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FORMACIÓN DEL ESTADO, ESTRUCTURAS IMPOSITIVAS Y ABUNDANCIA  
MINERAL EN CHILE Y PERU, 1850-1930S

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RESUMEN

Esta investigación estudia el impacto de la abundancia de recursos naturales sobre la formación del Estado, al analizar la respuesta de las estructuras impositivas ante períodos de boom en las primeras etapas de la república chilena y peruana, 1850s-1930s. Esta investigación busca determinar si estos iniciales períodos de boom tuvieron un impacto sobre la estructura de ingresos fiscales, y finalmente, sobre el desarrollo estatal.

Palabras clave: Estado, estructuras impositivas, abundancia de recursos minerales, Chile, Perú

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ABSTRACT

The paper assesses the impact of natural resource abundance on state formation by looking at how tax structures responded to booming periods in the early ages of the Chilean and Peruvian republic, 1850-1930s. The paper inquires whether these early booming periods impacted on the structure of fiscal revenues, and finally, on the development of the state.

Keywords: State, tax structures, mineral abundance, Chile, Peru

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# STATE FORMATION, TAX STRUCTURES AND MINERAL ABUNDANCE CHILE AND PERU, 1850-1930s

**Maritza Paredes<sup>1</sup>**

## **Introduction**

The observed repetitive failure of states in governing their mineral wealth is striking. Most developing countries show very limited capacity to manage the macroeconomic challenges of mineral booms, retain resource rents, and most importantly, invest those finite rents on new forms of capital. It is especially disappointing that so little progress has been made in building policies and institutions to carry out the last assignment of the list: the transformation of non-renewable, “natural sources” of economic wealth into further increasing “man-made capital” (roads, knowledge, technology, and so on). In fact, to invest long-term under resource-boom conditions is not an easy policy enterprise. It requires the development of significant state capacity. Unfortunately, the political inclinations for long-term planning and state-capacity building are usually undermined by mining bonanzas.

This paper inquires how natural resource abundance shapes state formation by looking at how fiscal structures in the newborn republics of Chile and Peru responded to consecutive cycles of resource abundance. The relevance of this historical analysis resides in contributing to the understanding of how prolonged dependence on mineral commodities matters for the divergence of state-formation trajectories. The paper assesses, in particular, how two consecutive boom-and-bust cycles in the long nineteenth century (1800s-1929) interacted with the development of internal tax structures, and whether the resulting state-society relationships helped to strengthen the capacity of the state.

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<sup>1</sup>Maritza Paredes is a doctoral candidate of the University of Oxford and member of St Antony’s College. This paper draws on preliminary results of her dissertation forthcoming in 2011, “Shaping States in the Andes. A Comparative Historical Analysis of Mineral States, 1850s-1930s: Chile, Peru and Bolivia.”

There is a strong tradition in the political and institutional literature that argues that fiscal dependence on mineral rents and the associated development of rent-seeking behaviour impedes the emergence of good governance and state capacity. The thesis is that the state becomes a “honey pot that lends itself to state capture to the detriment of state’s efficiency, representative capacity and sustainability” (Karl, 2007: 260). Chile and Peru present two contrasting cases in this regard. By the 1930s, mineral-abundant Chile had already a well established representative system dominated by the intermediation of political parties; moreover, Chile’s state infrastructure had reached a significant development in size and scope. Meanwhile, mineral-abundant Peru had been struggling with unstable political regimes, dominated by the figure of authoritarian leaders rather than institutionalized parties, and the state showed a poor infrastructure.

The empirical focus of this paper is two economic cycles of mineral expansion after independence. The formation of the modern state in Chile and Peru occurred in close interaction with cycles of global economic growth that provided the stimulus for the development of booming extractive industries in the nineteenth and early twenty century: an early cycle of copper in Chile (50-70% of total exports in 1840s-80) and of guano in Peru (60-80% of total exports in 1840s-80), followed by a cycle of nitrates in Chile (80-90% of total exports in 1890-1930) and of copper and to a less extend oil in Peru (30-50% of total exports in 1895-1930).

These cycles occurred in parallel with an intense process of state building. After the collapse of the colonial rule and the inherited political ‘disorder’, the expansion of state organization in Latin American occurred largely as a result of rulers’ efforts to maintain control over people and natural resources in the territory. State-makers in Peru and Chile faced different forms of political pressures, given their distinct socio-economic and territorial challenges. The more severe geographic disintegration, the heterogeneity of its population, and the colonial legacies of exploitation of indigenous groups made Peru more prone than Chile to suffer instances of disorder (Oszlak 1981). However, in spite of the burdensome colonial legacies, the two states reached significant stability and expanded when rulers were able to guarantee enough resources to sustain their power.

For both countries, the making of a new state required both the re-concentration of means of coercion and capital to some, and the deprivation of access to these means to others. Yet, the attempts of rulers to reallocate power were not immediately successful. Once the Spanish were gone, no single group was able to accumulate enough resources to achieve a hegemonic power.<sup>2</sup> Indeed, long periods of dispute between political factions continued for decades: twenty eight governments in twenty years in Chile between 1810 and 1830, and twenty seven governments in twenty three years in Peru between 1821 and 1845. Thus, a common challenge was to build some sort of stable state authority. This paper analyzes the impact of mining-led growth in the overall political development of Chile and Peru at an early period, showing that the sequence of the cycles, therefore their (perverse) effects, was different across these countries. The quality of the sequence brought long-lasting consequences for the building of state capacities.

The paper reaches the conclusion that the fiscal-centered approach of the resource-curse literature does not explain state-formation divergence between Chile and Peru. Windfall rents, as well as foreign debt that joined them, are not a sufficient cause of state underdevelopment. Mineral bonanza took place in both cases with different results. The paper claims the need to go beyond the fiscal-centered approach and to bring timing and sequencing into the analysis. Since an early date, state-builders in both countries had to confront different settings of elite politics bequeathed by the sequencing of mining dependence. Cycles of mining, with all the characteristics that fulfil the resource curse hypothesis, were not occurring simultaneously in these countries. Problems, such as a sudden and sharp export growth, overwhelmingly concentrated on a single resource; or unusual high levels of foreign capital intervention; or extreme state dependence on mining rents, did not take place simultaneously in both countries at the onset of their political transformation. Economic and political dependence in Peru was compounded from the onset by these perverse characteristics while in Chile the economy only became highly concentrated and dependent on mining at the end of the nineteenth century. Chile's mining bonanza at the onset was accompanied by the development of an export

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<sup>2</sup> For a detailed revision of the political economy in Peru after Independence see Gootenberg 1989, and Collier (1985) for Chile.

bonanza in agriculture, with both sectors together providing an exceptional stimulus for Chile's domestic economy and the emergence of strong and diverse elites. This was not the case in Peru.

The paper suggests that the shaping of this sequencing enabled different settings for elite politics. Political rulers and oligarchic elites, which disliked to pay taxes, together looked to revenue from export commodities that would allow them to maintain 'its' rentier status and not challenge their domestic status quo. But, as the paper shows, the sequence of earlier boom cycles carried different characteristics, shaping divergent settings for elite politics. More historical research is required to understand how elements, such as the size of the elites, their internal coherence and stimulus for negotiation enabled better state outcomes in Chile than in Peru.<sup>3</sup> In particular, how the goals and interest of political actors vis a vis the state gradually diverged in both countries in a way that could not have been predicted by the structure of revenue extraction alone. Not only rulers' impulse for extracting revenues can enable the construction of the state, but also the characteristics and impulses of the elites that resulted from divergent earlier economic dynamics. More study is required on whether this sequence helped in Chile, unlike Peru, diverse and equally strong elites to be institutionally involved in the process of state building, enabling them to negotiate terms with each other and with rulers in order to expand a more 'rational-bureaucratic' centralization; either to achieve their material or ideological aims, or to avoid the general cost of political instability. Elite politics becomes a main element to continuing investigating to understand the different resulting outcomes in Chile and Peru.

The structure of the paper is organized as follows. Section one develops a brief presentation of the nature of the institutional resource curse and the predominant approaches in the social sciences to explain this problem. Section two assesses the early escape of Chile of this 'institutional curse'. Section three turns to explain the divergent case of Peru and section four concludes with the lessons provided by this historical examination to contemporary challenges.

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<sup>3</sup> These questions are addressed by Paredes' dissertation, forthcoming in 2011.

## **1. The nature of the “institutional recourse curse”**

Mineral resource-rich economies are those with an important contribution from minerals and hydrocarbons to exports and state revenues. They tend to fall into what has become well-known as the ‘resource curse’. The resource curse concept was popularized in the economic field by Sachs and Warner (1995, 2001)’s findings of poor growth performance of resource-based economies. Others, such as Gelb et al (1988), Auty (1993), Auty (2001a), Sala-i-Martin and Subramain (2003) and Ross (2003) produced similar results. Lederman and Maloney (2007) is a recent reply to all these literature. Moreover, others researchers have shown that the resource curse problem goes beyond the economic growth problem: resource abundant countries are less likely to engage in industrial manufacture (Wood and Berge 1997), tend to suffer corruption (Leite and Weidemann 1999), are predisposed to increasing economic and social divisions and weakened institutional capacity (Isham et al 2001), and are associated with bad outcomes in terms of poverty and human development levels (Ross 2003a, Bulte et al 2005). Finally, there is a growing literature explaining the relation between mineral abundance and violence and civil wars in Africa, often linked to deep horizontal inequalities (Ross 2004, Collier and Hoeffler 2005, and Fearon 2005).

In the field of development economics, there is also a canonical literature that offers explanations of the curse. Resource-rich economies are not only likely to suffer cycles of expansion and depression because of the volatility of commodity prices in the international market, but boom years tend to impede the diversification that will be found to be necessary when external conditions change --the Dutch disease-- and as a consequence, the sustainability of growth is undermined in the long term. In the case of minerals, sustainability is also affected by problems caused by the depletion of non-renewable resources and the contamination of other resources, such as land and water. Extractive industries, such as mining and oil extraction, have been accused of providing little ‘returned value’ (Hirschman 1958). Salaries, expenses, infrastructure tend to be scarce in a context of a high capital intensive technology industry and foreign ownership. Therefore, the links of these industries to the rest of the economy through demand effects

are few and the links through infrastructure, when they exist, tend to be concentrated in limited geographical areas.

These conditions lead to the wider effects of extractive industries depending largely on the indirect links of state redistribution: fiscal institutions and transferring policies have been historically mining sector's principal domestic 'economic stimuli'. Nonetheless, few of these rich-mineral countries have succeeded in using their mining's profits in the development of more sustainable and 'value-adding' industries, which will mitigate their dependence on mining (and its fluctuations) in the long term. The relative failure or success of states in taking advantage of their mining windfalls and transforming them into more broad-based development is the most puzzling issue of the resource curse, and it is largely a political problem. Often, large-N studies bring out, as underlying elements of this political failure, variables like 'institutional quality' and 'state competence', but leave them as unhelpful 'black boxes'. The form in which variables are frequently tested in isolation from each other and usually in static fashion does not help the understanding of the institutional mechanisms behind the problem. Nonetheless, empirical studies of these problems are not many, there is in the literature different hypothesis and approaches to this problem. To these explanations, we now turn.

### *Cultural explanations*

Cultural explanations have been the oldest arguments used to explain resource abundance. Ross (1999) shows that these notions have a long history and originate in the work of scholars like Machiavelli, Montesquieu, Smith and Stuart Mill. Cultural explanations assume that resource abundance deeply shapes the 'working' culture of a society and of its leaders. Ross (1999) illustrates very well this argument with a quote from Jean Bodin in the Six Books of a Commonwealth: "men of a fat and fertile soil are most commonly effeminate and cowards; whereas contrarywise a barren country makes men temperate by necessity and by consequence careful, vigilant and industrious" (Tooley eds. 1967: p.565).



More recently, scholars have argued that resource abundance produces in policy makers ‘over-optimism’ concerning future mineral prices and ‘short-sighted’ euphoria related to expenditure (Auty 1993). This is also reproduced among economic elites who tend to develop a ‘get-rich quick’ mentality (Nurske 1958, Watkins 1963). Then, the problem is that resource rents induce ‘wishful’ thinking in leaders which subsequently imposes high costs on society because of the resulting incautious attitude towards maintaining the competitiveness of the mining sector and caring about the sustainability of resource allocation.

Yet, cultural explanations fall short. First, they cannot be empirically sustained. Second, the ‘mood’ approach sidesteps the fundamental question: why these behaviours emerged in some cases and not in others and, within the history of each case, why policy makers have different ‘dispositions’ in different periods. In some cases, the psychological or cultural effects of resource abundance may have some degree of explanatory power, but this argument fails to answer when, why and where over-optimism occurs.

#### *Utilitarian rent-seeking explanations*

Utilitarian rent-seeking explanations challenge the primordial thesis of behavioural or cultural explanations that feverish feelings produced by resource abundance as such motivate a myopic sloth in state policy. Utilitarian rent-seeking explanations start by assuming that actors, including those within the state, have fixed preferences and are rational utility maximizers. So, it is not an ‘allure’ of abundance that induces them to implement mistaken or inefficient policies; rather, these are goal oriented actions.

On one hand, the argument is that resource booms enhance the political leverage of non-state actors who favour growth impeding policies. For instance, Urrutia (1988) and Broad (1995) have suggested that natural resource abundance strengthens well-connected business groups who increase their pressure on the state to pursue economic policies that serve their interests rather than the common good. Using Latin America as an example, others have argued that narrow well-off groups, including mine workers, which have tended to have relatively higher wages than the rest of workers, have prevented the

development of an externally competitive industrial sector (Mahon 1992; Auty 1995). Abundance increases the rewards that these groups can gain from rent-seeking, so they have growing incentives to engage in this behaviour (Torvik 2002). On the other hand, these explanations consider the state as a site of autonomous agency, not reducible to the demands or preferences of a particular social group. Rulers and political elites are seen as ‘revenue maximizers’ (Levi 1988). In this case the argument is that resource abundance generates political incentives that lead to the curse (Ascher 1999; Robinson and et al 2006; and Torvik 2002). According to these arguments, politicians tend to over-extract natural resources relative to the ‘efficient’ extraction path, because they discount too much the possibility of losing power in the future. In addition, resource booms raise the value of being in power and provide politicians with resources they can use to influence the outcome of elections or engage in patronage and clientelistic politics. Therefore, these actions increase resource misallocation. While these consequences depend significantly on constraining institutions, these approaches maintain that precisely because politicians have power, they tend to avoid reforms.

Even though the scholars reviewed have succeeded in articulating a provocative set of arguments, utilitarian rent-seeking explanations share one general problem regardless of their particular line of argument. They tend to shy away from the question of how rent-seeking behaviour has been built: understanding the historical conditions in which natural abundance creates rent-seeking behaviour is less relevant to these studies than aiming to model and predict the impacts of rent-seeking in particular outcomes. In short, utilitarian rent-seeking scholars imply that both interest groups in society and politicians within the state are a priori ‘predatory’. The rent-seeking assumption remains largely unexplained and we get little insight as to how agents arrive at their utility functions, why agents occasionally act in ways that appear detrimental to their material interest, and why leaders may pursue legitimacy-enhancing developmental aims, as appears to be the case in Botswana, Chile or Malaysia, for instance. In these countries, the state has been able to engage in relatively strong redistribution schemes; even in the context of authoritarian state leadership (Chile) or strong business-elite (Malaysia).

### *Structural explanations*

Structural approaches focus on the delayed process of modernization and industrialization. Based on the studies of Inglehart, Isham et al (2001) argue that states depending on mineral revenues will resist industrialization because it means creating other competing sources of power, such as urban labour, urban middle-classes, urban industrialists, among others; therefore, these countries are not able to make the transition from agriculture to industrialization and to construct 'democratic polities' along the way. In addition, mineral dependency will obstruct the social pressures that come with industrialization, such as workers unions, because budget revenues are derived from a small set of workers that use sophisticated techniques brought from abroad. Neither state economic need nor the workers themselves generate pressures for more education, labour rights or political influence. With time, citizens are less able to effectively express their collective interest.

According to this literature these types of societies are likely to be dominated by political elites of one type or another (left to right) that have immense power to demobilize the rest of society. In the case of the Andean countries there is a tendency to highlight the material or structural conditions of poverty and inequality of indigenous people in Peru and Bolivia as the major difference with Chile. Yet, looking at structural conditions alone cannot explain how, unlike Peru, another similar country, Bolivia has been able to articulate much more coherent demands and resistance to the distributive patterns in place. The key problem with these explanations is that these structural conditions are constant and they coincide both with a fragmented and weak mobilized society, Peru, and with a more articulated and strongly mobilized society, for instance Bolivia. We believe that the 'demobilization' factor cannot by itself explain the exclusionary patterns because it does not work equally for instance in Bolivia and Peru. Furthermore, it is not the absence of indigenous people which seems to make the difference in Chile, as indigenous were always present, but the type of control that the state exercised over them. However, this is not an immutable path. In recent times, the Mapuches in Chile, despite being far fewer in number, have generated a more effective and dynamic organization than the

indigenous in Peru precisely toward on their rights and the terms of redistribution of natural resources of the country.

*Historical explanations and the “Paradox of Plenty”*

Unlike the three previous approaches, which are highly deterministic, and unlike utilitarian rent-seeking views, which understand institutions and policies as the reflection of the preferences of competing interest groups or competing politicians whose primary goals are to retain power, historical explanations focus on the origins of institutions, the processes and circumstances that allowed for their creation, and on how institutions influence different spectrums of decision making over time. These explanations have a more interactive and ‘eclectic’ theoretical framework and I find them suggestive. Nonetheless, they still compose a relatively small set in mainstream research.

Terry Karl is a pioneer and probably the most prominent author of the institutional historical approach to the resource curse. She argues that when a high dependence on the extraction of point-sources like minerals grows at the same time as the formation of the modern state, the political economy of the exploitation of these resources is likely to distort state institutions. It is often the case that these institutions are precisely those crucial for the building of the state’s efficiency, representative capacity, and ability to manage and counterbalance the economic aspects of the resource curse in a sustainable way (Karl 2007). Karl, along with all scholars thinking about the resource curse, draws on the literature on state- making in Europe that emphasizes the role of warfare, state taxation and the need for state-society negotiations as important forces for state formation (Tilly 1990, Ertman 1996). In the case of resource-rich countries, the literature has argued that when the development of the modern state coincides with mineral abundance, and revenues can be easily extracted, the state has less pressure to tax the rest of the population. Thus, without the pressure of taxation, a state has less need to develop mechanisms for control of its citizens; and, at the same time, citizens have fewer reasons to demand the accountability that might ensure effective redistribution. Mining revenues increase the non-accountable power of the state. State leaders tend to control the population via the buying off of critics, providing selective benefits or infrastructural

projects, patronizing, or directly pursuing repression and violence (Dunning 2008; Karl 1997, Ross 2003, 1999, Rosser 2006). They do so in caudillo-fashion rather than through institutional mechanisms, such as a representative party system. All these hypotheses are extremely suggestive, but with the exception of Karl (1997) Gallo (1991) and Dunning (2008) studying the case of Venezuela and Bolivia, little empirical historical exploration of these hypotheses in other countries exists. These hypotheses are suggestive, but require empirical exploration. If not, theories run the risk of being taken as universal laws, rather than likely-to-occur processes and outcomes under particular sets of conditions.

## **2. Chile: Escaping the Institutional Curse**

Having acquired its independence very early in 1810, Chile was one of the first countries to control the ‘caudillo’ struggles. It has been widely argued that the size and the demographic concentration of Chile in the Central Valley facilitated the cohesion and triumph of a powerful elite tripartite coalition composed by pro-clerical conservatives, the followers of the exiled O'Higgins, and a group of merchants (Collier and Sater, 2004).<sup>4</sup> This group expanded and consolidated its political influence during this cycle. The new political establishment was conservative and totalitarian, mainly concerned with bringing order to the country at any cost, and therefore, political representation was restricted to very few. Likewise, the incipient militarism of the 1820s was limited by a radical ‘cleaning’ of liberal officers and by a comprehensive reorganization of the country's militias as a counterbalancing power to the army.<sup>5</sup>

Political reorganization occurred together with a cycle of gradual but steady economic prosperity. In the early 1840s, copper exports were stimulated by a sustained incremental

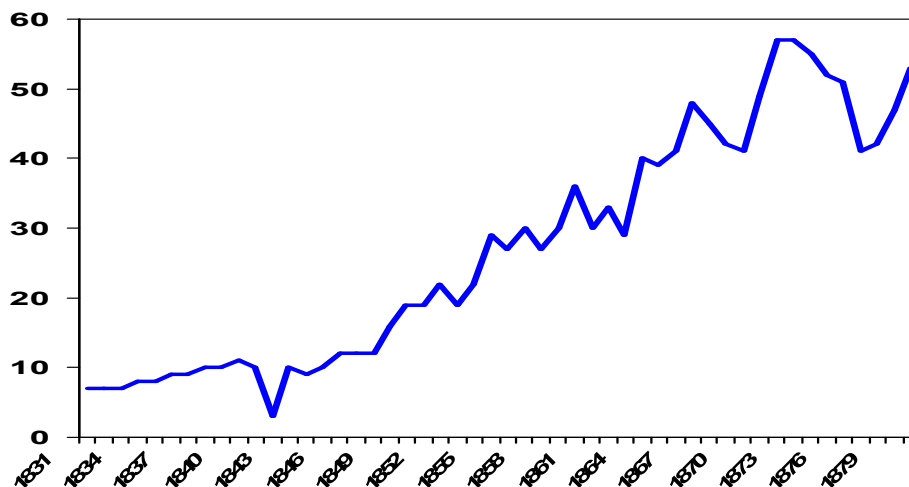
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<sup>4</sup> Chile was geographically circumscribed to no more than 700 miles separating the northern limit of settlement from the Araucanian Frontier along the Bio Bio River and with the great majority of the population concentrated in the northern Central Valley. The settlements farther south, around Valdivia and the island of Chiloe, were unimportant appendages of the new republic, as was the penal colony established on the Magella Straits after 1843. All constitutions from 1822 onward had mentioned Cape Horn as the southern extremity of the country.

<sup>5</sup> By the middle of 1831 the National Guard numbered 25,000 men. It more than doubled in size later on and was a very credible counterweight to the regular army, whose peacetime establishment rarely went much above 3,000 (Collier and Sater 2004).

increase in international prices due to technological changes in the railway and steamship industries in Europe that caused demand for larger amounts of this metal. By the mid-nineteenth century, Chile had begun a rapid expansion of exports, based primarily in copper, but also in agricultural exports, such as wheat and barley. Graph 1 shows Chile's steady and progressive five-fold expansion in the period from 1840 to the mid 1870s (the peak of this cycle). Metals represented between 50 to 70 percent of total exports for most of the cycle (see table 1 in the Annex). Copper's share of total exports jumped from 60 to 67 percent and reached a peak in 1860, at 74 percent, and for the next decade, copper exports averaged around 60 percent. But crops played an important alternating role. Between 1850 and 1880, the quantity of grains exported tripled from half a million to about one million and a half metric quintals (Cariola and Sunkel 1985). Wheat and barley responded rapidly to the opening markets in California and Australia up to the mid-1850s, but the high prices in the international market and the progress in maritime transportation enable Chilean farmers to continue exporting to the European market for ten years more --or after the mid-1860s-, representing about one third of Chilean exports through the period.<sup>6</sup>

Graph 1  
Chile's Export Quantum Index, 1830-80  
(1900 = 100)



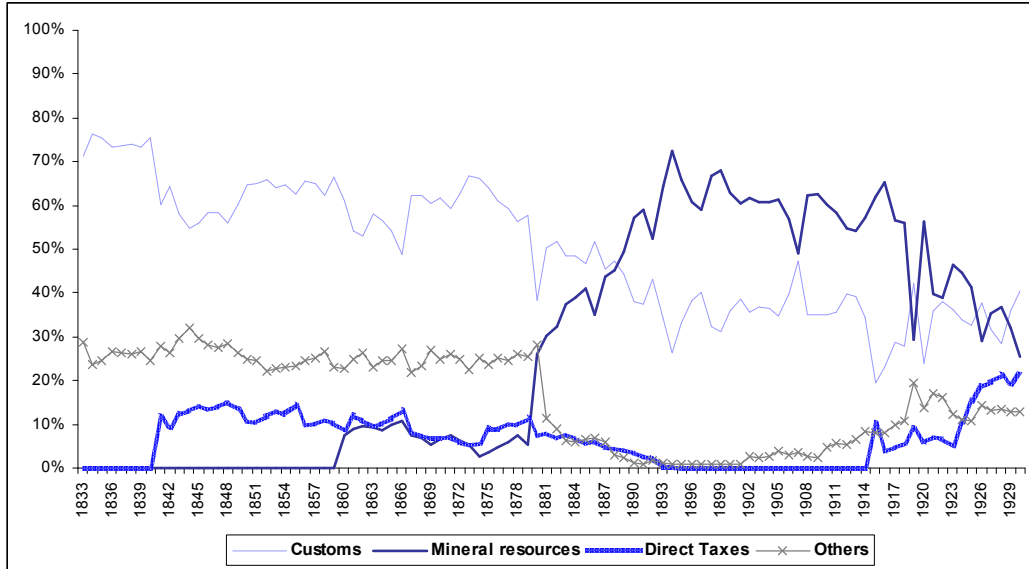
<sup>6</sup> Export crops averaged close to 40 from mid-1860s to mid-1870s Braun et al 2000: table 187

*Sources:* Total exports in current dollars of each year, are provided by Braun et al 1998, table 5.4, p.155. The quantum volume index of Chile was constructed with this information deflated by the WPI of the US and for the base year 1900.

In Chile, the type of mining that developed in the nineteenth century was exceptional. Its stimulus fed through to the local economy by several different channels leading to a lively and diversified economy, in which more traditional elites adjusted to new productive possibilities in more than one region (Ortega 2005). Both agriculture and mining enabled the development of a series of manufacturing activities involving the processing and transportation of exports. The demand of processed flour led to a dynamic development of flour-milling until the end of the 1860s (Palma 1974). A similar situation occurred in mining, but with a larger impact. The formation of foundries in the North of the country was motivated by the need to reduce the cost of transportation of copper, when the prices of shipping were still high and railways were still underdeveloped (Palma 1974: 122-23). Foundries consumed significant amounts of coal brought from the other side of the country, the South. The need for coal and the transportation of agricultural exports from the central valley to Valparaiso stimulated the rapid expansion of railways across the territory. The resulting internal demand, although modest in a still dependent economy, was not a trivial development.

The Chilean state benefited from increasing export earnings. State income doubled between 1840 and the mid-1850s from 2.3 to 5.4 million, and doubled again between 1855 and 1879 reaching 10.2 million in that year (Hummud 1956). As a result, public administration expanded about ten times between 1845 and 1875, from 1.1 million to 10.5 million. The estimated number of public employees rose from the mid-1840s to the late-1870s from about one to three thousand (Hummud 1956). Graph 2 makes it clear that in Chile, the bulk of the taxes in the first cycle came from customs. Internal taxes, particularly direct taxes, were difficult to impose and extremely unpopular. The agricultural sector used its political power to resist the imposition of major export taxes; miners were less successful and had to pay.

Graph 2  
Composition of Chilean Tax Revenue (1833-1930)



*Source:* Wagner et al (2000) offers data from 1833 to 1830 in current Chilean pesos. p 234-345. *Notes:* Direct taxes include Diezmos and Catastro from 1840-1860, several property taxes that were imposed since 1855 and were disappearing by the end of the nineteenth century and income tax from 1915. Other taxes include all indirect internal taxes (imposed to specific sectors, services, actos jurídicos and others)

Up to 1856, miners were the only important economic sector paying direct taxes to the state, but after that year, just when the agricultural export boom was taking off, a property tax was imposed on land owners. At the end of the cycle, mining's share of total state revenue never represented more than 10 percent. Taking all internal taxation together, its share in total revenue rose from 2 percent in 1840 to over 20 percent in 1845, and remained above 10 percent until 1885. These internal taxes rose by about 50 percent by the end of the 1840-1880 period including not only the agricultural property tax imposed in 1852, but also an inheritance and rent tax. These later taxes were approved in the economic crisis of 1879, after intense debate in the Congress, but became insignificant when Chile obtained a new source of income, nitrates in the next cycle, and disappeared later on (Sater 1976).



In term of magnitude, direct export contributions seem to have contributed little to the state finances, in particular if we compare their contribution with that of nitrates in the next cycle. Yet, for most of the export-led growth cycle, import tariffs represented the bulk of Chilean revenues. With time, state resources were not enough to sustain the greater scale of the Chilean government's operations. Instead of raising more internal taxes, the Chilean state opted for borrowing, a common practice among Latin American at this time.<sup>7</sup> Nonetheless, the more diversified structure of the economy was conducive to a more direct involvement of competing powerful elites on the expenditure of state revenues expanding the institutional capacities of the state steadily and by consensus. Chilean rulers, having less direct access to boom profits, had to negotiate with strong and emerging export elites in order to develop the infrastructure of the state, for instance, railway infrastructure.

With external resources increasing its participation in the Chilean revenue, the fiscal issue alone does not seem to be a sufficient cause of state development in Chile in this period. Indirect taxes, such as customs, and foreign loans associated with the mineral wealth were present in Chile. As we have explained before, Chile's first cycle not only was characterized by little direct contribution of mining to the state revenue but by an economic setting of diversification that shaped a particular setting of elite politics. In a diversified economic setting, strong and enlarged elites, with multiple cross-sectoral interests in Chile pushed for institutional involvement, which improved representation and counterbalanced the power of the state at a very early stage. The constitutional reforms of the 1870s established the prohibition of re-election, rules for quorums in meetings of both parliament chambers, and rights for assembly, association and petitioning to constituted authority. Moreover, reforms allowed senate elections by direct vote of the provinces, and reduction of the period to six years. The power of ecclesiastical courts was abolished reducing largely the power of conservatives and the church over society.

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<sup>7</sup> These tariffs were designed without much intention of protectionist goals, but due to the Government's need for revenues (Ortega 2005).

More institutional involvement in the process of state building enabled them to negotiate terms with each other and with rulers in order to expand a more ‘rational-bureaucratic’ centralization of the state; either to achieve their material or ideological aims, or to avoid the general cost of political instability that re-emerged in the 1850s. The resulting outcome was the expansion of the modern apparatus in areas such as agriculture infrastructure, railways, and education.<sup>8</sup> By the mid-1870s, Chile had a state enterprise sustaining a rail network of nearly a thousand miles (half of it owned by the nation) providing, in addition, significant profits for the state. A state-run telegraph with forty-eight offices and 1,600 mile network that spanned the length of the country<sup>9</sup>, and a centralized system of education, whose leaders’ efforts for the centralization of the authority and of the budget to provide equal teacher training and supervision provided substantial results: literacy rose from 13.5 percent in 1854 to 23 percent in 1875 (Soifer 2009).<sup>10</sup>

Moreover, Chile completed the occupation of its territory. Since the mid-1830s, the Mapuches – the largest indigenous group in Chile—had been left largely undisturbed occupying a significant territory in the South, but agricultural expansion drew settlers in the area south of Bio-Bio, causing tensions with the Mapuches. The Chilean state responded by displacing the Mapuche communities to a narrow belt of territory. The final occupation of the Mapuche territory in the 1870s was the result of a forceful military operation, as well of the railway and the telegraph system that were both pressing toward the frontier from the north with substantial support of the Chilean state.

The characteristics of the Chilean economy were reversed with respect to the previous cycle in the 1880s. In 1876, the world price of copper fell by 20 percent, causing Chilean

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<sup>8</sup> For more detail on the how the sequence of mining dependence affected differently the setting for elite politics in Peru and Chile, and therefore, type of the involvement of these elites in the construction of the state, see Paredes’ dissertation forthcoming in 2011.

<sup>9</sup> The government assisted a private company with subsidies to install the first telegraphs “shouldering the main burden of creating a national network, as part of a fully organized postal service by 1856” (Collier and Sater (2004)

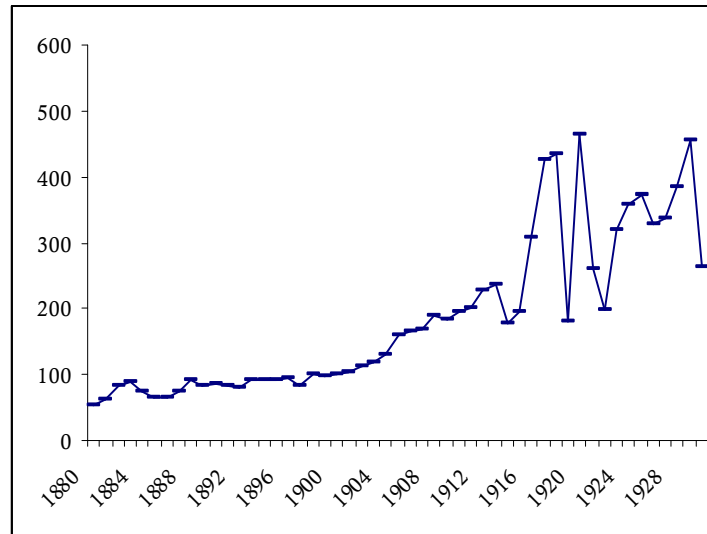
<sup>10</sup> In 1860, president Mont’s Law on Education, finally approved after ten years of insistence, established free primary education (non mandatory, but open to all) and remained valid until 1920, when primary education became mandatory

copper exports to decline by 16 percent (Collier et al 2004, p125). To make the situation worse, the rapid expansion of highly efficient mines in the United States and Australia drastically reduced the competitiveness of Chilean copper in the world market, leaving Chile's major copper ore deposits untouched (Culver and Reinhart 1989). However, during the new cycle the Chilean economy experienced a massive export boom due to the expansion of the nitrate sector in the northern part of the country (nitrate was a substitute for guano, much in demand in Europe at the time (Sunkel and Cariola 1985). This expansion was an immediate consequence of Chile's victory in 1880 over Peru and Bolivia in the Pacific War and the annexation of nitrate fields in both countries. This new export cycle lasted until the Great Depression of 1930 when synthetic fertilizers began to offer a more convenient source of stimulant.

In the 1880s, nitrate exports helped Chile to recover from the collapsing of copper and from the debts acquired during the war. From then to the First World War, nitrates enabled the Chilean economy to sustain one of the highest growth rates in the region, only lower than in Argentina (Bulmer-Thomas 1994). Graph 3 shows Chile's exports almost doubling between 1880 and the end of the century, and growing fivefold up to the 1920s. But from then to the Great Depression, Chilean exports were highly cyclical.

Graph 3

Chile's Export Quantum Index, 1880-1930  
(1900 = 100)



*Source:* Braun et al 1998 Table 5.4 Total exports and imports in Dollars of each year 1810-1995 P.155 (Deflated by the WPI of the US)

The structure of the export sector changed also radically with respect to the previous cycle. Chile's nitrates industry experienced geographical concentration, significant foreign control, and demand expansion almost entirely dependent upon the government sector. The structure changed from one based on mining and agriculture exports to one dominated by and dependent upon a single commodity: nitrates. Up to 1916, nitrates' share of total exports grew very rapidly and reached a peak of 81 percent in that year. From 1880 to 1916, nitrates' share of total exports was more than 70 percent almost every year (see table 3 in the annex). But from 1920, nitrates fluctuated more dramatically.

We have explained how export sectors in Chile in the previous cycle were mainly locally controlled. This characteristic varied in the next cycle but Chilean elites were not completely marginalized from the new profitable business. The influence of British interest became greater in Chilean internal affairs in this cycle with the majority of the

ownership being in British hands during the most profitable period of the sector.<sup>11</sup> With less national capital involved and with more tenuous links with the internal economy, no local processing was stimulated by nitrates. Internal manufacturing and agriculture that to some extent expanded in the previous cycle were able to continue operating, in spite of inflation and falling transport costs, largely because the Chilean central state was able to extract a significant surplus from the nitrates business and to use these resources to expand the demand, which became heavily dependent upon the government sector for first time (Palma 2000). According to Palma (2004), the Chilean state was able to transfer huge amounts of resources into public investment in infrastructure, unlike Peru in the guano cycle. This not only expanded demand, but helped to avoid the appreciation of the Chilean peso until the First World War.<sup>12</sup> Moreover, the First World War cut the supply of imported consumption goods enough to induce a significant stimulus to Chilean manufacturing, just when the state became more vulnerable to the volatility caused by the growing instability of export prices.

In this cycle, the fiscal circumstances in Chile were dramatically different from the previous cycle. Rents from nitrates surpassed all other forms of income. By the turn of the century, many of the internal taxes achieved in the first cycle in Chile were eliminated, and the state began to depend exclusively on nitrates and its annexed line of foreign credit (See graph 2). Nitrates returned value to the country was very significant as the state was able to seize nitrate fields and imposed heavy export taxes on miners.<sup>13</sup> Mamalakis (1988) has estimated that the state managed to impose export duties to the level of around 33 percent of the total exported value (p.192).

These nitrate resources made possible an enormous expansion of the state. In 1920, fiscal expenditure was six times larger than in 1885. Taking advantage of this large amount of nitrates revenues, the Chilean state was able to increase its state expansion. This was

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<sup>11</sup> Werner Haase "Die Chilenische Salperidnustrie und ihre Zusammenfassung in der compania de Salitre de Chile. (Dusseldorf, 1934), p.10. Note: \* includes german-owned nitrate mines. In Cariola and Sunkel 1985 p.199.

<sup>12</sup> The average exchange rate during the period (1878-1914) was 13.9 Chilean pesos to the Pound Sterling, with a standard deviation of only 1.17 pesos, showing surprising stability (Palma 2000 p. 243).

<sup>13</sup> Sunkel and Cariola 1985, and Palma 2000.

particularly the case in those areas in which important progress was made in the previous cycle. We have explained that the management of public works, railways and education were significant institutional achievements in the nineteenth century. Up to 1920, about one third of public expenditure was invested in the continuation of projects that were initiated in the previous cycle, of which railways constituted the great bulk of the investment. Other expenditures went to pay military expenditures and the expansion of both civilian and military bureaucracy. Expenditure on social issues also increased but relatively less than in the other sectors.<sup>14</sup>

But with all the ‘good investment’ in physical and human capital, and the extraordinary strength of the political system to resist and avoid sinking in the increasing political chaos that began to be more evident after the First World War, the situation became unsustainable. The state became more vulnerable to fiscal deficits, a problem that it tried to solve via the emission of paper and external debt. This was not Chile’s first experience with inflation, but it was in this period that inflation became chronic. When foreign investors ceased to provide new finance, the subsequent rapid contraction of local spending served to make the impact of the Great Depression in the following years the worst in region.

### **3. Peru: An early institutional curse**

In Peru internal rivalries were not fully solved when export growth based on guano suddenly took off. The wars of independence in Peru had helped caudillos to legitimize their power vis-à-vis the traditional elites that were debilitated during the conflict of independence (Contreras 1999). As Oscar Oszlak (1981) rightly points out, the emancipation interrupted the political integration of mineral economies, such as Peru, with the colonial centre. This integration had been a necessary condition for the economic base of these countries elites. In this context, military caudillos not only became the main mechanism of integration, but also an effective mechanism of social and ethnic

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<sup>14</sup> See Hummud 1956.

promotion.<sup>15</sup> They remained the principal source of authority and leadership in Peru for many years. When export growth suddenly brought significant opportunities for the expansion of the state, these actors were strongly empowered in relation to traditional economic groups.

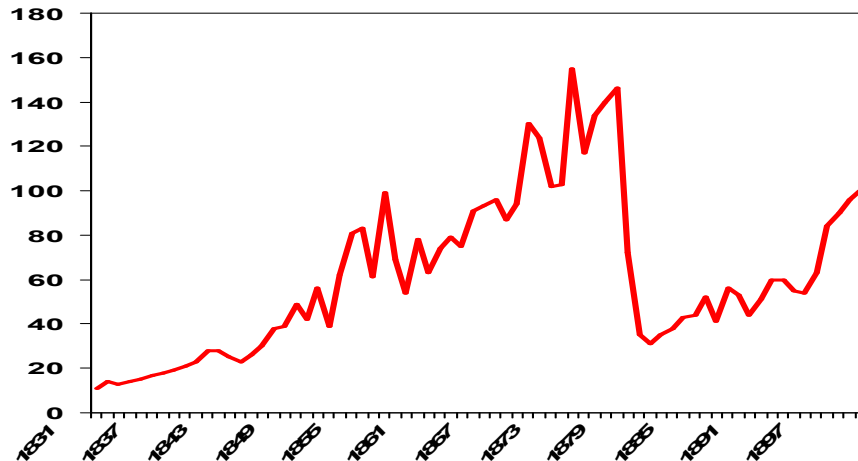
Growth in Peru was caused entirely by the miracle of guano. The dried excrement of seabirds became the world's single fertilizer alternative to compost in the mid-nineteenth century and its demand attracted capital inflow from Britain and France.<sup>16</sup> Graph 4 shows how exports in Peru ballooned five times in the first decade alone. In the first decade, Peru grew at an average annual rate of nearly 8 percent, almost double the average annual rate of Chile in the same decade, and by the end of the period the export quantum in Peru grew at 6 percent while Chile's grew at 4 percent. Peru's export quantum experienced a five-fold increase in total exports from the first sale of Guano to one year before the war (1878). Most countries suffered an economic slowdown at the end of the 1870s because of the downturn in the global cycle, but Peru suffered one of the most spectacular busts in history: a decrease of five times in three years, from 1878 to 1881 (Graph 4).

Graph 4  
Peru's Export Quantum Index, 1830-80  
(1900 = 100)

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<sup>15</sup> In Peru, the army facilitated the upward social mobility for those mestizos and mulattos who supported the patriot troops in the battles. It was these people of mixed origin that were excluded during the colonial regime from positions in the government and in the making of politics, and who then became an important group of politicians that several times governed Peru. (O'Phelan and Guerrero).

<sup>16</sup> In the 19<sup>th</sup> century total imports at constant prices doubled every 19 years in England and every 22 years in France, this implied an annual growth in volume terms of 3.7% and 3.2% respectively (Bulmer-Thomas 1994. p54)



Sources: *The quantum volume index of Peru is calculated by Hunt 1973, table 24, p.64 in constant prices for the base year 1900.*

Peru was a monoproducer of guano. The export economy was highly dependent on this single commodity and concentrated in one regional area, the coastal islands near to Lima. Moreover, Chinese coolies were used to extract and embark the guano in conditions of semi-slavery. Because the capital and labour came from abroad, and the product was already situated at the coast, no local processing or transportation development was required in Peru. Unlike in Chile, the direct linkages of the export economy with the internal market were almost nonexistent, and the economy was almost entirely dependent upon the fiscal revenues which accrued to the central government in Lima. Guano's share of total exports jumped from 34 to 50 percent and hit a peak in 1854, at 74 percent, and for the next decade, and the first half of the following decade, guano exports averaged around 60 percent (Hunt 1985 p. 258). Table 1 in the annex shows the share of mining in total exports for both countries in this period.

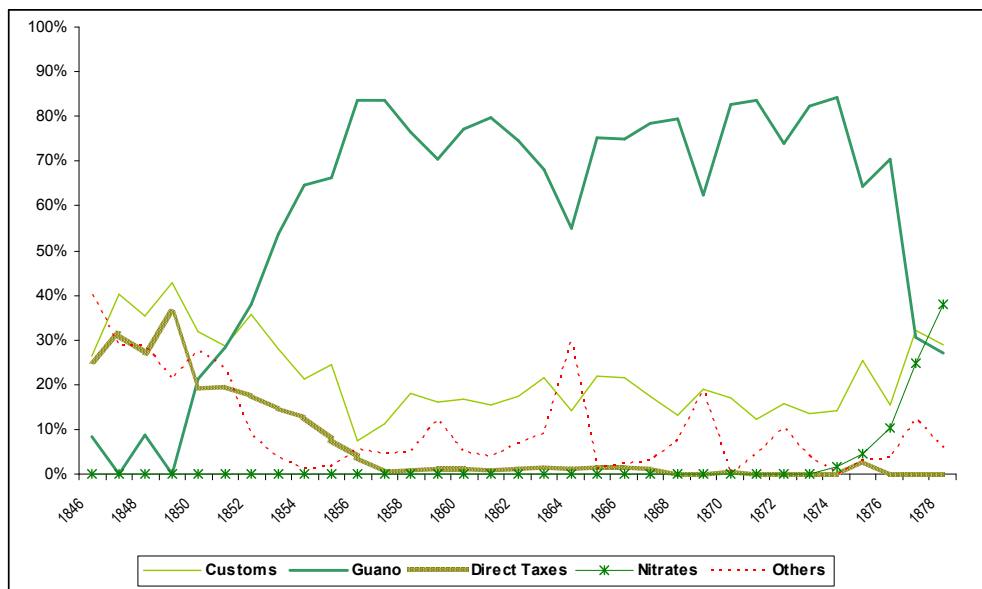
Mining bonanzas displayed different characteristics in Chile and Peru but still transformed both countries fiscal systems. In the case of Peru, before the guano age, the caudillo state had often to confront an empty exchequer.<sup>17</sup> The caudillo government was only able to endure due to the extensive use of short-term loans supplied by the merchant elite (Gootenberg: 1989:104). These loans were complemented with customs revenue,

<sup>17</sup> See Contreras 1999, p.80-84 for an excellent summary of the fiscal policy after independence.



and tax bonds.<sup>18</sup> Under these conditions, state development was unlikely to occur. Guano represented a radical fiscal change compared to the past. The great jump in fiscal income came in the mid-1850s, so that by 1857, guano rents were greater than total fiscal revenues three years earlier (Hunt 1985). In the years 1861-1866, the state improved its share from the consignment system.<sup>19</sup> Total income was around 20 million soles, a four-fold increase over 1846-1847, and guano's share had risen from 5 percent in the earlier period to no less than 75 percent in the sixties. Total income hit its peak in the early-1870s when Peru was receiving full payments under both the expiring consignment to national contracts and the Dreyfus contract (Hunt 1985, Contreras 2004). The Peruvian government departed from the consignment system in 1869, when it signed an agreement with Dreyfus Brothers & Co. of Paris to sell two million tons of guano in Europe with a monopoly of resale in the markets of Europe and its colonies.

Graph 5  
Composition of Peruvian Tax Revenue (1846-1878)



*Sources:* For 1846-67, Tantalean (1983) with original sources from Emilio Dancuart, editor de *Anales de la Hacienda publica del Peru*. (Several Volumes) made estimations for years

<sup>18</sup> See also Quiroz, 1993 “Consecuencias económicas y financieras de la independencia en el Perú” In Leandro Prados y Samuel Amaral (eds.), “La Independencia Americana: Consecuencias Económicas. Madrid: Alianza Universidad, 1993; Contreras 2001 “La transición fiscal entre la Colonia y la República” In Scarlett O’Phelan (ed), “La independencia del Perú. De los Borbones a Bolívar. Lima: Pontificia Universidad Católica del Perú e Instituto Riva Agüero, 2001; pp. 197-235.

<sup>19</sup> System of contracting with mercantile houses for the sale of guano.

with missing information. We have checked his estimations with the information offered by Hunt (1985) for the available years (table 5, p.299). From 1868 to 1877, we use Hunt (1985) table 5, p.299. All sources offered the data in current Peruvian soles. Notes: Direct taxes included the Indian tax, industry, urban and rural property tax. Other taxes includes indirect taxes to specific sectors

Guano's profits helped to control political instability at least during the first years of the period. In 1845, a constitutional government was established in Peru with a relatively broad support. For the first time in many years, an administration finished its legal term, and there was a constitutional transition. Ramon Castilla, the first guano president, organized a national budget, never before prepared in the country, and an accounting bureau, including a council of statistics (Pike 1967).<sup>20</sup>

However, Peru's fiscal reforms during the Guano Age were a continuous process of dismantling direct taxes without creating substitutes. Before guano, the most important source of state income was the indigenous tax and customs.<sup>21</sup> The indigenous contribution needed to be reformed and applied to all citizens through the development of a modern form of collection. With the guano boom, the relative importance of the indigenous tax decreased (see Graph 5). By 1854, the tax was totally eliminated and not replaced by any other form of domestic taxation. The main source of internal fiscal income had disappeared.

In the years following the elimination of the tax, advance payments on guano were received to cover the annual indigenous contribution to the Peruvian treasury-- approximately 1,400,000 pesos a year (Dancuart Vol V, p52; Vol VI. p.70). The remission of the indigenous tax cost the state some 7 or 8 percent of total guano profits. This expensive social reform was only possible in the dynamic of a windfall economy, in which the government was able to concentrate more of the resources and to separate the

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<sup>20</sup> This council, nevertheless, was not really operating until the 1970s, when President Pardo tried to revitalize the unit to organize the National Census (Basadre 1968).

<sup>21</sup> After independence the indigenous tribute that was eliminated by the Cortez de Cadiz and was re-established as a personal contribution. The indigenous tribute was preferred to the alcabala (the colonial sale tax) because in Peru the market was too small and active and the sale tax did not accrued as well as the indigenous contribution. During this period, most of the Estancos with the exception of the naipes, the smallest one were eliminated (Contreras et al 1999, p.81).

pace of its expenditure from that of its income by high borrowing.<sup>22</sup> Thus, a culture of advance payments and specific arrangements between the executive and the foreign companies started at an early date and became endemic, opening opportunities for corrupt practices.<sup>23</sup>

The relationship between Peru and foreign capital became more complex as the volatility of the guano price started to have an impact on the treasury and the government began to depend on its association with foreign houses to launch foreign loans. Government officials were misled by the promise of guano, even when the guano price on the international market was already declining and reports about the depletion of the deposits were circulating.<sup>24</sup> By the inauguration of the new government in 1872, the guano revenue was already entirely committed to the service of the debt. In 1869, the ratio of guano sales to foreign debt services was four to one; in 1875, it was one (Pike 1967, p134).

Thus, from very early on, rulers in Peru learned to separate its expenditure from the pace of its ordinary revenue collection by borrowing. Guano was the collateral for what became a widespread practice. Peru sold more government securities in England during this period than most of the countries in Latin America. The relation of Peru with foreign capital became more complex as the treasury started to depend on government bonds. The Chilean government budget also began to depend more and more on the selling of securities in London at the end of the first cycle, but total government bonds in Peru summed to four times the amount of Chilean bonds at the end of the period. In fact, Peru sold more government securities in England during this period than any other country from Latin America (see table 4 in the annex).

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22 In 1857, Castilla received 400,000 soles of advance payments from national consignees at an unusually high interest of 5 percent a year. In the next year, another 1,300,000 soles advance payment at the same high interest was conceded by Gibbs and Sons, and again another million in 1859 and another 3 million in 1860 were provided by national consignees. See Tantalean Table 9, Guano contracts; advanced payments to the state.

23 See Quiroz 2008 p119, Mathew, “the house Gibbs and the Peruvian Guano Monopoly p.106-8 and 230-31; and Tantalean Table 19, Contract 19.

24 See Bonilla 2008, 554; and Aggarwal 1996, p. 200 “Debt games, Strategic interaction in international debt rescheduling”

Hunt (1973) has calculated that more than 50 percent of the total state share of the guano profits was transferred to the public sector, 29 percent stayed in the civilian administration, and 24 percent in the army.<sup>25</sup> The size of the public administration multiplied from about 6 to 30 million pesos/soles between 1846 and 1870s.<sup>26</sup> This expansion is extraordinary even if we take into account the rapid inflation that struck the economy in the mid-1850s and continued with sharp fluctuations throughout the rest of the cycle (Gootenberg 1990). As in Chile, these amounts include salaries, pension payments, materials and public work.<sup>27</sup>

Guano also enabled an administrative expansion toward the interior of the country. The state opened court houses, municipal councils and executive representatives (*prefectos*) in departmental capitals, as well as military posts and police stations across the country, in most of these places, for the first time (Contreras et al 1999).<sup>28</sup> However, according to Jorge Basadre's eloquent summary "the constructive effort, at times, was only apparent and it did not make roots in the 'real country'" (1983: 267). The problem was not lack of resources, but the lack of adequate institutions to give these resources an opportunity.

Like Chile, the state in Peru expanded, but without the elite negotiations that emerged in a setting of larger economic diversification in Chile in the nineteenth century. The setting of guano was not favourable to strength elites in a similar manner than in Chile. Guano rents empowered military caudillos that were still very in vogue during the 19th century. With an acute concentration of power in the state, few and narrow financial elites groups (landed elites remained rural and primarily oriented toward subsistence) and little common interest between them, there was not much motivation to demand and to bear the cost of a state reform. For instance, public works were mainly concentrated in the

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<sup>25</sup> Another eight percent went to pay foreigners for previous and new borrowing, 7 percent went to replace the tax burden previously paid by the indigenous people and 11 percent was transferred to consolidate the internal debt and the manumission of slaves. All these payments in a climax of great public scandal (Hunt 1973 and Quiroz 1987).

<sup>26</sup> See Tantalean, table 21. To make a rough calculation we converted all amounts to reales following Gootenberg exchange rates: 8 reales = 1 peso before 1962; 10 reales = 1 Sol thereafter.

<sup>27</sup> Civilian and military salaries and pension payments represented about 70 percent of the public administration in 1846, but their share decreased to about 50 percent in 1851 and to about 22 percent in 1870, giving place to significant spending in public works.

<sup>28</sup> For details see also Memoria de Gobierno (1874)

construction of railways, but they started late in the cycle with no economic sector motivating significant railways expansion. Until 1868, there was not much railway development -- the country only had the railway Tacna-Arica and the small line of 25km between Lima and Callao inaugurated in 1851 (Basadre 1968). But between 1868 and 1878, unfortunately at a time that guano reserves were coming to an end, a gigantic plan to build a network of railways was embraced by the government. The program consisted of about 1,500 kms of railways (Contreras et al 1999), and the state accumulated a debt of £49 million for this plan --ten times the amount inherited from previous governments and five times the accumulated debt of its neighbour, Chile, for the same purpose. Twenty percent of the guano income went to pay this debt (Hunt 1973b). The enthusiasm was less marked for other projects of equal importance. For instance, the telegraph company was bankrupt at the end of the cycle. Private investment did not find the required support to finance the main burden of creating a national network that could serve as part of a fully organized postal service.<sup>29</sup> Public works and railways were without doubt well-intended efforts, but the state administrative reforms that were required to give these efforts a chance did not come about. Technical capacities for the design of the lines were lacking, and even when these capacities existed, they were often undermined by political interference (Contreras et al 1999).

For more than one century, an important segment of the national map remained entirely disconnected from the state's reach. The Amazon Basin, 61 percent of the country area, was just beginning to be explored by the mid-1850s. Resources from guano fostered some military and religious expeditions (Contreras et al 1999: 107), but beyond the colonization of Iquitos--an important fluvial port to navigate the Amazon River-- and a few colonization settlements in the forest of the central highlands in the mid-1850s, nothing more dramatic happened.<sup>30</sup>

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<sup>29</sup> Memoria del Ministerion Gobierno (1874).

<sup>30</sup> Contreras et al 1999, p.99-104; and Basadre 1983, V.4, p. 295-302.

In the new cycle, Peru not only suffered from the exhaustion of its guano deposits, but from the loss of its nitrates, its new ‘start’ commodity, to Chile in the War of the Pacific in 1879.<sup>31</sup> After the Pacific War, Peru experienced a dramatic contraction with negative export growth rates for almost two decades by the turn of the century, it eventually returned to the high growth it had enjoyed in the previous cycle of expansion (See table 2 in the Annex). The country enjoyed a progressive recovery diversifying away from guano and spreading its export earnings across plantation crops and a wide range of minerals, including oil. Crops were largely concentrated in local hands, and at least for half of the period, these export sectors were able to produce a significant stimulus for the emergence of internal sectors, with the government sector playing a minor role in the expansion of demand. In the last period of the cycle the rate of Peru’s growth was not only higher than the Latin American average, but also superior to Chile (Bulmer-Thomas 1994, p. 65).

Export crops had the largest export share until 1920; thereafter mineral shares, particularly copper and oil, increased their participation. In the decade up to 1920, sugar and cotton accounted for about one third of total exports. During the First World War, sugar and cotton exports soared to an unprecedented peak of 72 per cent. Although more diversified, all these products were concentrated in one single geographical region, the coast. In the same period copper and oil accounted for only one fifth of export values and in 1920 declined to 12 percent. By 1925, however, copper and oil had increased to 32 percent, and by 1930 to 40 percent. Meanwhile coastal agriculture’s share had dropped to 29% (see table 4 in the Annex).<sup>32</sup>

In Peru, the early expansion of exports in this cycle was led by coastal and locally owned export sectors. These sectors enjoyed a high returned value, which in turn, generated large demand effects in the local economy. Basically, local capitalists were left with a surplus “over and above that required for re-investment in further export expansion” (Thorp and Bertram 1978). Moreover, a relative price situation made urban

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<sup>31</sup> This was a resource war involving Bolivia, Chile and Peru (1879-83). The conflict started because the Bolivian state increased the taxes on two largely Chilean-owned companies, *Compañía Salitrera y Ferrocarril de Antofagasta*, and Peru became involved to honour a ‘secret’ agreement of mutual defence with Bolivia. The result was the occupation by Chilean troops of the Coast and Central Sierra of Peru.

<sup>32</sup> For more details see Thorp and Bertram 1978.

manufacturing sufficiently profitable to attract investment capital. This situation was generated partly by the diversification of the economy and partly by the high tariffs that resulted from the government's need of revenues. The consequence was the expansion of the internal economy with the development of manufacturing activities. Thorp and Bertram show how textiles and consumer goods were falling from 58 percent of total imports to 49 percent by 1900 and to 30 percent by 1907 (1978).

However, the process of diversification was not sustained. The fall in the share in total imports of textiles and consumer goods, which was dramatic over the first half of the period, decelerated thereafter. The period after 1915, a result of the shifts in relative international prices, was dominated again by mining, both copper and oil, with the balance between local and foreign capital in favour of the latter. This change came with a shift, not only in the structure of exports from crops to mining, but in the structure of property, from the predominance of local to international firms.

Without the guano and nitrate rents and the effective resistance of these elites to pay any major contribution, the budget of Peru was barely viable for most of the new cycle. Revenues were mainly coming from import duties and indirect internal taxes. Import duties represented 60 percent of total government revenues at the turn of the century. But the political predominance of the export producers not only enabled this elite to resist effectively the imposition of any export duties, but to reduce import tariffs over time, placing most of the tax burden on the consumption side. Since 1910, the bulk of these taxes were increasingly indirect taxes on sugar, alcohol, tobacco and matches.<sup>33</sup> Direct taxes proved very hard to re-establish (Contreras 2008) until the 1920s. After the Pacific War, in a situation of severe economic collapse, it seemed logical to promote investment by exonerating the dynamic sectors from taxation. In addition to the exemption granted to agriculture, in 1890 mining was granted a twenty-five year exemption. In summary, until 1915 when taxes on exports became again an option, Peruvian state finances were under budget.

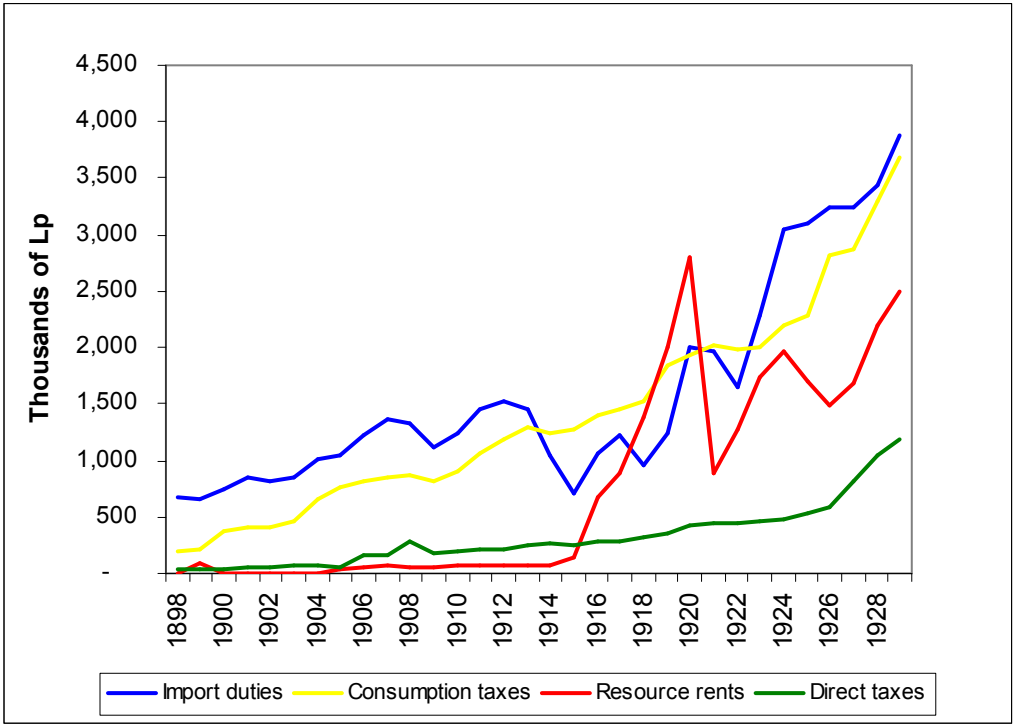
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<sup>33</sup> This was possible due to increasing capacity of the recollection system

Changes to these fiscal circumstances only came with the return and progressive predominance of mining over other export sectors, and the dominance of the multinationals. Immediately after the end of the tax exemption, an export duty law was introduced for copper and oil, and extended to other sectors in a context of increasing political agitation in the country. The increasing predominance of mining (copper and oil) in the economy opened new opportunities for state autonomous financial revenues (see Graph 6), and as consequence, for increasing rulers strength vis a vis elite groups. In this context, a new type of civilian, but authoritarian and non-constitutional rule displaced the political power of elites for about a decade. This new regime, of Augusto Leguía, re-centralized the state administration, improved state extraction, used heavy foreign borrowing and planned a vast and complex public work plan with very unconvincing results. After decades of constrained budget, the need for development justified again huge financial indebtedness and the expansion of the state but reproducing the limitations of the state in the previous cycle, with its lack of capacity and monitoring mechanisms.

Graph 6  
Composition of Peruvian Tax Revenue (1898-1928)





Source: Elaborated with original sources from the Extractos Estadísticos 1920-1935.

#### 4. Conclusions

The paper presents the limits of a fiscal-centered approach to explain divergence between Chile and Peru by ruling out ‘windfall rents’ as a sufficient cause of state underdevelopment, as these types of rents, and foreign loans associated with them, were present in the two studied cases. The comparative analysis shows the significance of sequence. Intense mining with all the characteristics described in the literature of resource curse was not simultaneous across the cases. A sudden and sharp export growth that is overwhelmingly concentrated on a single resource, unusual high levels of foreign capital intervention, and extraordinary rents from non-renewal resources that rapidly become the most important source of state income did not occur in Chile at the onset. In these circumstances, Chile was able to make major institutional achievements before mining acquired the perverse characteristics that the theoretical literature refers to. Chile faced the challenges of modern mineral booms when significant state formation was already complete. Moreover, the institutional legacy of the nineteenth century, built through a process of elite-state negotiation shaped by the sequence of dependence, above all in regard to institutions around the development of infrastructure, was crucial for the policy management of the subsequent cycle. Peru, on the other hand, experienced the perverse elements of a concentrated economy from the outset. Mineral bonanza happened when the country had scarcely developed political institutions or a state apparatus.

We have shown in this paper at what stage of state formation, or *when*, mining starts interacting in dangerous ways with the process of state formation. Future research requires to pay more attention to the effects of the sequence of mining dependence on the institutionalization of state rules that enabled (or not) elite actors to display contrasting degrees of resistance to attempts of autocratic rule fuelled by mining dependence, and therefore, contrasting possibilities for elites to have an independent influence on the pattern of development of the infrastructure of the state. In Peru, since very early, the presence of mineral resources shaped a political economy of taxation without representation centred on the coast and Lima, an institutional setting that was not conducive to state-elite negotiations. There was no effective political or economic motivation to generate healthy institutions. More research is also necessary to analyse

how in a subsequent sub-period, these legacies helped to determine dominant regime forms, and ultimately the patrimonial or rational bureaucratic character of the state apparatus in both countries.<sup>34</sup>

Finally, the political economy of managing extractives has many important dimensions, with overlapping elements. One critical element is the country's ability to extract and use resources. This is a question of taxation but also of quality of spending. My underlying assumption is that the historical evolution shapes in important ways today's political economy context for extractives-based development. For instance, understanding today's constraints on policy-making at the local level (with the increasing impulse for decentralization of resource rents) requires an understanding of the weight of institutional legacies. In Chile, taxes and royalties are retained at the central level, the believed to be cyclical part is saved for future spending, and significant transferences from the centre to the regions take place through experienced and specialized institutions such as SUBDERE and CORFO. In Peru, instead, 50% of the tax on profits and the total of royalties are pushed back to the extractive regions, divided between regional government and municipalities. Weak local governments have received abrupt increases in investment budgets; the technical support of the centre to the process is still minimal. Under new boom conditions, Chile and Peru are likely to be experiencing a new institutional divergence which reinforces observed post-colonial political economy patterns.

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<sup>34</sup> Paredes (forthcoming) develops an argument to address these issues.

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## Annex 1

Table 1  
Principal Commodities Exported 1845-1880  
(Percent of total exports)

Year	Chile		Peru	
	Crops	Mining	Crops	Mining
1845	14	62	3	83
1850	26	58	1	90
1855	21	67	1	91
1860	20	74	1	90
1865	34	62	4	88
1870	39	53	8	85
1875	34	65	19	74
1880	14	82	39	43

Sources: Chile: Braun et al (2000) table 187; Peru: Hunt (1973a) table 24, p.64. Note: Crops in Chile (1845-1875) includes mostly wheat, and mining, copper; crops in Peru in the same period include mostly sugar and cotton, and mining, guano and nitrates.

Table 2  
Growth of Annual Average Exports and Export Purchasing Power  
(percentages)

	Export Growth		Exports per Head in \$US		
	1870-1890	1890-1912	Circa 1870	Circa 1890	Circa 1912
Chile	3.3	5.00	14.2	20.3	44.7
Peru	-4.9	6.9	10.1	3.3	9.4
LAC	2.7	4.50	8.9	11.7	20.4

Source: Bulmer-Thomas, 1994, p. 69. Note: Three years average

Table 3  
Principal Commodities Exported  
(In Percent)

Year	Chile		Peru	
	Crops	Mining	Crops	Mining
1890	13	84	37	47
1895	11	85	42	41
1900	8	90	39	53
1905	8	90	39	32
1910	9	89	34	48
1915	14	81	37	37
1920	10	85	72	18
1925	11	86	43	43
1930	17	78	29	54

Sources: Chile 1890-1930, Braun et al (2000) table 187; Peru 1890-1930, Thorp and Bertram (1978) Table 4.1, p. 40.. Note: Crops in Peru includes sugar and cotton, and mining until 1910 mostly silver and copper, but since then also includes oil.

Table 4  
British Investments in Latin America, End of 1880  
(In £ millions)

Country	Total Nominal Investment	Government Bonds	Economic Enterprises
Brazil	38.8	23.0	15.8
Peru	36.2	32.6	3.5
Mexico	32.7	23.5	9.2
Argentina	20.3	11.2	9.1
Chile	8.4	7.7	0.7
Uruguay	7.6	3.5	4.1
Venezuela	7.5	6.4	1.1
Costa Rica	3.3	3.3	....
Honduras	3.2	3.2	....
Colombia	3.0	2.1	0.9
Ecuador	1.9	1.7	0.1
Bolivia	1.6	1.6	...
Paraguay	1.5	1.5	...
Cuba	1.2	...	1.2
Dominican Republic	0.7	0.7	...
Guatemala	0.5	0.5	...
Nicaragua	0.2	...	0.2
General	10.2	...	10.2
<b>Total</b>	<b>178.8</b>	<b>122.5</b>	<b>56.1</b>

Source: Rippy 1966, table 3, p. 25.