493 |

**Table 2:** *Johansen Tests for Cointegration: Complete Series*

$$\begin{aligned} \triangle M_{t_m} = &\quad \alpha_m + \beta_m \triangle M_{t-l} + \beta_m \triangle A_{t-l} + \epsilon_{t_m} \\ \triangle A_{t_a} = &\quad \alpha_a + \beta_a \triangle M_{t-l} + \beta_a \triangle A_{t-l} + \epsilon_{t_a} \end{aligned} \tag{1}$$

Notice that in both lines the different dependent variables are expressed as a function of the *same* set of lagged independent variables. Since the number of lags $l$ varies by country *and* time-span (i.e. before/after the income tax law), Equation 1 is in standard form. Table A3 describes the optimal lag structure per each country regression.[76]

Given that "it is often difficult to draw any conclusions from the large number of coefficient estimates in a VAR system,"[77] econometricians usually turn to the analyses of *impulse response functions* (IRFs), which are derived from VAR analyses.[78] "Impulse responses trace out the response of current and future values of each of the variables to a one-unit increase in the current value of one of the VAR errors."[79] Figure 3 shows four panels for each of the six countries, one for the response of agriculture to industrial growth (left column), one for the response of industrial growth to agricultural growth (right column), both before (top row) and after (bottom row) the implementation of the income tax. I expect the income tax to reverse the traditional institutional order and be associated with a path of long-run economic growth only in politically 'developed' countries. Lack of sustained balanced economic growth upon the implementation of the income tax indicates that this institution did not emerge out of the sectoral cleavage, leaving the colonial backwards economic order unaltered. The X-axis is expressed in years. The Y-axis is not growth,

[76] The next information criteria were used to determine the appropriate lag length: final prediction error, AIC, Schwarz's Bayesian information criterion, Hannan and Quinn criterion as well as the corresponding likelihood-ratio test statistics. The same criteria are used to compute the optimal lag length in Table 2. The table also shows a summary of different post-estimation tests when the optimum lag length specified in the table was used. A check mark indicates that the tests was passed successfully, a check-minus mark indicates that the test was passed somewhat successfully, and a cross mark denotes failure to reject specification problems. Detailed results are available upon request.

[77] Lütkepohl and Krätzig [2004, 159].

[78] The raw VAR regression tables are available upon requests.

[79] Stock and Watson [2001, 106]. See also Lütkepohl [2005, 51].

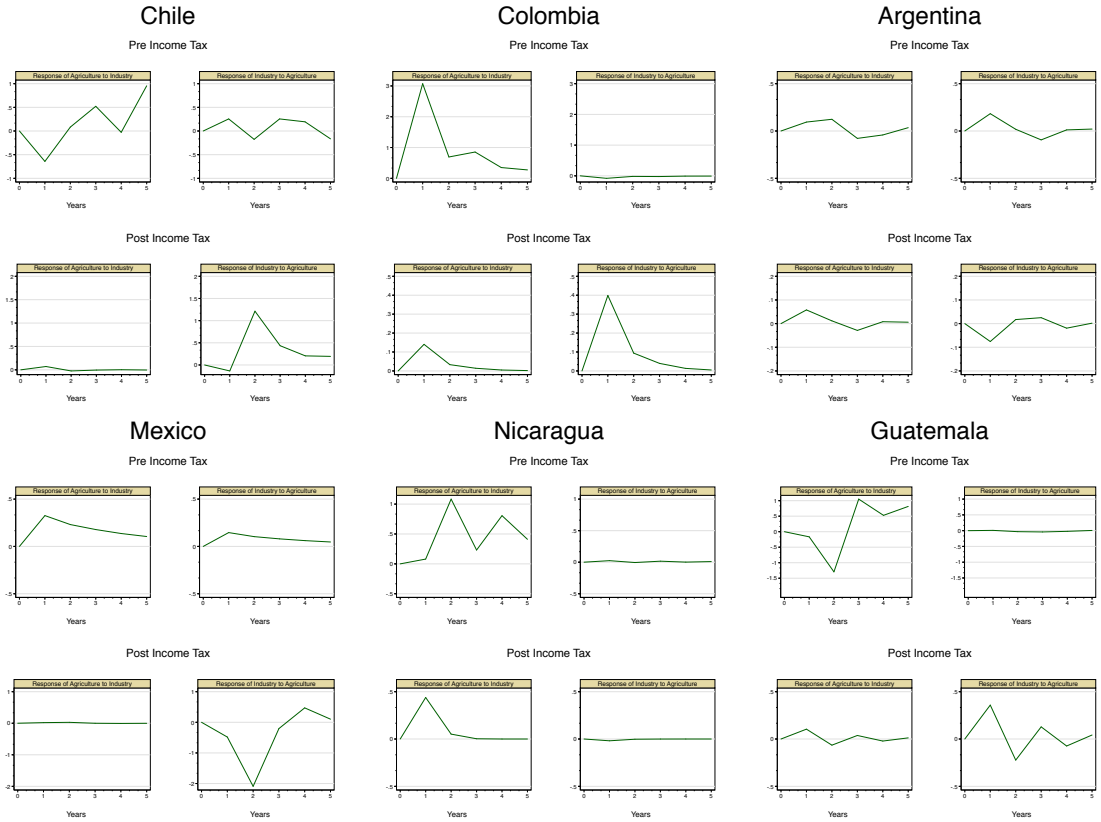


**Figure 3:** *VAR Impulse Response Functions: Sectoral Responses to Each Other's Growths*

but response to equilibrium. That is, the reaction of one sector once the other one is shocked.[80]

Figure 3 suggests that all 'developed' countries switched from an economic backwardness equilibrium to a modern economic growth strategy after the income tax was implemented, indicating a change in the institutional order. For example, a shock to industrial growth in Chile before the tax has a positive and increasing effect on agriculture. However, after the income tax is adopted, a shock on industry has a negligible effect on agricultural output. This suggests that the political institutions before the tax were oriented to channel all economic resources in a way that advantaged the agricultural sector and the landed elites. This equilibrium is reversed after the income tax law, one that of long-term balanced economic growth. Colombia and Mexico show similar patterns. While the analyses on the Argentinean case suggest that there is a long-term inter-sectoral relationship (Table 2), according to Figure 3 and Table 1 this relationship is weak, indicating weak inter-sectoral complementarity. Nicaragua and Guatemala are the prototypical backward cases. Their economies

[80] That is why the "shape of the [IRFs] indicate [...] the dynamic responses of the variables [and since the variables] are I(0) the impulse responses [...] should converge to zero" (Enders [2014, 364]).

were designed to develop the agricultural sector completely at expenses of the industrial sector. This goes in line with the null findings of cointegration in Table 2 and Granger-causality tests in Table 1. In these cases the effect of a shock to agricultural output on industrial output is zero both before and after the implementation of the income tax law, suggesting a situation of unbalanced economic growth, unbalancing also the development of agricultural political elites relative to the development of industrial elites. In both cases the implementation of the income tax did not reverse the initial economic backwardness equilibrium because when implemented, it did not reflect the inter-sectoral cleavage (because there was no cleavage). The lack of sectoral challenges and compromises left the traditional institutional order unaltered, preserving the political advantages the landowning elites enjoyed since colonial times.

## V. Discussion

Since colonial times agriculturalists had been a hegemonic group protected by the persistence of backwards institutions. This institutional unbalance promoted unbalanced economic growth. However, the emergence of the industrial sector imposed tight constraints on the way politics was run by the incumbent landowning class. The emergence of the industrial sector lowered the levels of inter-sectoral inequality making possible higher levels of inter-sectoral contestation, forcing industrial and agricultural political elites to make institutional agreements. I identify one such compromise, the implementation of the income tax. Leveraging the Chilean case I explain how and why the tax was relevant for industrial expansion. The crux of the argument explains how the context in which countries implemented the income tax law was a critical juncture, promoting or undermining long-term economic and political development. When the implementation of the income tax reflected the foundational sectoral economic cleavage, the tax expanded the overall state capacities, crystallizing a series of reforms that replaced the backwards institutional order, fostering long-term balanced/modern economic growth. In turn, balanced growth reinforced sectoral inter-dependence, precluding sectoral dominance of either political elite.

The Chilean case suggests that these compromises took place during the formative years of the state and during a period of structural indetermination, where neither elites had a clear economic, military, and political advantage. Industrial elites accepted to be income taxed in exchange of implementing public goods delivered at the local level. Public infrastructure was key for their continuous expansion. As others have argued, industrial elites preferred to impose the income tax on themselves rather than imposing trade taxes. In turn, and according to fiscal sociologists, the implementation of this institution was key for political development. Using time-series econometric

methods I find that when the sectoral cleavage was strong (cointegration), the income tax law promoted long-term economic growth (VAR models and IRF analyses). Balanced economic growth was important for political development. I explain how balanced growth secured egalitarian political conditions between the two elites.

..... ..... **Word count**: 10,478 ..... .....

# VI. Appendix

| Country | Available Data | Year Income Tax | Law | Source |
|---|---|---|---|---|
| Chile | 1900 - 2009 | 1924 | *Ley* 3996 | Mamalakis [1976, 20] and LeyChile.Cl (official) |
| Colombia | 1900 - 2009 | 1935 | *Ley* 78 | Figueroa [2008, 9] |
| Argentina | 1900 - 2010 | 1933 | *Ley* 11682 | Infoleg.Gob.Ar (official) |
| Mexico | 1900 - 2009 | 1965 | *Ley de Impuesto sobre la Renta* | Díaz González [2013, 130-133] and Diario Oficial (official) |
| Nicaragua | 1920 - 2009 | 1974 | *Ley* 662 | Legislacion.Asamblea.Gob.Ni (official) |
| Guatemala | 1920 - 2009 | 1963 | *Decreto* 1559 | Instituto Centroamericano de Estudios Fiscales [2007, 165] |

**Table A1:** *Sample, Data Available and Year the Income Tax was Implemented*

| Country | Time Frame | Sector | Augmented Dickey-Fuller | Phillips-Perron | KPSS | Conclusion |
|---|---|---|---|---|---|---|
| Chile | Pre | Agriculture | -1.185 (0.68) | -1.241 (0.66) | .107† | I(1) |
| | | Industry | 2.310 (0.99) | 2.556 (0.99) | .113† | I(1) |
| | Post | Agriculture | 4.557 (1.00) | 5.40 (1.00) | .289 | I(1) |
| | | Industry | 0.908 (0.99) | 1.458 (0.99) | .249 | I(1) |
| | All | Agriculture | 5.521 (1.00) | 6.722 (1.00) | .31 | I(1) |
| | | Industry | 1.582 (0.99) | 2.305 (0.99) | .314 | I(1) |
| Colombia | Pre | Agriculture | 2.709 (0.99) | 2.414 (0.99) | .204 | I(1) |
| | | Industry | 2.103 (0.99) | 3.257 (1.00) | .183 | I(1) |
| | Post | Agriculture | 2.392 (0.99) | 3.156 (1.00) | .282 | I(1) |
| | | Industry | 0.520 (0.98) | 1.044 (0.99) | .241 | I(1) |
| | All | Agriculture | 4.256 (1.00) | 5.893 (1.00) | .372 | I(1) |
| | | Industry | 1.674 (0.99) | 2.707 (0.99) | .374 | I(1) |
| Argentina | Pre | Agriculture | -0.849 (0.80) | -1.201 (0.67) | .0801† | I(1) |
| | | Industry | -0.495 (0.89) | -0.378 (0.91) | .115† | I(1) |
| | Post | Agriculture | 1.197 (0.99) | 1.093 (0.99) | .277 | I(1) |
| | | Industry | 0.228 (0.97) | 0.381 (0.98) | .0901† | I(1) |
| | All | Agriculture | 1.484 (0.99) | 1.401 (0.99) | .332 | I(1) |
| | | Industry | 1.007 (0.99) | 1.237 (0.99) | .183 | I(1) |
| Mexico | Pre | Agriculture | 4.601 (1.00) | 5.552 (1.00) | .288 | I(1) |
| | | Industry | 5.803 (1.00) | 10.776 (1.00) | .29 | I(1) |
| | Post | Agriculture | 0.599 (0.9876) | 0.497 (0.99) | .109† | I(1) |
| | | Industry | -1.255 (0.65) | -0.982 (0.76) | .113† | I(1) |
| | All | Agriculture | 3.431 (1.00) | 3.607 (1.00) | .341 | I(1) |
| | | Industry | 0.672 (0.99) | 2.020 (0.99) | .367 | I(1) |
| Nicaragua | Pre | Agriculture | 2.473 (0.99) | 2.355 (0.99) | .25 | I(1) |
| | | Industry | 4.958 (1.00) | 9.100 (1.00) | .244 | I(1) |
| | Post | Agriculture | -0.154 (0.94) | 0.154 (0.97) | .2 | I(1) |
| | | Industry | -1.237 (0.6577) | -1.176 (0.68) | .189 | I(1) |
| | All | Agriculture | 0.636 (0.99) | 0.759 (0.99) | .116† | I(1) |
| | | Industry | -0.164 (0.94) | -0.090 (0.95) | .123 | I(1) |
| Guatemala | Pre | Agriculture | -0.393 (0.91) | -0.343 (0.92) | .0639† | I(1) |
| | | Industry | 1.358 (0.99) | 1.704 (0.99) | .199 | I(1) |
| | Post | Agriculture | 1.786 (0.99) | 1.965 (0.99) | .162 | I(1) |
| | | Industry | -0.998 (0.75) | -1.352 (0.61) | .0915† | I(1) |
| | All | Agriculture | 3.349 (1.00) | 3.714 (1.00) | .321 | I(1) |
| | | Industry | 0.413 (0.98) | 0.017 (0.96) | .288 | I(1) |

**Table A2:** *Unit Root Tests for Agricultural and Industrial Growth*

| Country | Time Frame | Number of Lags | LM | Normally Tests | | | Stability Condition |
|---|---|---|---|---|---|---|---|
| | | | | *Jarque-Bera* | *Skewness* | *Kurtosis* | |
| Chile | Pre | 4 | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Post | 2 | ✓ | ✓⁻ | ✓⁻ | ✓⁻ | ✓ |
| Colombia | Pre | 1 | ✓⁻ | ✗ | ✗ | ✗ | ✓ |
| | Post | 1 | ✓ | ✓⁻ | ✓⁻ | ✓⁻ | ✓ |
| Argentina | Pre | 2 | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Post | 2 | ✓ | ✓⁻ | ✓ | ✓⁻ | ✓ |
| Mexico | Pre | 1 | ✓ | ✓⁻ | ✓⁻ | ✓⁻ | ✓ |
| | Post | 2 | ✓ | ✓ | ✓ | ✓ | ✓ |
| Nicaragua | Pre | 2 | ✓ | ✓⁻ | ✓⁻ | ✓⁻ | ✓ |
| | Post | 1 | ✓ | ✓⁻ | ✓⁻ | ✓⁻ | ✓ |
| Guatemala | Pre | 3 | ✓ | ✗ | ✓⁻ | ✓⁻ | ✓ |
| | Post | 1 | ✓⁻ | ✓⁻ | ✓⁻ | ✓⁻ | ✓ |

**Table A3:** *Lag Length and Post-Estimation Results*

## References

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

Philippe Aghion, Alberto Alesina, and Francesco Trebbi. Endogenous Political Institutions. *The Quarterly Journal of Economics*, 119(2):565–611, may 2004. ISSN 0033-5533. doi: 10.1162/0033553041382148. URL https://academic.oup.com/qje/article-lookup/doi/10.1162/0033553041382148.

Joshua Angrist and Jörn-Steffen Pischke. *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton University Press, 1st. edition, 2008.

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

Pablo Astorga, Ame Berges, and Valpy Fitzgerald. The Standard of Living in Latin America During the Twentieth Century. *Economic History Review*, 58(4):765–796, nov 2005. ISSN 0013-0117. doi: 10.1111/j.1468-0289.2005.00321.x. URL http://doi.wiley.com/10.1111/j.1468-0289.2005.00321.x.

Werner Baer and Michael Herve. Employment and Industrialization in Developing Countries. *The Quarterly Journal of Economics*, 80(1):88–107, feb 1966. ISSN 00335533. doi: 10.2307/1880581. URL http://qje.oxfordjournals.org/lookup/doi/10.2307/1879592http://qje.oxfordjournals.org/lookup/doi/10.2307/1880581.

Hector Bahamonde. Structural transformations and state institutions in latin america, 1900-2010. 2017a. URL https://github.com/hbahamonde/Negative_Link_Paper/blob/master/Bahamonde_NegativeLink.pdf.

Hector Bahamonde. Sectoral origins of income taxation: Industrial development in latin america and the case of chile (1900-2010). 2017b. URL https://github.com/hbahamonde/IncomeTaxAdoption/raw/master/Bahamonde_IncomeTaxAdoption.pdf.

Hector Bahamonde. Income taxation and state capacities in chile: measuring institutional development using historical earthquake data, 2017c. URL https://github.com/hbahamonde/Earthquake_Paper/raw/master/Bahamonde_Earthquake_Paper.pdf.

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.

Robert Bates and Donald Lien. A Note on Taxation, Development, and Representative Government. *Politics & Society*, 14(1):53–70, jan 1985. ISSN 0032-3292. doi: 10.1177/003232928501400102. URL http://pas.sagepub.com/cgi/doi/10.1177/003232928501400102.

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

Nathaniel Beck. The Methodology of Cointegration. *Political Analysis*, 4:237–247, 1992. URL http://www.jstor.org/stable/23321238.

Pablo Beramendi, Mark Dincecco, and Melissa Rogers. Intra-Elite Competition and Long-Run Fiscal Development. 2016.

Charles Bergquist. *Coffee and Conflict in Colombia, 1886-1910*. Duke University Press, 1986.

Luis Bertola and Jose Antonio Ocampo. *The Economic Development of Latin America since Independence*. Oxford University Press, 2012. URL https://global.oup.com/academic/product/the-economic-development-of-latin-america-since-independence-9780199662142?cc=us{&}lang=en{&}.

Timothy Besley, Ethan Ilzetzki, and Torsten Persson. Weak States and Steady States: The Dynamics of Fiscal Capacity. *American Economic Journal: Macroeconomics*, 5(4):205–235, oct 2013. ISSN 1945-7707. doi: 10.1257/mac.5.4.205. URL http://pubs.aeaweb.org/doi/10.1257/mac.5.4.205.

Niels-Hugh Blunch and Dorte Verner. Shared Sectoral Growth Versus the Dual Economy Model: Evidence from Cote d'Ivoire, Ghana, and Zimbabwe. *African Development Review*, 18(3):283–308, dec 2006. ISSN 1017-6772. doi: 10.1111/j.1467-8268.2006.00150.x. URL http://doi.wiley.com/10.1111/j.1467-8268.2006.00150.x.

Carles Boix. *Democracy and Redistribution*. Cambridge University Press, 2003.

Carles Boix. *Political Order and Inequality: Their Foundations and their Consequences for Human Welfare*. Cambridge Studies in Comparative Politics, 2015.

John Bowman and Michael Wallerstein. The Fall of Balmaceda and Public Finance in Chile: New Data for an Old Debate. *Journal of Interamerican Studies and World Affairs*, 24(4):421–460, 1982.

Janet Box-Steffensmeier, John Freeman, Matthew Hitt, and Jon Pevehouse. *Time Series Analysis for the Social Sciences*. Cambridge University Press, 2014.

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.

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.

Francesco Caselli. Accounting for Cross-Country Income Differences. In *Handbook of Economic Growth*, volume 1, chapter 9, pages 679–741. 2005. ISBN 9780444520418. doi: 10.1016/S1574-0684(05)01009-9.

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.

Ruth Collier and David Collier. *Shaping The Political Arena: Critical Junctures, the Labor Movement, and Regime Dynamics in Latin America*. University of Notre Dame Press, 2002.

Simon Collier. The Historiography of the "Portalian" Period (1830-1891) in Chile. *The Hispanic American Historical Review*, 57(4):660–690, 1977. URL http://www.jstor.org/stable/2513483.

Dario Debowicz and Paul Segal. Structural Change in Argentina, 1935-1960: The Role of Import Substitution and Factor Endowments. *The Journal of Economic History*, 74(01):230–258, mar 2014. ISSN 0022-0507. doi: 10.1017/S0022050714000084. URL http://www.journals.cambridge.org/abstract{_}S0022050714000084.

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

Eliseo Díaz González. La Reforma Del Impuesto Sobre La Renta Aplicado a Salarios. *Argumentos*, 26(71):127–148, 2013.

Mark Dincecco. The Rise of Effective States in Europe. *The Journal of Economic History*, 75(03):901–918, sep 2015. ISSN 0022-0507. doi: 10.1017/S002205071500114X. URL http://www.jstor.org.ezproxy2.library.arizona.edu/stable/41678585http://www.journals.cambridge.org/abstract{_}S002205071500114X.

Mark Dincecco and Ugo Troiano. Broadening the State: Policy Responses to the Introduction of the Income Tax. *NBER Working Paper*, (21373):1–25, 2015. doi: 10.3386/w21373. URL http://www.nber.org/papers/w21373.

Avinash Dixit. *Models of Dual Economy*. Models of Economic Growth: Proceedings of a Conference Held by the International Economic Assicuation at Jerusalem. 1973.

Paul Drake and Mathew McCubbins, editors. *The Origins of Liberty: Political and Economic Liberalization in the Modern World*. Princeton University Press, 1998.

Robert Durr. An Essay on Cointegration and Error Correction Models. *Political Analysis*, 4:185–228, 1992. URL http://www.jstor.org/stable/23321236.

Walter Enders. *Applied Econometric Time Series*. Wiley, 4th. edition, 2014. ISBN 8126515643. doi: 10.1198/tech.2004.s813.

Gary Fields. Dualism in the Labor Market: A Perspective on the Lewis Model After Half a Century. *The Manchester School*, 72(6):724–735, 2004. ISSN 1463-6786. doi: 10.1111/j.1467-9957.2004.00432.x. URL http://doi.wiley.com/10.1111/j.1467-9957.2004.00432.x.

Alfredo Lewin Figueroa. Historia de las Reformas Tributarias en Colombia. In *Fundamentos de la Tributación*, page 371. Universidad de los Andes Editorial Temis, Bogotá, 2008. ISBN 9789583507069.

John Freeman and Dennis Quinn. The Economic Origins of Democracy Reconsidered. *American Political Science Review*, 106(01):58–80, feb 2012. ISSN 0003-0554. doi: 10.1017/S0003055411000505. URL http://www.journals.cambridge.org/abstract{_}S0003055411000505.

Walter Galenson. Economic Development and the Sectoral Expansion of Employment. *International Labour Review*, 87(6):505–519, 1963.

Carmenza Gallo. *Taxes and state power: Political instability in Bolivia, 1900-1950*. Temple University Press, 1991.

Douglas Gollin, Stephen Parente, and Richard Rogerson. The Role of Agriculture in Development. *The American Economic Review*, 92(2):160–164, 2002. URL http://www.jstor.org/stable/3083394.

Clive Granger. Testing for Causality: A Personal Viewpoint. *Journal of Economic Dynamics and Control*, 2:329–352, 1980. doi: 10.1016/0165-1889(80)90069-X.

Timothy Hatton and Jeffrey Williamson. Integrated and Segmented Labor Markets: Thinking in Two Sectors. *The Journal of Economic History*, 51(02):413, jun 1991. ISSN 0022-0507. doi: 10.1017/S0022050700039036. URL http://www.journals.cambridge.org/abstract{_}S0022050700039036.

Yujiro Hayami and Saburo Yamada. Agricultural Productivity at the Beginning of Industrialization. In Kazushi Ohkawa, Bruce Johnston, and Hiromitsu Kaneda, editors, *Agriculture and Economic Growth: Japan's Experience*, pages 105–144. Princeton University Press and Tokyo University Press, Princeton, NJ and Tokyo, 1969.

Michael Hechter and William Brustein. Regional Modes of Production and Patterns of State Formation in Western Europe. *American Journal of Sociology*, 85(5):1061–1094, mar 1980. ISSN 0002-9602. doi: 10.1086/227125. URL http://www.journals.uchicago.edu/doi/10.1086/227125.

Albert Hirschman. *Exit, Voice, and Loyalty: Responses to Decline in Firms, Organizations, and States*. Harvard University Press, 1970.

Roy Hora. Landowning Bourgeoisie or Business Bourgeoisie? On the Peculiarities of the Argentine Economic Elite, 1880-1945. *Journal of Latin American Studies*, 34(03):587–623, 2002. ISSN 0022-216X. doi: 10.1017/S0022216X02006491. URL http://www.journals.cambridge.org/abstract{_}S0022216X02006491.

Instituto Centroamericano de Estudios Fiscales. Historia de la Tributacion en Guatemala. Technical report, Instituto Centroamericano de Estudios Fiscales, 2007.

Soren Johansen. Statistical Analysis of Cointegration Vectors. *Journal of Economic Dynamics and Control*, 12(2-3):231–254, 1988. ISSN 01651889. doi: 10.1016/0165-1889(88)90041-3.

Noel Johnson and Mark Koyama. States and Economic Growth: Capacity and Constraints. *Explorations in Economic History*, dec 2016. ISSN 00144983. doi: 10.1016/j.eeh.2016.11.002. URL http://linkinghub.elsevier.com/retrieve/pii/S0014498316301966.

Noel Johnson and Mark Koyama. States and Economic Growth: Capacity and Constraints. *Explorations in Economic History*, 64(December 2015):1–20, apr 2017. ISSN 00144983. doi: 10.1016/j.eeh.2016.11.002. URL http://linkinghub.elsevier.com/retrieve/pii/S0014498316301966.

Bruce Johnston. Agricultural Productivity and Economic Development in Japan. *Journal of Political Economy*, 59(6):498–513, 1951. URL http://www.jstor.org/stable/1830239.

Bruce Johnston and John Mellor. The Role of Agriculture in Economic Development. *The American Economic Review*, 51(4):566–593, 1961. URL http://www.jstor.org/stable/1812786.

Bruce Johnston and Soren Nielsen. Agricultural and Structural Transformation in a Developing Economy. *Economic Development and Cultural Change*, 14(3):279–301, 1966. URL http://www.jstor.org/stable/1152435.

Dale Jorgenson. The Development of a Dual Economy. *The Economic Journal*, 71(282):309–334, 1961. URL http://www.jstor.org/stable/2228770.

Dale Jorgenson. Surplus Agricultural Labour and the Development of a Dual Economy. *Oxford Economic Papers, New Series*, 19(3):288–312, 1967. URL http://www.jstor.org/stable/2662328.

Sunil Kanwar. Does the Dog Wag the Tail or the Tail the Dog? Cointegration of Indian Agriculture with Nonagriculture. *Journal of Policy Modeling*, 22(5):533–556, sep 2000. ISSN 01618938. doi: 10.1016/S0161-8938(97)00161-0. URL http://linkinghub.elsevier.com/retrieve/pii/S0161893897001610.

Allen Kelley, Jeffrey Williamson, and Russell Cheetham. *Dualistic Economic Development: Theory and History*. University of Chicago Press, 1972.

Henry Kirsch. *Industrial Development in a Traditional Society: The Conflict of Entrepreneurship and Modernization in Chile*. The University Presses of Florida, 1977.

Stephen Krasner. *Structural Conflict: The Third World Against Global Liberalism*. University of California Press, 1985.

Marcus Kurtz. The Social Foundations of Institutional Order: Reconsidering War and the "Resource Curse" in Third World State Building. *Politics & Society*, 37(4):479–520, 2009. ISSN 0032-3292. doi: 10.1177/0032329209349223. URL http://pas.sagepub.com/cgi/doi/10.1177/0032329209349223.

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

Simon Kuznets. Economic Growth and the Contribution of Agriculture: Notes on Measurement. *1961 Conference, August 19-30, 1961, Cuernavaca, Morelos, Mexico*, 1961. URL http://ideas.repec.org/p/ags/iaae61/209625.html.

Simon Kuznets. *Modern Economic Growth: Rate, Structure and Spread*. Yale University Press, 1967.

John Landon-Lane and Peter Robertson. Accumulation and Productivity Growth in Industrializing Economies. 2003. URL http://econpapers.repec.org/RePEc:rut:rutres:200305.

Harvey Leibenstein. The Theory of Underemployment in Backward Economies. *Journal of Political Economy*, 65(2):91–103, 1957a. URL http://www.jstor.org/stable/1827366.

Harvey Leibenstein. *Economic Backwardness and Economic Growth*. John Wiley and Sons, 1st. edition, 1957b.

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

Arthur Lewis. Economic Development with Unlimited Supplies of Labour. *The Manchester School*, 22(2):139–191, may 1954. ISSN 1463-6786. doi: 10.1111/j.1467-9957.1954.tb00021.x. URL http://doi.wiley.com/10.1111/j.1467-9957.1954.tb00021.x.

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

Peter Lindert and Jeffrey Williamson. Growth, Equality, and History. *Explorations in Economic History*, 22(4):341–377, 1985. ISSN 00144983. doi: 10.1016/0014-4983(85)90001-4.

Humberto Llavador and Robert Oxoby. Partisan Competition, Growth, and the Franchise. *The Quarterly Journal of Economics*, 120(3):1155–1189, aug 2005. ISSN 0033-5533. doi: 10.1093/qje/120.3.1155. URL http://www.jstor.org/stable/25098765{%}0Ahttp://about.jstor.org/termshttp://qje.oxfordjournals.org/cgi/doi/10.1093/qje/120.3.1155.

Helmut Lütkepohl. *New Introduction to Multiple Time Series Analysis*. Springer, Berlin, 2005. ISBN 3540262393.

Helmut Lutkepohl. *New Introduction to Multiple Time Series Analysis*. Springer, 2006. ISBN 9783540262398.

Helmut Lütkepohl and Markus Krätzig. *Applied Time Series Econometrics*. Cambridge University Press, 2004. ISBN 9780521839198. doi: 10.1017/CBO9780511606885. URL http://books.google.com/books?hl=en{&}lr={&}id=xe7NDY8leWwC{&}oi=fnd{&}pg=PP1{&}dq=Applied+Time+series+Econometrics{&}ots={_}88dV4qX5p{&}sig=N2ZBeAsVOi25ThJjVf7b2QSRXCA.

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.

Isabela Mares and Didac Queralt. The Non-Democratic Origins of Income Taxation. *Comparative Political Studies*, 48(14):1974–2009, dec 2015. ISSN 0010-4140. doi: 10.1177/0010414015592646. URL http://cps.sagepub.com/cgi/doi/10.1177/0010414015592646.

Isaac Martin and Monica Prasad. Taxes and Fiscal Sociology. *Annual Review of Sociology*, 40(1):331–345, jul 2014. ISSN 0360-0572. doi: 10.1146/annurev-soc-071913-043229. URL http://www.annualreviews.org/doi/10.1146/annurev-soc-071913-043229.

Ashok Mathur. The Interface of Agricultural and Industrial Growth in the Development Process: Some Facets of the Indian Experience. *Development and Change*, 21(2):247–280, apr 1990. ISSN 0012155X. doi: 10.1111/j.1467-7660.1990.tb00377.x. URL http://search.proquest.com.ezproxy.library.ubc.ca/docview/1500798747?accountid=14656http://gw2jh3xr2c.search.serialssolutions.com/?ctx{_}ver=Z39.88-2004{&}ctx{_}enc=info:ofi/enc:UTF-8{&}rfr{_}id=info:sid/ProQ:envabstractsmodule{&}rft{_}val{_}fmt=info:ofi/fmt:kev:mtx:jou.

Kiminori Matsuyama. Increasing Returns, Industrialization, and Indeterminacy of Equilibrium. *The Quarterly Journal of Economics*, 106(2):617–650, 1991. URL http://www.jstor.org/stable/2937949.

John McArthur and Gordon McCord. Fertilizing Growth: Agricultural inputs and their effects in economic development. *Journal of Development Economics*, (77), mar 2017. ISSN 03043878. doi: 10.1016/j.jdeveco.2017.02.007. URL http://dx.doi.org/10.1016/j.jdeveco.2017.02.007http://linkinghub.elsevier.com/retrieve/pii/S0304387817300172.

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

Barrington Moore. *Social Origins of Dictatorship and Democracy: Lord and Peasant in the Making of the Modern World*. Beacon Press, September 1966.

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.

William Nicholls. Industrialization, Factor Markets, and Agricultural Development. *Journal of Political Economy*, 69(4):319–340, 1961. URL http://www.jstor.org/stable/1828643.

Douglass North. *Institutions, Institutional Change and Economic Performance*. Cambridge University Press, 1990.

Ragnar Nurkse. *Problems of Capital Formation in Underdeveloped Countries*. Basil Blackwell, 2nd. edition, 1953.

Ragnar Nurske. *Equilibrium and growth in the world economy: Economic essays*. Harvard University Press, 1961.

Kazushi Ohkawa. Balanced Growth and the Problem of Agriculture - With Special Reference to Asian Peasant Economy. *Hitotsubashi Journal of Economics*, 2(1):13–25, 1961. URL http://doi.org/10.15057/8120.

Gustav Ranis and John Fei. *Development of the Labor Surplus Economy*. The Economic Growth Center, Yale University. Richard D.Irwin, Inc, 1964.

James Robinson. Economic Development and Democracy. *Annual Review of Political Science*, 9(1):503–527, jun 2006. ISSN 1094-2939. doi: 10.1146/annurev.polisci.9.092704.171256. URL http://www.annualreviews.org/doi/abs/10.1146/annurev.polisci.9.092704.171256.

Ryan Saylor. *State Building in Boom Times: Commodities and Coalitions in Latin America and Africa*. Oxford University Press, 2014.

Marcelo Segall. *Desarrollo del Capitalismo en Chile: Cinco Ensayos Dialécticos*. Santiago, Chile, del pacífi edition, 1953.

Amartya Sen. Peasants and Dualism with or without Surplus Labor. *The Journal of Political Economy*, 74(5):425–450, 1966.

Raúl Serrano and Vicente Pinilla. The Declining Role of Latin America in Global Agricultural Trade, 1963-2000. *Journal of Latin American Studies*, 48(01):115–146, feb 2016. ISSN 0022-216X. doi: 10.1017/S0022216X15001236. URL http://www.journals.cambridge.org/abstract{_}S0022216X15001236.

Peter Skott and Mehrene Larudee. Uneven Development and the Liberalisation of Trade and Capital Flows: The Case of Mexico. *Cambridge Journal of Economics*, 22(3):277–295, 1998. ISSN 0309166X.

Adam Smith. *An Inquiry into the Nature and Causes of the Wealth of Nations*. Methuen & Co., Ltd., 5th. edition, 1904.

Hillel Soifer. *State Building in Latin America*. 2015. ISBN 9781316257289.

David Stasavage. *Public Debt and the Birth of the Democratic State: France and Great Britain 1688-1789*. Cambridge University Press, 2008.

James Stock and Mark Watson. Vector Autoregressions. *The Journal of Economic Perspectives*, 15 (4):101–115, 2001. URL http://www.jstor.org/stable/2696519.

Joseph Strayer. *On the Medieval Origins of the Modern State*. Princeton University Press, 2005.

Paul Streeten. Unbalanced Growth. *Oxford Economic Papers, New Series*, 11(2):167–190, 1959. URL http://www.jstor.org/stable/2662122.

Vito Tani. Personal Income Taxation in Latin America: Obstacles and Possibilities. *National Tax Journal*, 19(2):156–162, 1966.

Jonathan Temple and Ludger Wößmann. Dualism and Cross-Country Growth Regressions. *Journal of Economic Growth*, 11(3):187–228, nov 2006. ISSN 1381-4338. doi: 10.1007/s10887-006-9003-x. URL http://link.springer.com/10.1007/s10887-006-9003-x.

Anthony Thirlwall. A General Model of Growth and Development on Kaldorian Lines. *Oxford Economic Papers*, 38(2):199–219, 1986.

Richard Tiffin and P.J. Dawson. Shock Persistence in a Dual Economy Model of India. *Journal of Development Studies*, 40(1):32–47, oct 2003. ISSN 0022-0388. doi: 10.1080/0022038041233129365 7. URL http://www.tandfonline.com/doi/abs/10.1080/00220380412331293657.

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

Victor Uribe-Uran. *State and Society in Spanish America during the Age of Revolution*. Rowman & Littlefield Publishers, 2001.

Claudio Veliz. La Mesa de Tres Patas. *Desarrollo Economico*, 3(1/2 America Latina 1):231–247, 1963.

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