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Masters in Economic Development

Social Capabilities and Catch-up Growth in Natural Resource Rich Developing Countries

A long-term perspective for the case of Chile

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Abstract: This research addresses the role of social capabilities over the growth trajectory of natural resource (NR) rich developing countries through a case study – an analytical narrative using data from various sources – of the Chilean experience since the early 1900s to the present. The paper adopts a novel framework, which identifies four distinct but interrelated dimensions of social capabilities: transformation, inclusion, and autonomy and accountability of the State. The empirical research reveals that Chile made great improvement in terms of social capabilities during the first half of the 20th century and up to the early 1970s but was unable to translate that into high growth rates. This is accounted on the determinant role that the lack of Sate autonomy has played over the economic performance and the evolution of the other dimensions. Then, under a dictatorial regime, Chile was able to exploit the capabilities stock by complementing them with a set of radical (neo-liberal) economic reforms, which led the country to an unprecedented high growth trajectory. However, the later prolonged slowdown is again accounted on the persisting lack of State autonomy and the role of the elites. These results hold relevant consequences for developing countries who should then focus their efforts on building an autonomous State, instead of broadly taking care of inequality. This is even more relevant for NR rich countries where an independent State is crucial to avoid rentier behaviors around NR and provide the conditions to transform and upgrade NR based industries.

Key words: Economic development, catch-up growth, social capabilities, natural resources, Chile.

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1. Introduction

1.1. Background

Economic development is elusive. By 2014 only 36 countries might have declared to have achieved it and only a few countries seemed likely to join this club in the middle term (United Nations, 2018). The question about the underlying reasons of the great disparities on the levels of development between countries and regions has attracted the interest of scholars for centuries and still does today (Fagerberg & Srholec, 2017).

Today development is understood as a multidimensional phenomenon that although usually measured mostly in economic terms, is much more than just economic progress (Adelman, 2000), as it entails a transformation of the whole society including the economy, social relations, politics, and the State (Pritchett, Woolcock & Andrews, 2010). Moreover economic development combines sustained growth, structural change, technological upgrade, modernization of institutions, and broad improvements on welfare (Adelman, 2000).

Regarding long-term economic growth, the idea of convergence through taping on the "advantage of backwardness" of Alexander Gerschenkron (1962) has received mixed empiric support (Andersson & Palacio, 2017). On one hand, the world as a whole has not converged during the 20th and 21st centuries as the productivity gap between the more and less developed countries has not closed, but instead grown bigger (Pritchett, 1997). On the other, the experience of the Western world during the first part of the 20th century, when more backward countries significantly closed the gap to the more advanced ones (Dowrick & Nguyen, 1989), and the successful catch-up experience of the East Asian Miracle countries, have provided support for the idea.

The latter and in particular the East Asian Miracle, and more recently the Chinese experience, has served to feed the view that convergence, catch-up and the path to development is actually a matter of linear technological convergence (Andersson & Palacio, 2017), which passes unequivocally through the fostering of "a series of allegedly critical industries such as steam power, mechanized factory technologies, electricity, vehicles, ICT, etc" (Smith, 2007, p.1).

In turn, this leaves little hope for many low and middle-income countries rich in natural resources (NR) that lack the large unskilled and cheap labor surpluses (a lot of very poor people) that East Asian countries had back in the 1950s and 60s. Natural resources and natural resource-based industries (NRBIs) are seen as detrimental to sustained growth and development. Mere means-to or even a curse or a disease. The economic

explanations offered for this negative effect of NR are concisely summarized by Keith Smith:

> *"the Dutch disease, in which exchange rate appreciation as a result of the resources sector renders domestic activity uncompetitive, and labour supply decreases (as the resources sector draws off key labour inputs from the rest of the economy) combine to inhibit non-resource growth; declining terms of trade in primary commodities and instability in commodities markets prevent capital accumulation and hinder growth; resources create rent seeking behaviour that undermines entrepreneurship and growth; and resources sectors generally involve a lack of linkages with the wider economy"* (Smith, 2007, p.6).

But this conception of NR dismisses the important experience of several developed countries, who during the nineteenth century and the first half of the twentieth century underwent development experiences in which NR seem to have been the engine of economic growth (Smith, 2007; Ville & Wicken, 2012, 2015). Among them are Australia, Norway, Canada, Finland, Sweden, the Netherlands, New Zealand, and to some extent even the United States (Smith, 2007). Most of these countries are currently seen as role models not only for developing countries but, in many aspects, by some of the major developed economies of the world (United Nations, 2018), like the US, England, Germany, and France.

For example, according to Ville and Wicken (2012) both Australia and Norway managed to continually reinvent and extend their resource products and industries, providing new sources of growth, attuning the volatility problems of the curse and allowing the control of strategic resource assets (Ville & Wicken, 2012).

Whether natural resources have real negative effects over long-term growth – or the specific mechanisms at play – is still unsettled (Arezki & van der Ploeg, 2010; Arezki & Van Der Ploeg, 2007; Badeeb, Lean & Clark, 2017; Bravo-ortega & De Gregororio, 2005; Cockx & Francken, 2016; Frankel, 2010; Mehlum, Moene & Torvik, 2006; Ross, 2015; Van der Ploeg, 2011). Nevertheless, it is true that after the successful experience of the countries mentioned above, no other NR rich country has managed to develop, while only a few have achieved high income status, among them the notorious cases of Chile and Malaysia. Moreover, Southeast and South Asian countries – following the East Asian model – are usually seen as "the next in line" in detriment of Latin American countries, with higher GDP per capita but rich in NR.

However, as discussed, development is a non-linear and multidimensional process and this failure from NR rich developing countries – and most developing countries for what matters – must be accounted in these terms. A good candidate, and the one explored in this research, is the social capabilities approach, which suggests that the capacity to catch-up and develop depends on certain social features (Andersson & Palacio, 2017).

In this context, Chile is easily classifiable as a resource-dependent economy, most notably mining – copper in particular –, but also forestry, industrial fishing and fish-

farming, and agriculture, among others. Chile is officially a high-income country since 2012, the only Latin American country to make this transition. And even when it is also member of the OECD since 2010, Chile is still far from development, as it presents a very low level of economic complexity, low labor productivity, scant productivity growth over the last decades, and high levels of inequality.

Chile thus could be seen as stacked between the middle-income trap and development status. On one hand Chile appears to be a successful country, with a solid economy and well-functioning institutions. An "example" for the rest of the developing world. While on the other hand chances of achieving development look everyday slimmer, as growth rates have slowed down, and the years of higher growth are highly attributable to changes in commodity prices, particularly copper. Moreover, total factor productivity (TFP) has stagnated since the early 2000s (Magendzo & Villena, 2012). This duality makes Chile of particular interest as a subject for a case study to extract lessons for middle-income countries, in particular those richly endowed with NR.

The economic history of Chile since independence in 1810 is often divided into four distinct phases (Lüders, 1998; Meller, 1996). During the first phase (1810-1880), Chile was a poor, agrarian, and isolated country, only connected through the export of some minerals and agricultural products. The second phase (1880-1930) is characterized by the "nitrates exports boom", which put Chile in the international trade map, and also began to attract foreign investment to other sectors, most prominently the copper mining industry.

The Great depression hit hard on Chile, forced the abandon of the outward oriented strategy and laissez-faire policies, and inaugurated the third phase (1930-1973), when the country adopted, first naturally and after as a policy, an Imports Substitutions Industrialization (ISI) strategy. During this phase the economic structure diversified, and important social changes came along. Most prominently, the surge of the middle and working sectors and the creation a kind of welfare state (Andersson, 2009; Arellano, 1985; Meller, 1996; Rodriguez Weber, 2015).

The dictatorial regime that took power in 1973, rapidly implemented an extensive program of economic reforms characterized by liberalization and privatization. This final phase (1973-present) could further be divided in two sub-phases. The first 12 years of dictatorship until 1985, when the reforms were implemented, was a period of poor economic performance, rising inequality and poverty, and high unemployment. Then, since 1986, the country began to grow and for the next 12 years, Chile experienced high rates of economic growth. Democracy returned in 1990 and even when the high growth rates ended in 1997, the later moderate rates have been sufficient to reach high-income status recently.

1.2. Aim and Scope

With this background, the aim of this thesis is to grasp the multidimensional character of long-term growth and development, in particular for NR rich countries, by analyzing the experience of Chile, between the early 1900s and the present, under a novel theoretical framework on social capabilities developed by Martin Andersson and Andrés Palacio (2017). They, starting from Abramovitz's perspective and drawing on recent evidence on the role of different factors like institutions, the State, structural change, and inequality on development, propose to explain the capacity of a country to achieve long-term economic growth in terms of four interrelated dimensions of social capabilities: Transformation, inclusion, and autonomy and accountability of the State.

The purpose here is to contribute to the understanding of the phenomenon of development and catch-up growth, and the role of NR, by analyzing Chile's economic growth trajectory and the evolution of social capabilities. Therefore, the research question that guides this research is as follows:

> ***How have social capabilities evolved and interacted with economic growth in Chile from the early 1900s?***

More specifically, this work explores which dimensions of social capabilities might explain what was apparently lacking during most of the 20th century; why Chile failed to grow like other Latin American countries between the 1940s and 1970s; why was then able to grow fast since the mid-1980s leading to walk part of the route towards development; what accounts for the slowdown and the productivity stagnation since the early 2000s; and what would be needed to re-take the dynamism experienced until the late 1990s. Why Chile has been apparently able to escape the middle-income trap and NR curse, but not so much the typical Latin American problem of structural heterogeneity or dualism, and what would it take to keep moving forward.

The specific time frame was selected for two main reasons. First, a practical one: the availability of information to characterize social capabilities is very limited prior 1900. Second, social capabilities as the "societal abilities to respond to investment and innovation incentives, which cause sustained growth and therefore catching up" (Andersson & Palacio, 2017), is a concept that applies to modern economies, and Chile according to the description above - shared by many scholars (Lüders, 1998; Meller, 1996; Rodríguez Weber, 2017) –, prior to the 1900s does not qualify as such. It was only during the second phase that, through the export activity of nitrate and increasingly copper, that the pseudo-feudal (Rodriguez Weber, 2015) structure y began to change giving pass to a more modern one. In other words, the first two phases served as the foundation for a "modern economy" and the emergence of the State as a relevant economic actor. This is the environment where a social capabilities approach might hold some explanatory value for the growth trajectory of a country.

The research method is a case study of the case of Chile since the early 1900s, by offering an analytical narrative around the evolution of its economic performance (measures in GDP per capita) and social capabilities. The study is based on mostly quantitative data collected from various secondary sources, mainly public databases, which allowed obtaining a proper characterization of each dimension proposed by the framework.

1.3. Main Results and Outline of the Thesis

Chile made important progress in social capabilities during the first part of the 20th century. The economy diversified, inequality receded, middle and working sectors gained social relevance, the elites lost ground as the State gained autonomy and accountability with the creation of a pioneer – for Latin America – welfare state. However, the elites regained previous status with the military coup of 1973, but the regime arguably put a set of reforms that combined with the countries capabilities to produce a period of high economic growth between the mid-1980s and late 1990s, which was not maintained through the 2000s, but has not reversed and has led Chile to achieve high income status.

Despite this progress, social capabilities evolution since the return to democracy in 1990 have been slow and productivity has stagnated for the last 15 years at least. Moreover, the economy has lost diversification, market income inequality has remained stagnant, while the State has improved slightly its autonomy and a lot more its capacity – limited by its low autonomy level – of providing public goods (accountability).

It is argued here that the central theme, throughout the last century of Chilean economic history, seems to be the lack of State autonomy and the disproportionate role of the elites. This accounts for the "wasting" of the nitrates boom, the failure of the ISI strategy and the recent stagnation, while the "economic miracle" is accounted on the combination of the capabilities stock accumulated until 1973 and the pro-market reforms of the dictatorship.

The rest of the thesis is organized as follows. Chapter 2 presents the review of previous research centered on convergence theory and catch-up growth, different approaches to the subject of capabilities, the role of NR in economic long-term performance, and finally specific studies on the case of Chile. Then theoretical approach proposed by the framework developed by Andersson and Palacio (2017) is presented and discussed. Chapter 3 presents the data and research method, with special attention to the sources, their reliability and possible limitations. Chapter 4 is the body of this research and presents the analytical narrative around Chile´s growth trajectory and social capabilities evolution since the early 1900s. Finally, Chapter 5 concludes and discusses implications

for both the future of Chile and possible lessons for NR rich developing countries, and proposes possible lines for further research.

2. Theory

This Chapter is divided into two main topics. First previous research done in the fields of convergence theory, catch-up growth, capabilities, the role of natural resources, and the experience of Chile is discussed. Then, the theoretical framework of social capabilities is presented.

2.1. Previous Research

The idea that less developed countries might converge or catch-up, in terms of productivity, to the more advanced ones, through technology was already present in the economic thought least as back as the mid-19th century. As Alexander Gerschenkron (1962) points out back then already Marx noted that the industrially more developed countries are pictures of the future for the less developed ones (Gerschenkron, 1962). Gerschenkron further developed this idea and, based on historical evidence, claimed that the technological gap between the advanced and backward economies presented an opportunity for the latter (Fagerberg & Srholec, 2008). This opportunity, the so-called "advantage of backwardness", is embedded on the possibility of the less advanced economies to adopt the technology and best practices available in the more advanced ones, enhancing their productivity growth and allowing for catch-up (Gerschenkron, 1962).

Nevertheless, contrary to what might be inferred, exploiting this opportunity is not just a matter of imitation. On the one hand, specificities, like factor endowment, institutional arrangements, ideologies, or patterns of trade, must be taken into account (Gerschenkron, 1962). On the other, developed countries on the technological frontier will keep innovating and pushing it further and further. In summary, the technological diffusion process is not automatic, depends on specific local conditions, and requires a constant effort to keep up (Álvarez & Labra, 2015).

The real world has offered mixed empirical evidence (Andersson & Palacio, 2017). On the one hand, the world as a whole has not converged during the 20th and 21st centuries as the productivity gap between the more and less developed countries has not closed, but instead grown bigger (Pritchett, 1997). On the other, the experience of the Western world during the first part of the 20th century, when more backward countries significantly closed the gap to the more advanced ones (Dowrick & Nguyen, 1989), and the successful catch-up experience of the East Asian Miracle countries, have provided support for the idea (Andersson & Palacio, 2017).

This “contradiction” has led to a wide body of literature that studies the determinants of the ability of a country to embrace this advantage, achieve long-term economic growth and therefore catch-up.

Robert Barro (1991) inaugurated a line of research by exploring the correlation between the initial state of a number of variables and the subsequent growth rate in a cross-section of countries (this technique is commonly called the "Barro regression"). His most prominent findings were that initial levels of human capital, political stability and low-price distortions are positively related to per capita GDP growth.

Since then – and before – a myriad of studies has either theorized or empirically analyzed the effects of different variables over long-term economic growth. They usually confirm the findings made by Barro (Sianesi & Van Reenen, 2003) and add to the list factors like macroeconomic stability (De Gregorio, 2004), economic openness (Kormendi & Meguire, 1985), inward FDI (Borensztein, De Gregorio & Lee, 1998), internal savings and investment rates (Khan et al., 1990), financial development (De Gregorio, 1995), secure property rights (Acemoglu, Johnson & Robinson, 2005), economic complexity (Hausmann, Hwang & Rodrik, 2007; Hidalgo & Hausmann, 2009), geographic location (Diamond, 2012; Sachs, 2012), income inequality (Easterly, 2007; Engerman & Sokoloff, 2005), natural resources (Sachs & Warner, 2001), and democracy (Rodrik, 2000), among others.

For example Hausmann et al. (2014) showed that the ability of a country to achieve high rates of growth would be determined by the level of complexity of its economy, understood as the amount of knowledge embedded in the production basket. Then, countries with higher economic complexity with respect to their income level, tend to grow faster than those that are richer than their economic complexity level (Hausmann et al., 2014). Economic complexity – or the capacity to identify, create and use knowledge in a productive way – would be a driver for prosperity rather than a result of economic growth.

Conversely, Sachs and Warner (2001) noted that countries rich in NR tend to perform poorly in terms of economic growth. This phenomena has been attributed to many factors such as the “easy generation of high income, the low growth potential of a fixed production factor, the negative effect of currency appreciation (Dutch disease), the generation of a wrong feeling of economic security that discourages investment in other assets, high levels of corruption and the reduction of the institutional quality, an inadequate distribution of human capital among industries, the negative effects in innovation system, and the environmental damage” (Álvarez & Labra, 2015).

Although all these studies have all meant important progress in the understanding of growth and development, they all point to proximate causes (Maddison, 1988), and therefore fail to explain a multitude of particular cases. For example the emphasis of Acemoglu, Johnson and Robinson (2005) on property rights arguably fails to explain a great deal of the East Asian miracle. Factor endowment and natural resources fail to

explain the successful experience of a group of selected economies – among them: Norway, Australia, New Zealand, Denmark, Finland, Sweden, the Netherlands, and the US – that cemented their paths toward development on NR and NRBIs (Smith, 2007).

In response, a recent literature strand has centered in technology as the fundamental cause for development, departing from the follow-up of Gerschenkron's ideas by Moses Abramovitz. Abramovitz (1986) noted that even when the opportunity for less developed countries is there, this idea needs qualification: technological backwardness is not usually a mere accident, "tenacious social characteristics" would account for a substantial portion of a country's failure to achieve higher productivity levels (Abramovitz, 1986). Countries require specific characteristics in order to be able to select, imitate, adopt and adapt foreign technologies and ultimately to create new ones (Álvarez & Labra, 2015). Abramowitz called these characteristics "social capabilities" and argued that "a country's potential for rapid growth is strong not when it is backward without qualification, but rather when it is technologically backward but socially advanced" (Abramovitz, 1986, p.388).

What are the specific capabilities that matter most to the process of catch up and convergence is not clear. While Abramovitz initially identified social capabilities with a country's technical competence (proxied by mean years of education), its political, commercial, industrial, and financial institutions (Abramovitz, 1986), this new literature, as mentioned, has concentrated on technological diffusion, knowledge and innovation as the keys to explain differences in economic development.

This body of literature includes the concepts of "technological capabilities" (Kim, 1980), "absorptive capacity" (Cohen & Levinthal, 1990), "innovative capability" (Cohen & Levinthal, 1990), "knowledge economy" (Adler, 2001), "technological gap" (Fagerberg, Feldman & Srholec, 2014), and "innovation systems" (Freeman, 1995; Lundvall, 1996, 2016). Moreover, they all point their findings – with different accents – to the importance of the capacity to identify useful knowledge and make productive use of it would be at the center of the development process. While in practical terms this translates on the country's effort on human capital formation, R&D and innovation (Álvarez & Labra, 2015).

Recent research has attempted to differentiate between technological and social capabilities and show that both are significantly related to the capacity of a country or region to achieve high rates of growth. Moreover, social capabilities would be more important for countries lagging farther to the technological frontier, while technological capabilities begin to gain relevance as the gap closes (Fagerberg & Srholec, 2017). This provides support for another important finding signaling that a solid base on social capabilities enable the development of technological capabilities (Fagerberg, Feldman & Srholec, 2014).

On a different but related strand, the influence of social features over the economic performance has been studied in several ways. For instance, Easterly, Ritzen and

Woolcock (2006) argued that the degree of *social cohesion* – "the nature and extent of social divisions" (Easterly, Ritzen & Woolcock, 2006, p.105) – is a key determinant for long-term economic growth. They proxied it by civic participation, interpersonal trust, income distribution and ethnic heterogeneity; and found that countries with higher social cohesion have better institutions, which leads to higher growth rates. On a similar path Rodrik (1999) focused on the resilience side of self-sustained growth and argued that countries with better *conflict management* institutions were able to sustain growth through crises or at least *limit the damage* and quickly retake high growth rates.

In the realm of NR rich countries, explanations given for the successful development trajectories of the countries mentioned above often emphasize the role of knowledge. For Keith Smith (2007) three broad mechanisms have played a central role: "Development through knowledge upgrading and investment strategies in resource-based industries; Development through the leveraging of resource bases into downstream industries; and Knowledge creation via knowledge infrastructures" (Smith, 2007, p.8).

Simon Ville and Olav Wicken have carried out extensive research on the topic of knowledge economy (KE) and Natural Resource Based (NRB) development and according to them, Australia and Norway managed to continually reinvent and extend their resource products and industries, which providing them new sources of growth and economic stability. Both embraced the importance of knowledge, and developed "capabilities to transfer technology and knowledge from other (leading) economies, as well as local scientific organizations relevant for NRBI" (Ville & Wicken, 2012).

Furthermore, every Natural Resource Based Economies (NRBEs) that successfully transited into a dynamic knowledge economy, not only firmly believed in the importance of useful knowledge and technology for welfare and progress, but also were able to build institutions and organizations to access existing knowledge and the creation of new scientific knowledge relevant for problem-solving in NRBIs. And perhaps even more important they created institutions to promote interaction between these organizations and NRBI firms (Ville & Wicken, 2015). In other words, they developed technological capabilities.

Moreover, recent research points to these very same aspects for developing NRBEs successfully overcome the negative effects of resource exploitation, avoid both the curse and middle-income trap, and emulate the success of the successful NRBEs listed above (Alvarez & Labra, 2013). According to Álvarez and Labra (2015), openness, promotion of physical investment and FDI would all play a major role. However, more important would be the development of technological capabilities.

The successful economic catch-up of Chile since the mid-1980s has usually been attributed to the neoliberal reforms implemented during the dictatorship (De Gregorio, 2004; Lüders, 1998). However deep and important those reforms might have been, they belong to the realm of proximate causes (Maddison, 1988). Or under the conceptual

institutional framework of Williamson (Williamson, 2000), to the type of economic institutions modifiable on the very short term, but which depend on the pre-existence of a deep-rooted institutional environment and informal institutions to have any effect. This suggests that there must have been something previous to the reforms that made them work. Otherwise, if the reforms were the fundamental cause of, how could one explain that the rest of the Latin American countries that have adopted it since, have not experienced the same transformation (Andersson, 2009).

In terms of technological capabilities, Álvarez and Labra (2015) suggest that although Chile has converged with NR leaders in terms of GDP, this has been prominently based on foreign technology, physical assets and the development of limited absorptive capacities. Chile has been able to incorporate foreign technology and operate large NR firms in a competitive way but has not been able to make the leap to foster innovation and the creation of new useful knowledge. In their view Chile needs to improve its scientific capacity, importantly increase investment in R&D, and redirect education towards innovation, as well as overcome crucial social weaknesses, particularly regarding high inequality and the quality of institutions (Álvarez & Labra, 2015).

Esteban Perez Caldentey (2012) shares the prognosis and remarks that although Chile has converged in terms of GDP per capita with the advanced economies, the formation of social capabilities is still a pending task. In this regards he perceives divergence instead of convergence. He attributes the current productivity stagnation and the deterioration of Chile's long-run trends to an excessive focus on "nominal stability" in detriment of the development of productive capabilities and the diversification of the productive structure (Pérez Caldentey, 2012). The NRBIs have generated limited linkages within and between industries, and between the private and public spheres. This has contributed to the creation of a narrow firm capability base, and slow and uneven progress of social capabilities (Pérez Caldentey, 2012).

Regarding education and human capital formation, the main indicators reflect an important delay with respect to the more developed countries. For example, the level of public expenditure in education as a percentage of GDP is low compared to OECD countries and Latin America (3.4% vs 5.2% and 4.0%). The quality of education is also deficient when compared to OECD. More importantly, the production of graduates in scientific and technological fields is only 22% that of the OECD (Pérez Caldentey, 2012). Moreover, "the inequality of access to education, which has widened over time within levels of education and within income levels for the same educational group, makes it more difficult to create a broad-based social capabilities base" (Pérez Caldentey, 2012).

Like these studies, most research on the Chilean experience centers on the proximate causes of the "growth miracle of between the mid-1980s and late-1990s and the recent slowdown, praising the pro-market reforms for the former (Agosin & Ffrench-Davis, 1995; De Gregorio, 2004; Fuentes, Larraín & Schmidt-Hebbel, 2006; Lüders, 1998), while blaming the same neo-liberal policies for the latter (Palma, 2012; Paus, 2014).

They do not consider the path-dependency of the development process. Notable exceptions, that take a longer-term approach to the economic performance of Chile are Andersson (2009) centering on the role of the land reforms and Rodriguez Weber (2015; 2015a, 2015b, 2017) on the long-term inequality and role of the elites over the economy. However important, these studies are still arguably too single-factored and lack a multidimensional approach.

All in all, the case for technology, knowledge and innovation playing a central role in development seems to be a strong one. Moreover, it appears important – although not in equal degree – for different development strategies. In particular, investment in education and R&D, and efforts on innovation seem to be crucial in order to close the gap and catch up. However, what is still far from clear are the fundamental social features that allow for some countries to tap into this opportunity, while others do not. Why some countries invest in these activities and develop the "right knowledge institutions" and others do not. In the words of Andersson and Palacio (2017):

> *"We need to dig deeper to understand whether and to what extent growth might be sustained and this is why we need to find ways to grasp the capabilities that enable economies to embark upon a sustained development path"* (Andersson & Palacio, 2017, p.14)

This thesis takes this challenge with a particular focus on NR rich countries by examining the case of Chile over the long-run under the lens of Social Capabilities.

2.2. Theoretical Approach

To face this challenge, Andersson and Palacio (2017) propose a conceptual framework and a set of indicators to study the role of social capabilities on development. Following Abramovitz they identify four interrelated dimensions that account for people's basic attitudes, the political institutions and the social capacity to exploit modern technology. These four dimensions are: transformation, inclusion, autonomy and accountability, and are "aimed to reflect the deeper forces at play for countries' ability to build resilience to economic shrinking and achieve sustainable catching up" (Andersson & Palacio, 2017, p.15). Figure 2.1 presents a scheme of the conceptual framework.

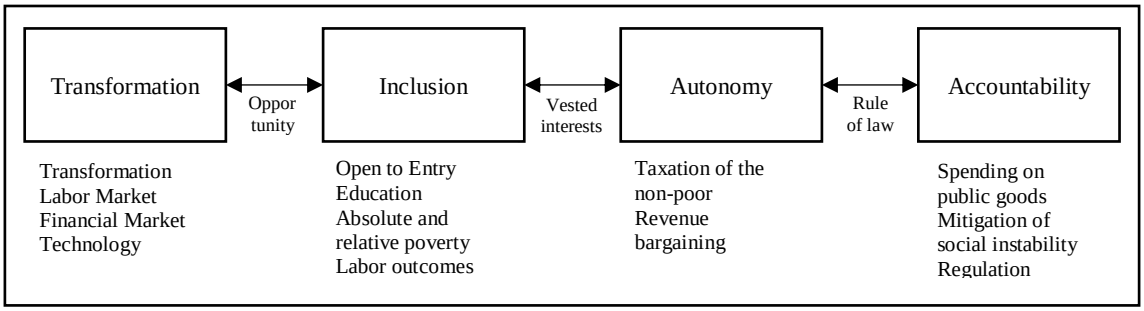

Figure 2.1: Conceptual Framework of Social Capabilities: The four dimensions (Andersson & Palacio, 2017)

Transformation refers to the capacity to exploit modern technology by continually allocate resource to activates with higher knowledge content, and the consequent change of the economic structure. Of particular importance for catch-up, although not enough, is the agricultural transformation. The process of transformation also requires the diversification of the economy, the expansion of good employment in the formal market, and the development of financial structures. **Inclusion** is fundamentally related to the capacity of the system to provide incentives and access to productive resources to larger segments of the population. In concrete, this is translated to a process of pro-poor growth. As such it is mainly about differences through social groups, particularly in the labor market outcome, but also in access to fundamental aspects of the modern life, such as the formal labor market, quality education and health, and credit, among others (Andersson & Palacio, 2017).

There is controversy about what should be the exact role of the State in the economic development, but the importance of its well-functioning is undebated. In this regard, this framework identifies two key aspects to account for the good operation of the State with respect to its role on fostering economic growth: Autonomy and accountability.

Autonomy of the State refers to the ability of it (the State) to isolate itself from elites' interests, while providing them (elites) conditions and incentives to invest in the national development. The **accountability** dimension points to the importance of "quality of governance", but more specifically to the capacity of the state to increasingly deliver quality public goods:

> *"A country that invests little in education and infrastructure or invests less in its younger generations while favoring the seniors and the already well-to-do might be an example of low levels of accountability"* (Andersson & Palacio, 2017, p.20).

Fundamentally, this approach proposes that without the development of these underlying social features, growth will not be sustainable. Episodes based on just capital formation or external trade shocks will not last and unequivocally will give pass to periods of stagnation or even shrinking (Andersson & Palacio, 2017).

The process of capability building is characterized by the ability of the system to simultaneously and progressively "fight and win three battles", namely: Increase productivity and "adapt the structure of the economy to continuous technological change" while granting formal access to a greater number of people and groups previously excluded; keep vested interests at bay without eroding the modernization and nation-building properties of the State, and the institutionalization of this process isolating it from the particular views and interests of those transitorily in power.

Now, in practice the Framework (Andersson & Palacio, 2017) proposes some specific indicators to measure and characterize each dimension. For **transformation**, the main indicator would the degree of structural transformation and particularly in agricultural, measured by the "agricultural gap" which is the ratio between the agricultural shares of labor force and GDP. In addition, it proposes that the emergence of larger firms and the availability of decent employment, as well as the increase of savings rate and deepness of the financial market would be a clear indication of the structural change.

Inclusion is about access and the distribution of growth, and the main indicators here are market income inequality ones, such as the Gini or Palma ratio, and other specific income distribution ratios that allow understanding its evolution in detail. Also, non-income measures of health and poverty are important, as well as access to education and credit.

To analyze the **autonomy** of the State, the framework proposes to study its (the State) funding sources and the independent functioning of key specific institutions. Thus, in particular measures of the progressiveness of the taxation system and independence of the central bank would make for good instruments. Furthermore, measures of net public wealth and trade policies would also indicate the level of autonomy of the state.

On the other hand, the **accountability** of the state would be reflected on the quality of governance, its actual capacity to provide public goods and the volatility of social spending as a measure of its commitment.

Chile presents some advantageous features to be examined under this lens as both a developing country and a NR rich one as well. First, the fact that Chile has made strong economic progress augurs the possibility to extract lessons from all the different economic periods, the bad ones, the crises, and the sustained good economic performances. Second, the country has extensive data sources that allow for the proper characterization of the four dimensions, although for some particular indicators, good information is not available, and some alternative proxies are used.

In this context, the **transformation** of the economic structure is characterized by the agricultural gap and shares of GDP and labor of the main economic sectors: Manufacture, Services and Agriculture. Another important indicator of transformation is the process of urbanization (Lewis, 1954). Although not explicitly proposed by the framework, the Economic Complexity Index is also considered in order to characterize the capacity of the economy to embed useful knowledge on the production outcomes,

which is, as seen, an increasingly relevant feature in the transformation of modern economies, and a good predictor of the capacity to achieve sustained growth (Hausmann et al., 2014).

The **inclusion** dimension is mainly characterized by the Gini index and the unemployment rate as measures of the labor market outcome, and access to education. More detailed income distribution, which could indicate the extent of pro-poor growth measures are only available for a more recent period. Access to education is measured by the evolution of enrolment rates (divided by income quintiles for the recent times), average schooling, illiteracy rate and human capital index.

For the **autonomy** of the State dimension, the scarcity of information and the complexity of comparing different taxation systems, make it hard to find or construct a useful measure of the maximum marginal income tax rate since the early 1900s. Instead, four proxies, besides the inflation rate, are used in this research, as follows:

- The top 1% share of income signals the capacity of the "elites" to appropriate a larger (or smaller) share of the national income, mainly through non-market mechanisms (Rodriguez Weber, 2015),
- Tax revenue composition divided into natural resources, direct, and internal and external (trade) indirect taxes. The logic here is twofold: the emergence of a fiscal system, not entirely dependent on trade taxes, is a first indication of autonomy of the state. Then, greater participation of direct taxes would be an indication of more progressive taxation (López, 2011) and therefore greater autonomy.
- For a more recent period, estimations of the Gini index before and after tax are also used as an indication of the progressiveness of the taxation system and the capacity of the State to redistribute.
- Real exchange rate variation, since in the case of Chile, maintaining currency stability was one of the original mandates of the Central Bank.

Finally, for the **accountability** of the State dimension, the evolution of social spending by area and the progressiveness of this provision in terms of the net benefits obtained by each group (taxes discounted) are used as the leading indicators.

This is complemented with information on political participation, although not explicitly proposed by the framework. In particular information for voting rights (adults registered to vote over total adult population), and unionization rate (people unionized over employed labor force) is considered. The rationality here is that spaces for political participation are a common good that must be provided by the State and voting rights and unionizations rights are amongst the most important ones.

Finally, it is important to note that the conceptual framework was originally thought to be used in a cross-section of countries to identify the role of each social capability's dimension on the global income hierarchy. Nevertheless, this thesis argues that it is also

useful to understand and identify key aspects of the long-term economic performance of a particular country through the evolution of these four dimensions.

3. Data and Method

This chapter presents the data collected to characterize the variables selected to represent each dimension presented in the previous section, and the different sources. It also presents the research method to be followed in the empirical research, and the strengths and limitations of both, the data and the research method.

3.1. Data

This research is based mainly on secondary sources, in particular, public databases, articles, and books. With the research question and the conceptual framework just presented in mind, it was necessary to collect data to characterize the economic performance in terms of real GDP per capita and the evolution of the four dimensions of social capabilities – **Transformation**, **Inclusion**, and **Autonomy** and **Accountability** of the State – ideally in terms of the indicators proposed by the framework. The specific indicators and their sources used in this thesis to characterize and analyze each dimension are presented as follows. Unless otherwise explicated, the information is available, at least for the period 1900-2010.

3.1.1. Economic Performance

The economic performance is measured at PPP in 2011 US$, and the information is extracted from the Maddison Project Database 2018 (Bolt et al., 2018). This dataset provides information on Real GDP per capita in PPP and population for all the countries in the world over the very long run, which allows presenting some useful comparisons.

3.1.2. Transformation

The following indicators, with their respective sources, are used to characterize the transformation dimension. The agricultural gap is calculated from the shares of the labor force and agriculture provided by the Database from the Economic History and Cliometrics Lab from the Economics Institute of the Pontifical Catholic University of Chile (PUC) (Díaz, Lüders & Wagner, 2010). The shares of GDP and labor of the main economic sectors (manufacture, services, and agriculture) are also extracted from the PUC database (Díaz, Lüders & Wagner, 2010), as well as the urbanization rates (urban

and rural populations) and the urban concentration. Finally, the Economic Complexity Index (1964-2016) is provided by Observatory of Economic Complexity Website (OEC) (Simoes & Hidalgo, 2011).

3.1.3. Inclusion

The inclusion dimension is characterized by the following indicators, with their respective sources. The Gini index for the long-run was extracted from the estimations made by Javier Rodriguez Weber (JRW) (Rodríguez Weber, 2015a), while for the more recent it was complemented with the estimates of the United Nations Development Program (PNUD, 2017). Unemployment rate for the long-run was extracted from the PUC database. Income distribution by decile (1987-2013) was provided by Socio-Economic Database for Latin America and the Caribbean (SEDLAC) (Socio-Economic Database for Latin America and the Caribbean (CEDLAS and The World Bank)). Regarding education, figures for the long-run on enrolment rates by educational level, average schooling years, illiteracy rate and human capital index were extracted from the Lee and Lee database (2016), while enrolment rates by income quintiles for the period 1990-2013 were obtained from Acción Educar (2016). Finally, the public and private enrolment by educational level were extracted from PUC database (Díaz, Lüders & Wagner, 2010).

3.1.4. Autonomy of the State

The autonomy of the State dimension is characterized by the following indicators, with their respective sources. The top 1% share of national income for the long-run (1900-1970) was extracted from the from the estimations of JRW (Rodríguez Weber, 2015a), while for more recent periods two other estimates are presented: Friedman and Hofman (2013) for the period 1980-2012, and Lopez, Figueroa and Gutierrez (2013) for the period 2005-2010. The tax revenue composition, inflation rate, and real exchange rate were extracted from the PUC database (Díaz, Lüders & Wagner, 2010). Finally, Gini index estimations pre and after tax for the period of 1990-2015 were extracted from PNUD (2017).

3.1.5. Accountability of the State

The accountability of the State dimension is characterized by the following indicators, with their respective sources. Social expenditure by function on the long-run was extracted from the estimations made by Arroyo and Lindert (2017) based on the information of the PUC database (Díaz, Lüders & Wagner, 2010) and the estimate by

Engel, Galetovic, and Raddatz (1999). Estimations for the progressiveness of the social programs and taxation are available for the period 1965-2013 and was also extracted from the estimates by Arroyo and Lindert (2017). Information on political participation in terms of voting rights, voter turnout and unionization was obtained from the PUC database (Díaz, Lüders & Wagner, 2010). The latter is complemented by information from the Statistic Yearbook of the Work Direction of Chile (DT) (Unidad de Análisis Estadístico, 2016) for the period 1990-2016.

3.1.6. Strengths and Limitations

Chile is one of the developing countries with better economic and social information dating back to the early independence years, beneficiary of a long-dated tradition of recording and documenting (Schmidt-Hebbel, 2017). This has allowed some scholars to put together comprehensive estimations and/or databases like Cariola and Sunkel (1990), Braun, Braun, Briones, Diaz, Lüders and Wagner (2000), Mamalakis (1989), and the most recent one and debtor of the previous ones, the book "Chile 1810-2010: La República en cifras: Historical statistics" by Diaz, Lüders and Wagner (2016).

A substantial proportion of the long-term information used in this research is extracted from a partial public delivery (Díaz, Lüders & Wagner, 2010) of the book by Diaz, Lüders, and Wagner (2016), to which this research did not have access. This source is deemed as a reliable one, since it is a compilation of official records and estimations carried out by renowned scholars, with ample experience on the Chilean economic history, under the umbrella of one of the most prestigious universities of the country. Nevertheless, the later book is the only source of the different criteria considered for the construction of all series and not having access to it imposes a limitation or restriction for the interpretation of the evolution of some indicators.

Regarding data itself, one of the main limitations of this database (PUC) is that, in general, information provided is too aggregated and does not allow getting a full understanding of the underlying processes. However, some scholars working on particular areas have put together estimations that enable getting a fuller picture of the different social and economic process under study in this research (Arellano, 1985; Arroyo & Lindert, 2017; Rodríguez Weber, 2015a).

Although clearly information for more recent periods, particularly since 1990, is of better quality and more reliable, the estimations for earlier periods are reliable and representative of the reality of the country and more importantly its evolution. All scholars have had to make assumptions, but those have been maintained and are consistent throughout the estimation period.

Finally, even considering the limitations aforementioned, all information gathered have allowed to adequately characterize the different dimensions of social capabilities according to the framework, considering the extended period. Moreover, in the few

occasions where alternative measures have been adopted, there are compelling scientific arguments for their validity as to characterize the dimension.

3.2. Method

This research is a case study of the economic performance of Chile, since the early 1900s, under the social capabilities framework proposed by Andersson and Palacio (2017) presented above. The method selected to conduct the research is a comprehensive analytical narrative, where mostly quantitative data – collected from various sources – is discussed within this theoretical framework. First, the evolution of the economic performance and each of the four dimensions are presented and discussed separately. Then everything is discussed together trying to find patterns and comprehensive explanations for the different growth trajectories.

This approach – as well as the framework itself – departs from the understanding that social processes, in particular, socio-economic ones, are always bi-directional. Therefore, this research is exploratory in nature, and the results and implication are derived inductively (Rohne, 2013). Trying to find causal explanations might be useful and suitable for specific cases, but in dealing with multi-layer and multi-dimensional processes, like development, it is better to embrace complexity and try to extract lessons from it instead of oversimplifying, find correlations and learn nothing or very little at the end.

According to Dani Rodrik (2003), the main strength of this method is that allows for making connections between specific growth experiences and growth theories and cross-national empirics, thus filling gaps on the overall understanding of the economic growth process. On the downside, Rodrik (2003) points out that the results of these analytical narratives tend to be of speculative nature. Therefore, these exercises might be seen as "lacking scientific validity".

4. Empirical Research

This chapter presents the empirical research and is divided into two main subsections. The first one describes the economic performance in terms of GDP and catch-up effort with other regions of the world, and the evolution of the four dimensions of social capabilities proposed by the framework, in terms of the indicators detailed for each dimension in the previous chapters. The second subsection discusses the implications of the evolution of the social capabilities' dimension over the economic performance and the potential lessons for the future and other NR rich countries.

4.1. Economic Performance and Social Capabilities

Since the primary purpose of this research is to analyze the economic growth trajectory under a social capabilities lens, this section begins by examining the historical economic performance and its main features in terms of growth rates and "catch-up efforts" with respect to different regions and countries.

4.1.1. Economic Performance

Chile's economic history might be divided into four distinct phases: 1810-1880, 1880-1930, 1930-1973, and 1973 to the present (Lüders, 1998; Meller, 1996). Furthermore, the last phase could be divided into dictatorship (1973-1989) and democracy since 1990. As shown in Table 4.1 performance was slightly better than the developed world between independence (1810) and the great depression (1930). During the next phase, Chile significantly lagged both Latin America and the developed world, while the dictatorship was even worse. During this period Chile grew at a slower pace even than Latin America during its "lost decades" (Easterly, 2001). Nevertheless, by the end of it, and after the debt crisis of 1982-83 Chile began a period of high rates of economic growth that would last until the Asian crisis of 1997. During these, so-called "golden years" Chile's GDP per capita grew at an average of 6%, almost doubling in those 11 years (1986-1997). Overall, during the "democratic" phase, Chile has grown at an average of 3.43%, highly outperforming both the developed world and Latin America.

Table 4.1: Average Real GDP Per Capita Growth by Period (Bolt, Inklaar, de Jong and van Zanden, 2018)

Period	Average per capita Growth			
	Chile	Latin America	Europe	US
1820-1880	1.50%	-	1.08%	1.43%
1880-1930*	1.41%	1.55%	1.11%	1.35%
1930-1972	1.34%	2.49%	2.06%	2.37%
1972-1990	0.95%	1.29%	2.15%	2.19%
1990-2016	3.43%	1.27%	1.19%	1.37%
1986-1997	5.98%	0.87%	1.83%	1.92%
1997-2016	2.42%	1.24%	1.15%	1.27%

*1900-1930 for Latin America

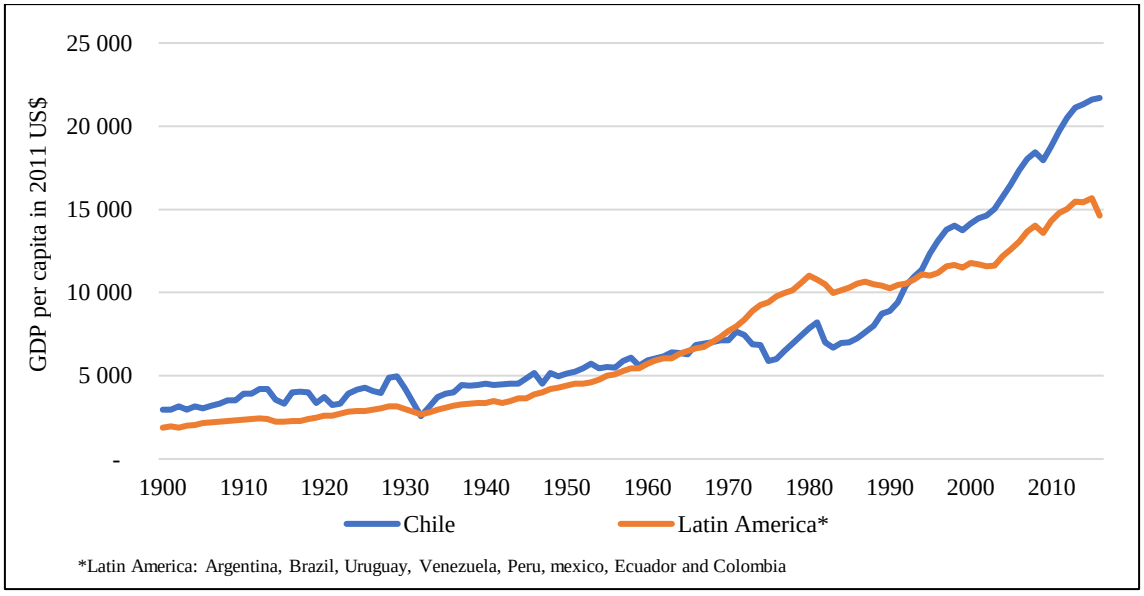

Figure 4.1: Real GDP Per Capita in 2011 US$, 1900-2016 (Bolt, Inklaar, de Jong and van Zanden, 2018)

Comparing the specific period of 1986-1997 allows grasping its vital relevance for the Chilean economy, as it outpaced Latin America and the developed world by 5% and 4% respectively. And even when the pace has significantly slowed down since then, Chile has still managed to outperform both, thus keep up the effort to catch up and separate from the rest of the sub-continent. Nevertheless, on the long run, in terms of catching up (Figure 4.2), Chile is just back to the relative levels (vs. Europe and the US) registered back in the period between 1910 and 1930.

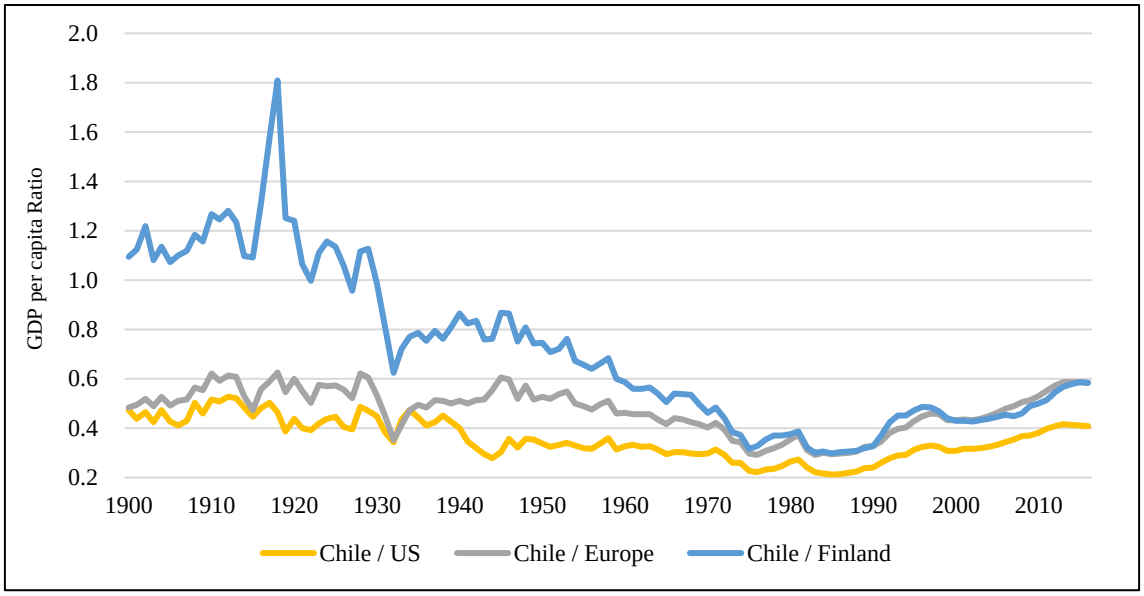

Figure 4.2: Catch-Up Effort, 1900-2016 (Bolt, Inklaar, de Jong and van Zanden, 2018)

The comparison with Finland – a small and NR rich country – allows putting Chile´s trajectory into perspective. Up until 1930, Chile had an income per capita slightly higher than Finland (almost twice during the 1910s, the nitrates boom best years). Since then, while Finland has successfully caught up to the rest of Europe, the Chilean GDP per capita is only 60% of it, the same ratio of the period 1910-1930. The question now is what happened with Chile?

4.1.2. Transformation

This dimension is related to the capacity of the country to exploit modern technology by continually allocating resources to more knowledge-intensive activities and the consequent change of the economic structure.

The whole economic history of Chile could be written in terms of natural resources (Mamalakis, 1967; Meller, 1996, 2002). In particular, the exploitation of mineral resources (nitrates, gold, silver, and copper) has served at least three vital socio-economic purposes. First, it has been the main – if not the only – growth engine (Meller, 1996). Second, it has been the primary connection to the international economy (Meller, 1996). And third, it has been the leading financier of the State (Mamalakis, 1967).

From 1880 to 1930 nitrates exports dominated the economy, while between 1940 and 1971 that role was played by copper exports. In both cases, the main extraction companies were owned by foreign capitals, British and the US respectively. Figure 4.3 shows the historical relevance of mining exports. Ever since 1880 up until 1970 they were, on average, over 80% of the total exports.

Only after 1971 mining exports started to lose relative relevance, nevertheless, averaging a high 55% of the exports ever since. This drop is only explained partially by prices (copper), as observed in Figure 4.4.

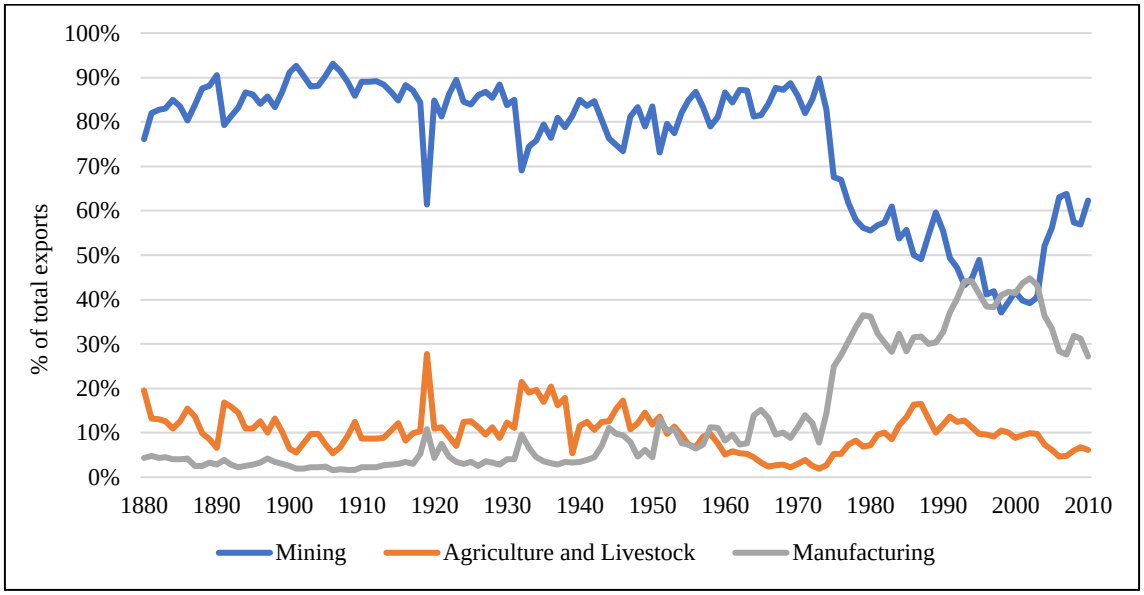

Figure 4.3: Exports by Economic Sector as % of Total Exports, 1880-2010 (Díaz, Lüders & Wagner, 2010)

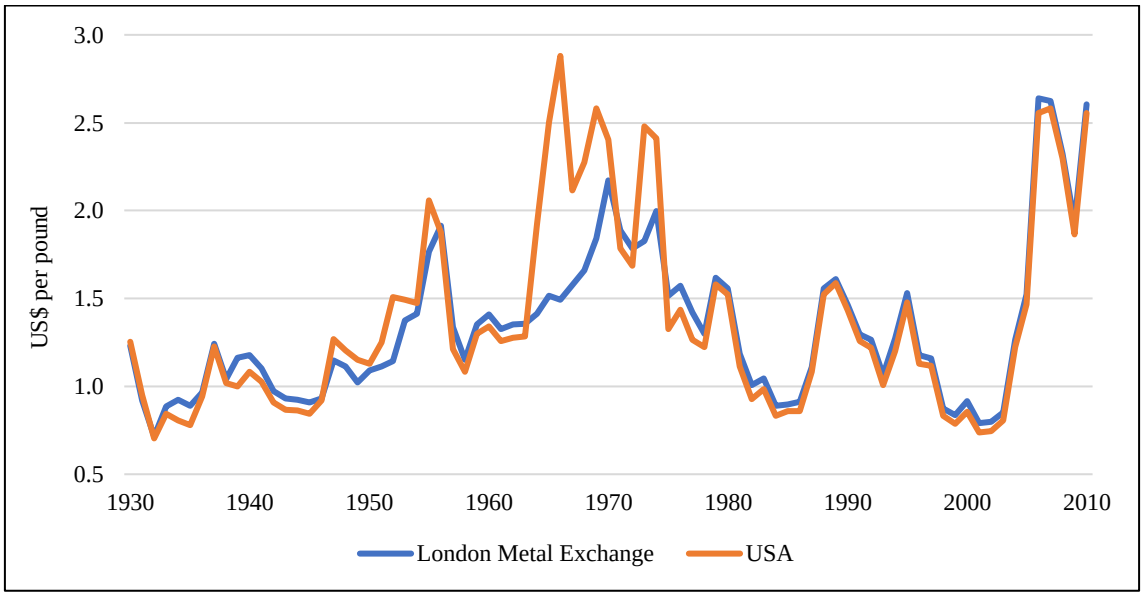

Figure 4.4: Copper Price, 1930-2010 (Díaz, Lüders & Wagner, 2010)

However important mining has been for the Chilean economy, the persisting lack of a national strategy around it is remarkable. Instead until the 1960s, the mining industry was seen by the State as a mere revenue provider, first through trade taxes to the nitrates

industry, and then through specific taxations to the copper industry dominated by US capitals (Mamalakis, 1967; Meller, 2002).

With this background, let's dig into the transformation dimension of the Chilean economy. In the first place, in terms of agricultural transformation, Figure 4.5 shows how between 1900 and the early 1970s the agricultural gap remained high, meaning that the sector was highly unproductive compared to the rest of the economy. According to Rodriguez Weber (2015), gross agricultural output only grew during the period by frontier expansion (land grabbing), and even so during the 50 years after 1929, it grew less than the population. Andersson (2009) argues that there was a substantial lack of incentives to increase productivity due to the high land-to-labor ratio.

Despite the relative stability of the ratio, this was arguably a period of essential changes in the agricultural sector that would, in the long run, lead to the great transformation observed in Figure 4.5 since the mid-1970s.

During the first part of the 20th century, Chilean agriculture was carried out in large estates (haciendas), and labor was ruled by the pseudo-feudal (Rodriguez Weber, 2015) institution of *inquilinization*. Under this scheme, the landowner secured a resident labor force by providing comparatively higher living standards than those received by migrant workers (Andersson, 2009).

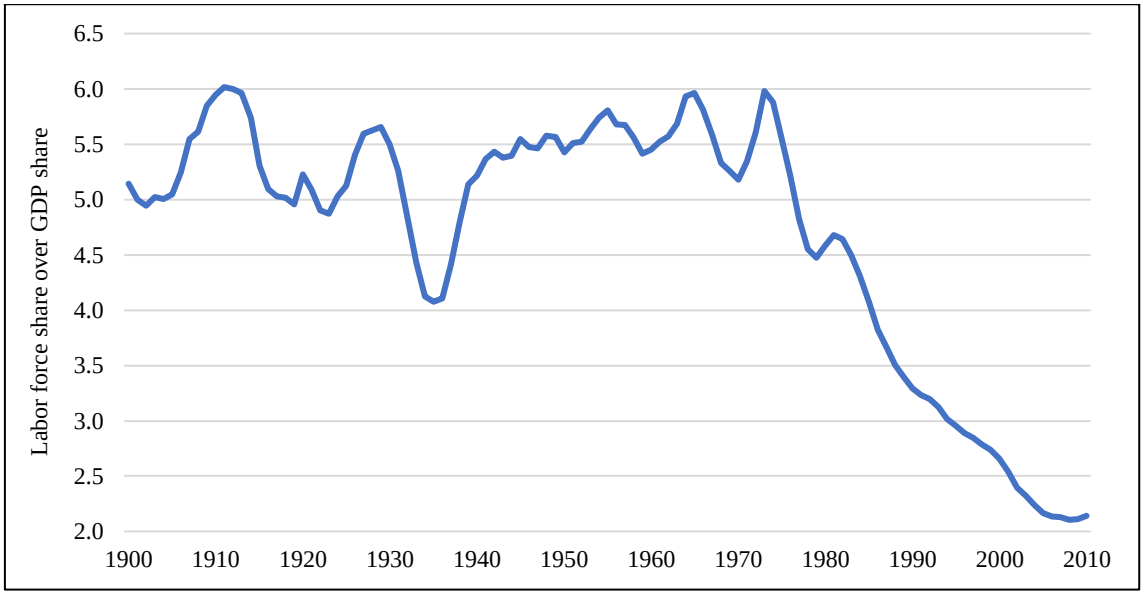

Figure 4.5: Agricultural Gap, 1900-2010 (Díaz, Lüders & Wagner, 2010)

The Great Depression hit hard on Chile, in fact, it was one of the countries most affected by it. Its GDP and exports reduced by more than 60% and 70% respectively (Lüders, 1998; Meller, 1996), and although the recovery was relatively fast, maintaining the high reliance on the exports of nitrates and copper was not a realistic option anymore (Meller, 1996). Furthermore, the shortage of imported products led naturally to

a reallocation of resources to manufacturing industries, and so Chile, as well as other Latin American countries, adopted an ISI strategy already in the 1930s, two decades before its formalization by the CEPAL (Meller, 1996).

For agriculture, this meant a deterioration of the power held by the land elites in favor of the new urban ones and a rising of the middle sectors (Rodriguez Weber, 2015). But, although the GDP share of manufacturing doubled in the 30 years span between 1940 and 1970 (Figure 4.6), this emerging sector did not absorb labor force conversely. In fact, manufacturing labor force share slightly decreased during this phase.

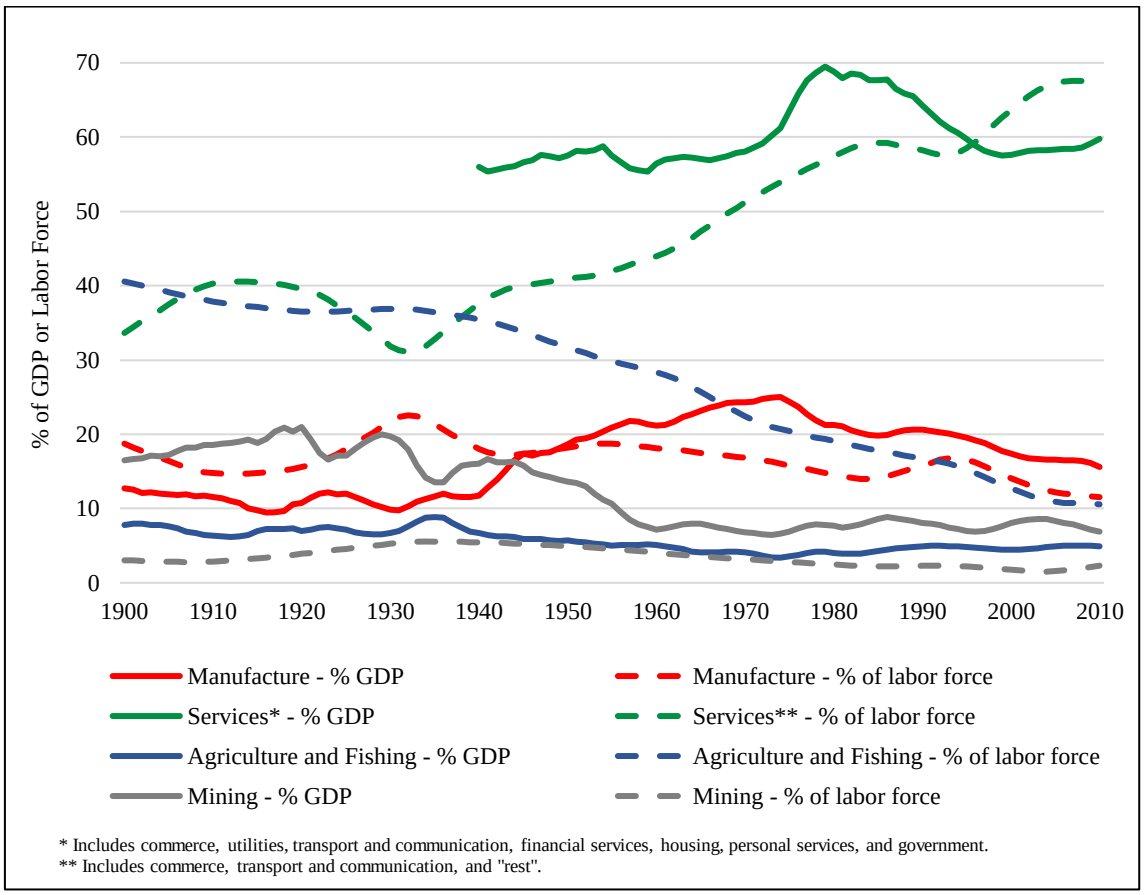

Figure 4.6: GDP and Labor Force Shares by Economic Sector (5-year moving averages), 1900-2010 (Díaz, Lüders & Wagner, 2010)

This, together with the increase in population growth, meant that rural labor became more abundant and the necessity to secure workers fainted. It also meant that, despite the rise in the demand for food, the lack of incentives to invest in technology to increase productivity remained (Andersson, 2009). In time this situation became a constraint for the industrialization strategy and governments began to contemplate land tenure reforms by the mid-1950s (Meller, 1996; Rodriguez Weber, 2015).

Meanwhile, the ISI failed to reach its goals, namely: achieving economic independence from the international markets and reducing the external vulnerability (Meller, 1996).

For Meller (1996) this is accountable over two main factors. First, the lack of liquidity and shortage of heavy machinery until the end of World War II restricted the strategy to industries with low technological content. Second, the process lacked any State direction or orientation of incentives to industries where Chile could hold some potential comparative advantages. In the end, price distortions and high protection generated an oligopolistic industrial structure that created little employment and was highly inefficient in the use of resources (Meller, 1996).

For Andersson (2009), the process of land reform – initiated by Jorge Alessandri in 1962 and deepened by Eduardo Frei since 1964 – where "land-holdings of 'excess size' and of low productivity now became subject to expropriation and turned into settlements" (Andersson, 2009, p.28), explain an important part of the successful growth experience of Chile since the mid-1980s. In the short run, productivity growth for the sector more than doubled in the next seven years after 1964 compared with the precedent decade (4.4% vs. 2.1%). And even when the dictatorship changed the direction of the reform – and in many aspects reversed it –, an important consequence of the reform process was that "inescapably altered deep-rooted institutions and attitudes towards agricultural intensification" (Andersson, 2009, p.28), which in the long run were vital for the agricultural transformation since the mid-1970s.

Since 1973, the manufacturing share of GDP decreased to levels below 15%, while the agricultural gap has significantly closed. Labor productivity increased almost five-fold in agriculture, while for the overall economy and the manufacturing sector only grew 70% and 30% respectively. Labor share in both manufacture and agriculture experienced a decrease, from 16% and 21% to 11% and 10% respectively. Labor share of the service sector, on the other hand, increased from 18% to 32%, while its share of GDP has remained steadily around 40%, and its productivity multiplied by 4.

Another important aspect of the process of structural transformation is urbanization (Lewis, 1954). In Chile, between 1900 and 2010 urban population went from 45% to 87% (Table 4.2), with the greatest effort concentrated in the 40 years span between 1940 and 1980, coincident with the core of the ISI phase. The urban population remained concentrated in the biggest cities (Table 4.3), as the five biggest ones went from hosting 49% to 53% of the total urban population. In particular, Santiago, the country's capital, highly increased its share from 25% in 1907 to 42% in 2002.

Table 4.2: Urban and Rural Population, 1900-2010 (Díaz, Lüders & Wagner, 2010)

Year	Urban Population		Rural Population	
	Mill. ppl.	%	Mill. ppl.	%
1900	1.22	45.0	1.47	55.0
1910	1.39	43.0	1.84	57.0
1920	1.72	46.0	2.01	54.0
1930	2.12	49.0	2.17	51.0
1940	2.64	53.0	2.38	47.0
1952	3.57	60.0	2.36	40.0
1960	5.03	68.0	2.35	32.0
1970	6.68	75.0	2.21	25.0
1982	9.32	82.0	2.01	18.0
1992	11.14	83.0	2.21	17.0
2002	13.09	86.6	2.03	13.4
2010	14.87	87.0	2.23	13.0

Table 4.3: Urban Concentration – Five Biggest Cities, 1895-2002 (Díaz, Lüders & Wagner, 2010)

Year	Concentration of Urban Population - Five Biggest Cities (% of Urban Population)					
	Santiago*	Concepción	Viña del Mar	Valparaiso	Temuco	Total
1895	21.3	4.1	0.9	10.0	0.6	**36.9**
1907	24.5	5.1	1.9	11.7	1.2	**44.3**
1920	30.2	5.0	2.1	10.6	1.7	**49.4**
1930	33.7	5.0	2.3	9.1	1.7	**51.8**
1940	37.2	4.6	2.5	8.0	1.6	**53.9**
1952	39.5	4.9	2.4	6.1	1.4	**54.3**
1960	39.7	4.6	2.3	5.0	1.4	**53.1**
1970	43.6	4.6	2.7	3.8	2.2	**56.9**
1982	41.7	5.0	2.8	2.9	1.7	**54.1**
1992	42.4	5.1	2.7	2.5	1.9	**54.6**
2002	41.5	5.1	2.4	2.0	1.7	**52.7**

* Santiago contains what is today known as the "Great Santiago" (Provinces of Santiago. Cordillera and Maipo)

Finally, the evolution of the complexity index of the Chilean economy (Figure 4.7) provides a different way to see the evolution of the economy during the last 50 years. The indicator peaked during the mid-1960s to early 1970s, when the ISI strategy phase was at its heights. Since the dictatorship took over and in particular after the crisis of 1975, there is an evident decline, as the country rapidly abandoned its industrial efforts and re-focused on the exportation of natural resources. Then, with the return to democracy, the combination of greater social stability and the favorable conditions for foreign investment left by the dictatorship, the economy went through a period of

diversification and complexity increased until the early 2000s. Nevertheless, since then, a steep decline is observed to currently lie at its lowest point and in a clear downward trend. However, in the global context, Chile has only fallen from the 65th spot in 2004 to the 69th in 2016.

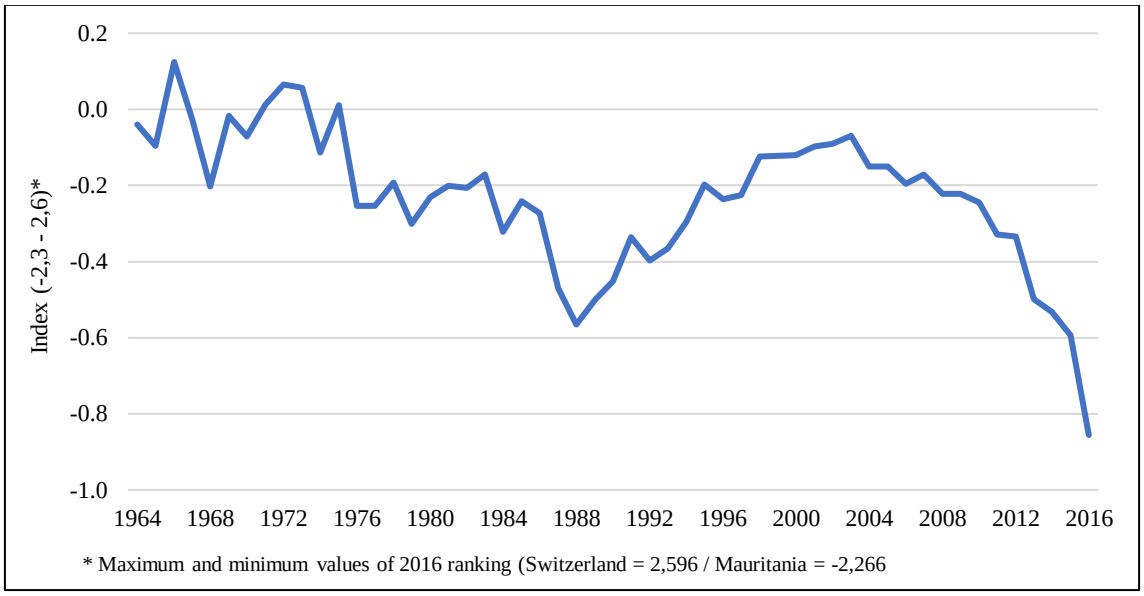

Figure 4.7: Economic Complexity Index, 1964-2016 (Simoes & Hidalgo, 2011)

All in all, the long-term evolution of this dimension shows two partial transformations. On the one hand, during the ISI phase, the economic structure diversified, but the industry remained highly inefficient and dependent on the support of the State. The period arguably served to create specific capabilities on production and investment, but with firms unexposed to the international markets they never reached the point to develop innovative capabilities (Kim, 1980). It could be argued that this period formed the basis of the new entrepreneurial class that emerged in the 1970s and 80s and is usually accounted for the later "golden years" (Montero, 1990).

These capabilities were then displayed in the areas where Chile has had historical comparative advantages: mining and agriculture. In mining, the change of the mining code and a series of tax benefits succeeded in attracting investment to the big mining industry; while in agriculture, the conditions left by the land reform and the neo-liberal reforms both combined to produce a significant transformation on the sector (Figure 4.5) (Andersson, 2009). Land ceased to by a measure of status and became a business.

4.1.3. Inclusion

This dimension is related to the level of access to the formal economy and the conditions to participate in a productive way. This, in turn, is determined by the

availability of specific public goods like education and credit. It also refers to the distribution of the outcomes of the economic activity of the country.

By the end of the 19th century, the Chilean society was dominated by a small aristocratic elite, similar to the situation of England more than a century before. This aristocracy, composed mainly by landowners, was in absolute control of the whole political, economic and social forces: An "Oligarchic Republic" (Rodriguez Weber, 2015).

However, income inequality was falling (Figure 4.8) and the 20th century began with inequality at a relatively low level in historical terms. According to Rodriguez Weber (2015), this is explained by the impact of frontier expansion. As Chile expanded both to the north and south, people migrated to the north attracted by the relatively high wages offered by the nitrates industry and to the south to occupy land that up to that point has held by the Mapuche (the indigenous people of southern Chile).

Moreover, the debilitation of the elite after the Pacific war (1879-1883) led to foreign capitals, mainly British, to take control of the nitrates business. Thus, an important share of the income ended up in the hands of the state (via trade taxes) and foreign companies, instead of the Chilean elite (Rodriguez Weber, 2015).

Nevertheless, the egalitarian tendency reversed sharply as the Chilean elites regained ground and took over the nitrates business, monetary policy (or lack of it) led to inflation and the deterioration of real wages, and the property right of the lands taken from the Mapuche were regularized to favor the great landowners (Rodriguez Weber, 2015). Although Chile hardly grew during 1900 and 1930, inequality soared to reach historic levels.

The ISI phase, inaugurated by the Great Depression, came with an overall remarkable decreased in income inequality to reach all-time-low levels in the early 1970s under the socialist government of Salvador Allende. Rodriguez Weber (2017) call this period "the mesocratic republic", characterized by a growing importance of the middle sectors both in political and economic terms.

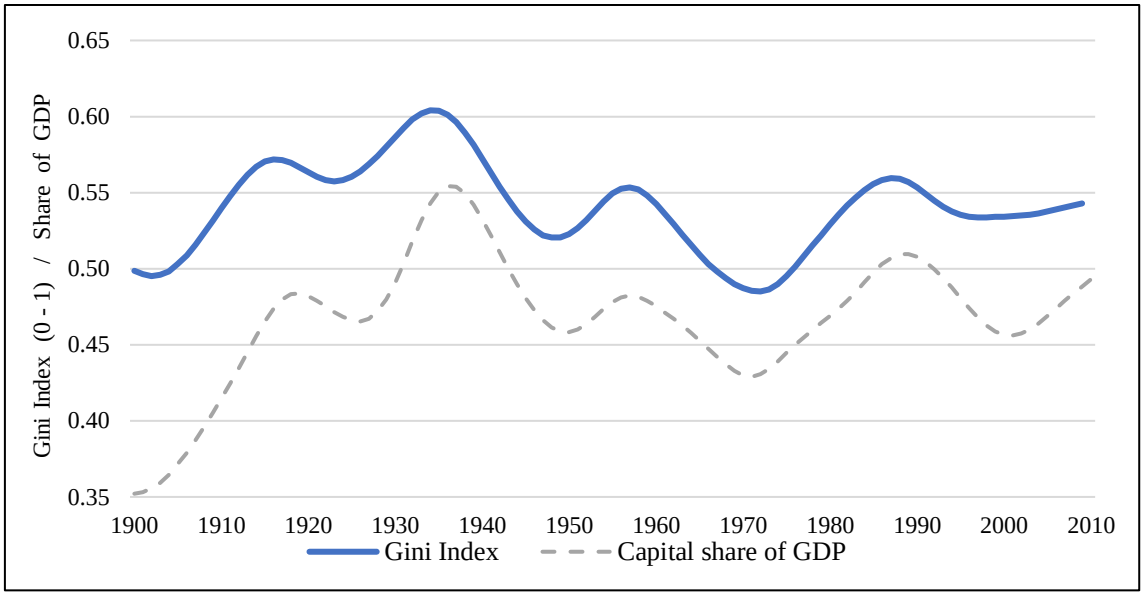

Figure 4.8: Gini Index and Capital Share in GDP, 1900-2010 (Rodriguez Weber, 2015 and Díaz, Lüders & Wagner, 2010)

Note: This Gini index was estimated (Rodríguez Weber, 2015a) utilizing different methods for different periods. From 1860 to 1970 income inequality was estimated by constructing dynamic social tables, one for the period 1860-1929 and other – more detailed – for 1929-1970. The period from 1970 to 2009 was estimated from household surveys.
The curve is the result of splicing the different series using the Hodrick-Prescott filter. The result is considered a reliable estimation to be used in a historical analysis of the country's inequality evolution and – although less so – of the inequality level at any given point.

The dictatorship inaugurated a new era of increasing inequality as a direct result of the policies implemented that directly favored the elites (Contreras & Ffrench-Davis, 2012; Ffrench-Davis, 1999). During this period poverty rocketed (Arellano, 1985, 2012; PNUD, 2017; Rodríguez Weber, 2017). Unemployment which was historically low, with an average of 6.6% between 1925 and 1972 despite a short period of high rates after the Great Depression, rose rapidly to 22% in 1976 and then again to an all-time high of 27% in 1983. The average of the period was 16% never dropping below 10%, except for the last year (1989) when reached 8%. Then, during the democratic phase, unemployment has typically remained low, averaging 8% and never rising beyond 10%.

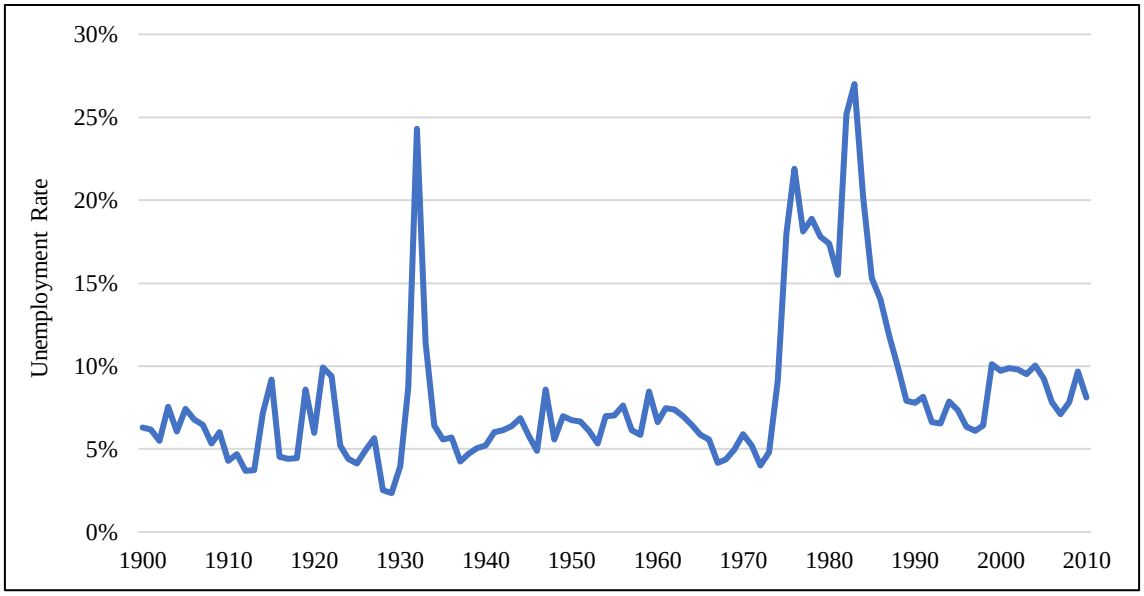

Figure 4.9: Unemployment Rate, 1900-2010 (Díaz, Lüders & Wagner, 2010)

More accurate and detailed information on income inequality is available since 1987 (Table 4.4). Inequality increased in the first period until the year 2000, then receded slightly by 2006 and stabilized around the same level of the late dictatorship years until today. This only marginal overall decrease in income inequality since democracy has happened despite the fact that for most of the period a progressive center-left political coalition, with explicit intentions to improve social justice, has governed Chile.

The distribution ratios presented in Table 4.4 help understanding what exactly has happened between different segments of the society since 1987. The alternative inequality measure proposed by José Gabriel Palma, "the Palma ratio" – the ratio between the income shares of the top 10% and bottom 40% – shows a greater improvement between 1990 and 2013. This together with the analysis of the other ratios lead to the conclusion that the redistribution process appears to have been from the top decile to the very bottom, indicating a pro-poor growth process (Ravallion & Datt, 1999).

Table 4.4: Income Distribution Ratios, 1987-2013 (SEDLAC (CEDLAS and The World Bank) and PNUD, 2017)

Year	Share of Deciles										Ratios		Gini (PNUD)
	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	10/1	Palma	
1987	1.2	2.2	2.9	3.8	4.7	5.9	7.6	10.3	16.0	45.3	37.7	4.48	-
1990	1.2	2.2	2.9	3.7	4.6	5.7	7.4	9.9	15.4	47.0	38.2	4.70	0.54
1992	1.5	2.4	3.2	4.0	4.9	6.1	7.7	10.2	15.0	45.0	30.9	4.07	-
1994	1.3	2.2	3.0	3.8	4.7	5.9	7.5	10.2	15.6	45.8	35.4	4.46	-
1996	1.4	2.3	3.1	3.9	4.9	6.1	7.8	10.4	15.7	44.4	32.7	4.13	0.55
1998	1.3	2.3	3.1	3.9	4.8	6.0	7.7	10.3	15.7	44.9	35.0	4.28	-
2000	1.3	2.3	3.1	3.9	4.9	6.0	7.6	10.1	15.2	45.6	34.8	4.28	0.57
2003	1.4	2.5	3.2	4.0	5.0	6.1	7.7	10.1	15.0	45.0	31.9	4.06	0.55
2006	1.6	2.7	3.5	4.4	5.3	6.5	8.1	10.6	15.5	41.9	26.4	3.46	0.53
2009	1.6	2.8	3.6	4.4	5.3	6.4	8.0	10.3	14.9	42.7	26.7	3.47	0.54
2011	1.7	2.9	3.7	4.5	5.4	6.4	8.0	10.4	15.3	41.7	24.5	3.27	0.53
2013	1.8	2.9	3.7	4.6	5.5	6.6	8.0	10.3	15.2	41.4	23.6	3.19	0.53

Palma Ratio: Share of top decile divided by the share of the bottom 40%

In terms of access to education and human capital formation, during the twentieth century, Chile experienced a considerable decline in the illiteracy rate from 47% in 1895 to 2.5% in 2010 and an important increase on average schooling years from 1.3 to 10.5 years (Table 4.5). Full primary education enrolment was achieved in the mid-1950s, while around that same time enrolment in secondary education began to expand to current levels of around 85%. Tertiary education experienced an important increase in enrolment since the late 1970s (Figure 4.10).

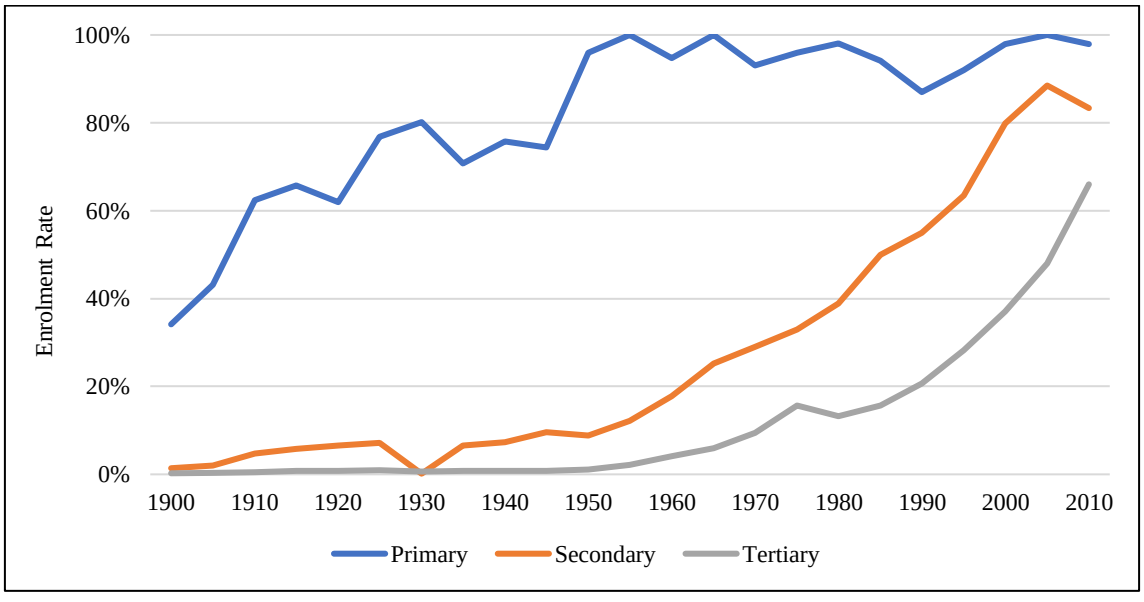

Figure 4.10: Enrolment Rate by Educational Level, 1900-2010 (Lee & Lee, 2016)

Table 4.5: Illiteracy Rate, Average Years of Schooling, and Human Capital Index, 1900-2010 (Lee & Lee, 2016 and Díaz, Lüders & Wagner, 2010)

Year	Illiteracy Rate 15+	Average Years of Schooling (25 to 64)				Human Capital
		Primary	Secondary	Tertiary	Total	
1900*	47.1	1.13	0.16	0.02	**1.30**	1.17
1910*	49.7	1.78	0.34	0.03	**2.15**	1.27
1920	36.7	2.44	0.55	0.05	**3.05**	1.41
1930	24.7	3.03	0.77	0.07	**3.87**	1.50
1940	26.7	3.44	0.93	0.08	**4.45**	1.58
1950*	16.6	3.68	1.03	0.09	**4.80**	1.63
1960	16.4	3.80	1.13	0.07	**5.00**	1.69
1970	10.2	4.29	1.48	0.14	**5.90**	1.86
1980*	8.3	4.60	1.78	0.22	**6.60**	2.04
1990*	5.7	5.13	2.77	0.40	**8.30**	2.36
2000*	4.3	5.17	3.34	0.65	**9.16**	2.56
2010	2.5	5.68	4.19	0.59	**10.46**	2.82

*Illiteracy information for years 1895, 1907, 1952, 1982, 1992, and 2002

Unfortunately, there is no information to know how inclusive the process of educational expansion was before 1990. However, according to Larrañaga (2010), this process was strongly segregated until the 1950s. The elites went to private primary and secondary schools, the middle classes to public schools, and the working sectors studied only a couple of years in primary public schools. The rate of completion of primary education for the bottom segments of the society was only 30%, while the figure was 80% for the middle and higher segments. The situation for the rural children was even worse (Larrañaga, 2010).

Then during the 1960s, a new urge to expand education came during the presidency of Eduardo Frei. The achievement of full enrolment in primary education and the significant expansion in secondary education were almost entirely absorbed by public schools (Figure 4.11 shows the public/private ratio for primary and secondary education, and technical and university education). Moreover, during this period the public school system made great progress on providing free basic nutrition, arguably one of the biggest barriers to school attendance (Larrañaga, 2010).

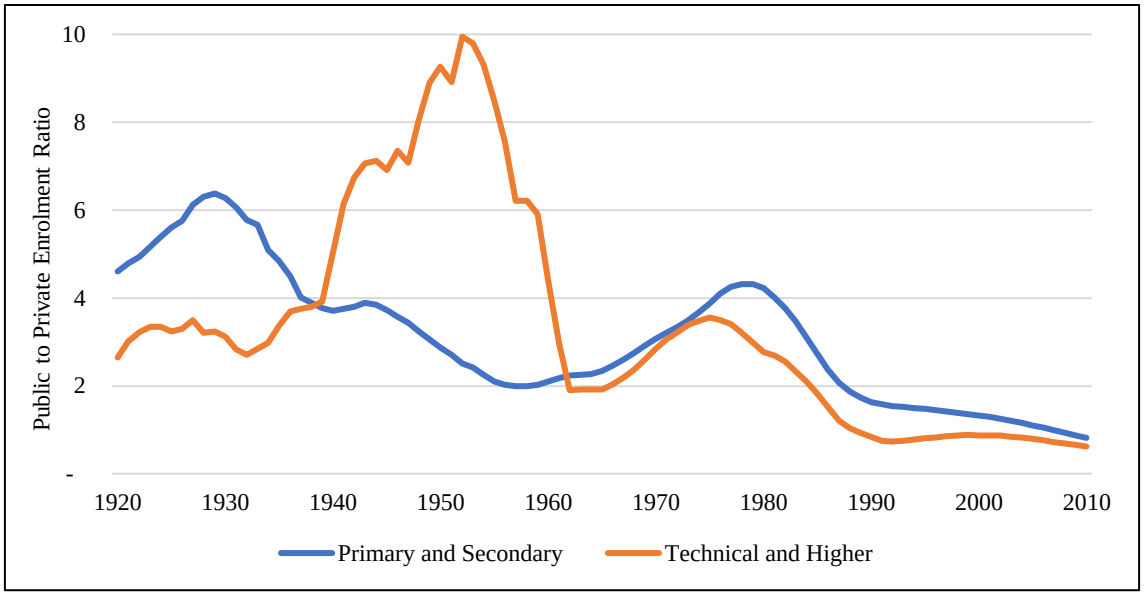

Figure 4.11: Public to Private Enrolment Ratio by Educational Level (5-year moving averages), 1920-2010 (Díaz, Lüders & Wagner, 2010)

More accurate data is available since 1990. Figure 4.12 shows the evolution of net coverage of tertiary education by income quintile between 1990 and 2013. It is evident that the country has experienced a notable increase from less than 15% to over 35%. However, this improvement looks uniformly distributed between income quintiles. Throughout the whole period, lower segments have not closed the gap with higher ones. However, lower segment hardly made any improvement for the first ten years, then since the early 2000s, there is an apparent tendency to close this gap.

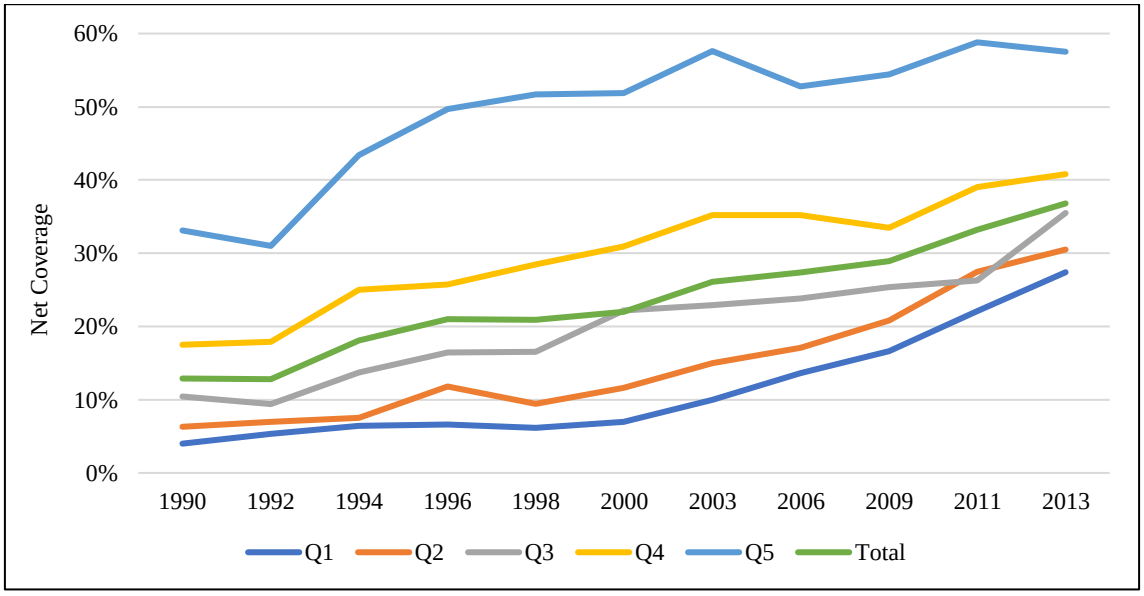

Figure 4.12: Net Coverage of Tertiary Education by Income Quintile, 1990-2013 (Acción Educar, 2016)

Nevertheless, a closer look at the whole educational system shows that this is an important channel for the reproduction of inequalities (PNUD, 2017). People from higher segments have access to better primary and secondary education (private), which grant entrance to the best institutions of higher education, leading to considerably better salaries. In fact, even within those with university studies completed, people from the lower segments receive an income equivalent to around 65% of those belonging to the higher ones. Besides education quality, discrimination in the labor market by the "life trajectory" is also to be accounted for this effect (PNUD, 2017).

Overall, this dimension presents an important improvement from 1900 to 1972. Unemployment was – most of the time – low, inequality decreased, and education expanded. Moreover, the last effort seems to have been fairly egalitarian in spirit.

Then, during the dictatorship inequality and unemployment soared. The only indicator that improved comparatively more than in the past was education, in particular, secondary education, very likely a consequence of the continuing of the policies implemented during the government of Eduardo Frei.

Finally, during the democratic period, there has been an improvement regarding access to credit, the formal labor market, and education, particularity to the tertiary level. However, the systems seem to be formally inclusive and fundamentally exclusive as shown by the evidence on the educational system that, contrary to what would be expected, works as a force of reproduction of inequality and segregation throughout the society (PNUD, 2017).

4.1.4. Autonomy of the State

This dimension is mainly about the ability of the State to isolate from the national elites and play an active role in the economic and social spheres.

As already mentioned, there is a scholarly consensus around the character of the Chilean society of the 19th and early 20th century: Aristocracy dominated every aspect of social life. In this context, the State was conceived as a mere tool to exert its power and secure their privileges.

This situation, however, began to change during the first decades of the 20th century as a result of the social changes generated by the nitrates boom since the 1880s. For instance, the Central Bank of Chile was founded in 1925 with the mission of *stabilizing the currency, regulate interest rates and support the economic development of the Republic* (Ministerio de Hacienda, 1925). Up until that moment, the Chilean State had few real mechanisms to control inflation and provide liquidity. The free-banking system prevailing since 1860 allowed commercial banks to issue paper currency – convertible in metallic (gold or silver) – and provided no means for the State to supervise, control, and regulate the sector (Corbo & Hernández, 2005).

During the last years of the 19th and the beginning of the 20th century, the sustained private and public monetary expansion gave origin to persisting inflation and currency depreciation, which led to the acceptance of the necessity of an institution capable of stabilizing prices and exchange rate: A Central Bank. Nevertheless, once the economy recovered from the Great Depression, the weak institutionality of the Central Bank could not prevent its capture form interest groups, and the organism was unable to exert its central mandate: currency stability (Corbo & Hernández, 2005).

Controlling inflation became a major political issue, and every new administration came with new recipes to achieve that. Invariable, all of them failed, with major crises in the mid-1950s and early 1970s. Meanwhile, the primary function of the Central Bank was in providing credit to public institutions, the decaying nitrates industry and the emerging manufacture industry (Corbo & Hernández, 2005).

Only by late-1970s, it is possible to observe a change in trend. Nevertheless, it was not until the recovery of the democracy that by granting the independence of the central bank – by constitutional law in 1989 – and making "price stability" its main goal, that inflation went consistently to single digits (De Gregorio, 2004). Even so, it took until 1999 for the central bank to start achieving its goal consistently: an annual inflation rate between 2% and 4%.

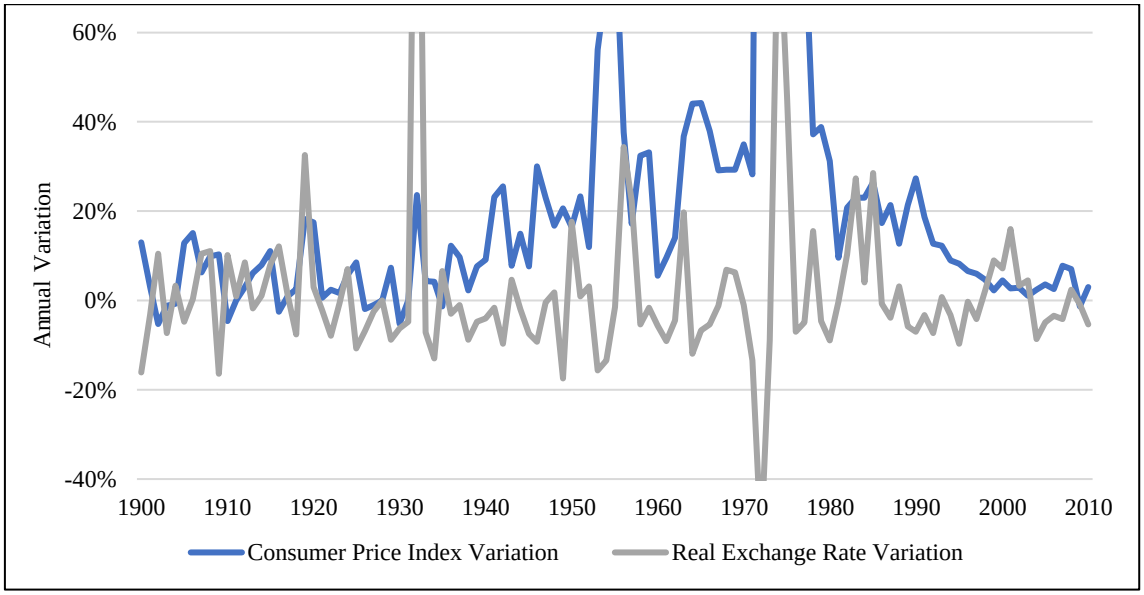

Figure 4.13: Consumer Price Index and Real Exchange Rate Annual Variation, 1900-2010 (Díaz, Lüders & Wagner, 2010)

In terms of taxation revenue, Figure 4.14 presents the ratio between direct and internal indirect taxes, while Figure 4.15 shows the tax revenue composition by source (natural resources, direct, and internal and external (trade) indirect taxes) and Figure 4.16 presents the tax revenue as percentage of GDP and its decomposition by source.

Between 1900 and 1915, almost all tax revenue came from trade taxation, while internal indirect taxes provided the rest – a very small proportion – of the tax revenue.

According to Mamalakis (1987) Chilean citizens always had an aversion to paying taxes, especially direct ones. Moreover, taxpayers, and particularly the wealthy and well-to-do ones, have been willing to provide resources needed for social services for the truly needy, but only to them (Mamalakis, 1987).

Anyhow, most common direct taxes, property and income taxes, were introduced in 1916 and 1925 respectively (Cuevas, n.d.). This first income tax had different levels of taxation according to the source of the rent and already incorporated a progressive character (Larrañaga, 2010). During the next 25 years, direct taxes outweighed internal indirect taxes. At the same time, trade taxes consistently decrease and came to represent only a 20% of the total tax revenue in 1950.

The trend between direct and indirect tax revenue reverses since 1950 as a series of indirect taxes were introduced. The VAT was imposed between 1954 and 1956 with the declared purpose of alleviating the deep fiscal deficit through the taxation of the sectors of easiest control.

This logic appears to have deepened through the decades until direct taxes only represented a 20% of internal indirect taxes by the late 1980s. Since the return to democracy the trend has shifted, and by 2010 this figure was around 60%.

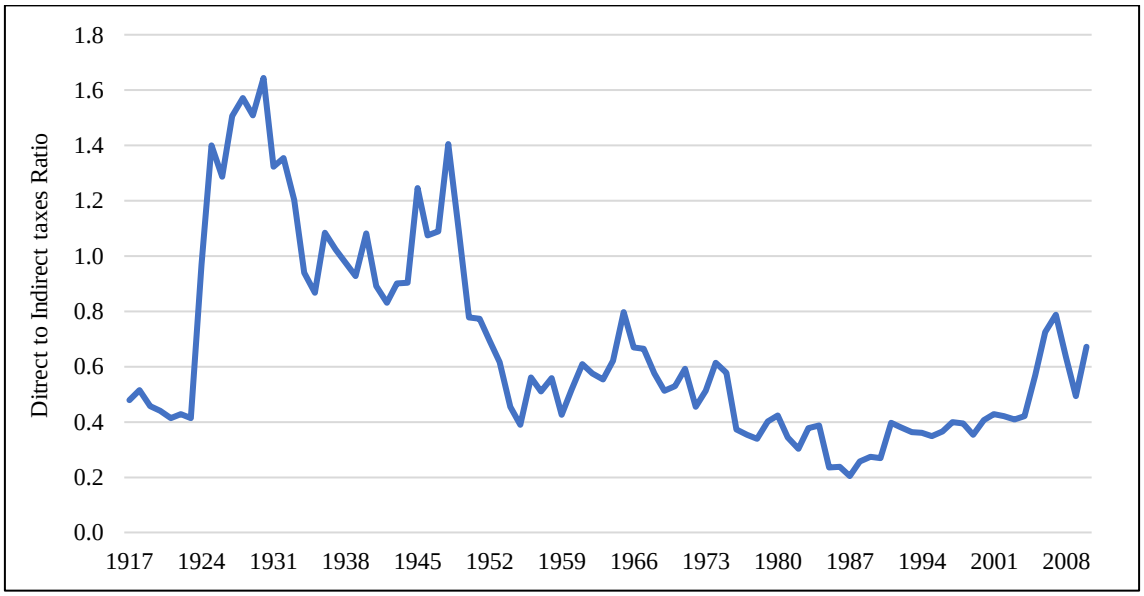

Figure 4.14: Direct to Internal Indirect Taxes Ratio, 1917-2010 (Díaz, Lüders & Wagner, 2010)

From Figures 4.15 and 4.16, it is clear how indirect internal taxes have dominated tax revenue since the 1950s, but also how direct taxes have always been driven by natural resources cycles. In particular the last increase in tax revenue since the mid-2000s was

driven by the copper price boom complemented by the implementation of a specific mining tax in 2005.

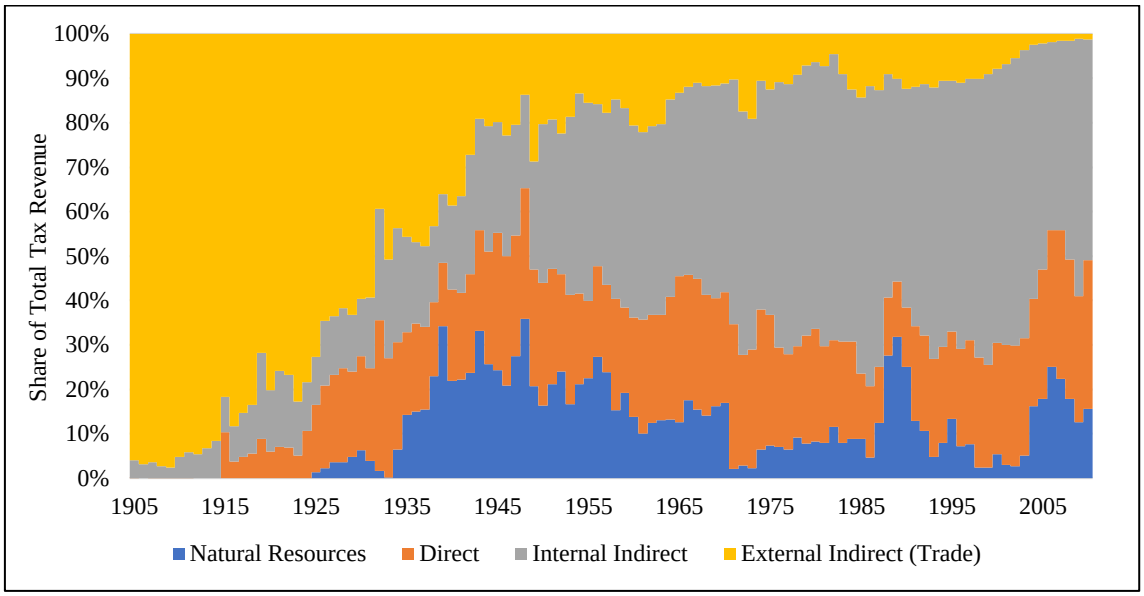

Figure 4.15: Tax Revenue Composition by Source, 1905-2010 (Díaz, Lüders & Wagner, 2010)

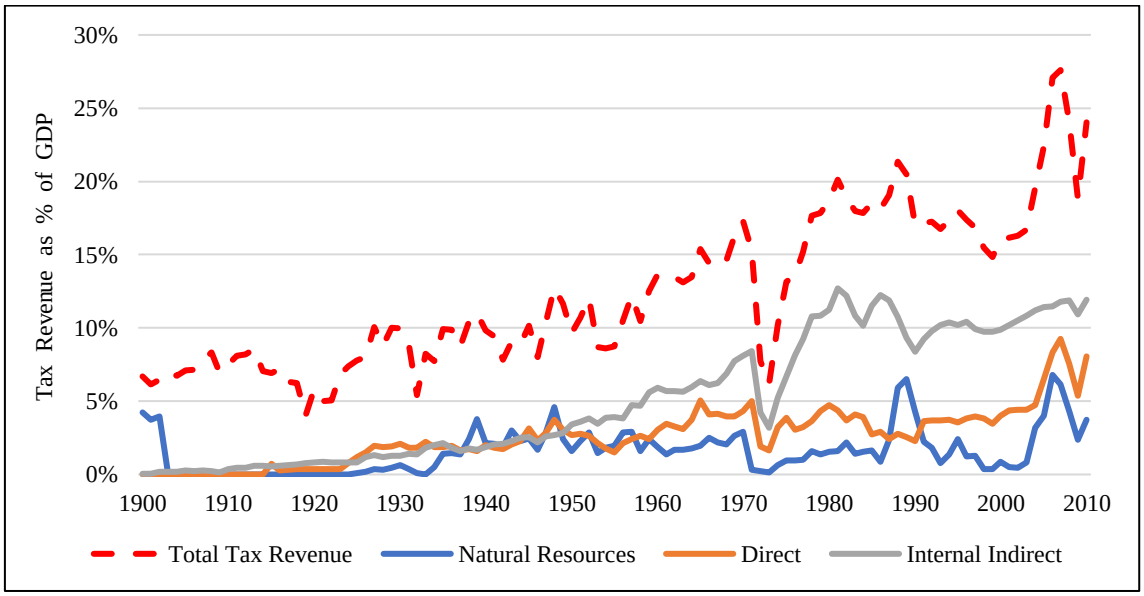

Figure 4.16: Tax Revenue as % of GDP by Source, 1900-2010 (Díaz, Lüders & Wagner, 2010)

However regressive the taxation system has been and still is (López, 2011), Figure 4.17 shows a divergence between the Gini index before and after tax since 2006, implying a greater redistribution capacity of the State. Nonetheless, the last recorded value of 0.476 in 2015 is still relatively high for a country with Chile's income level.

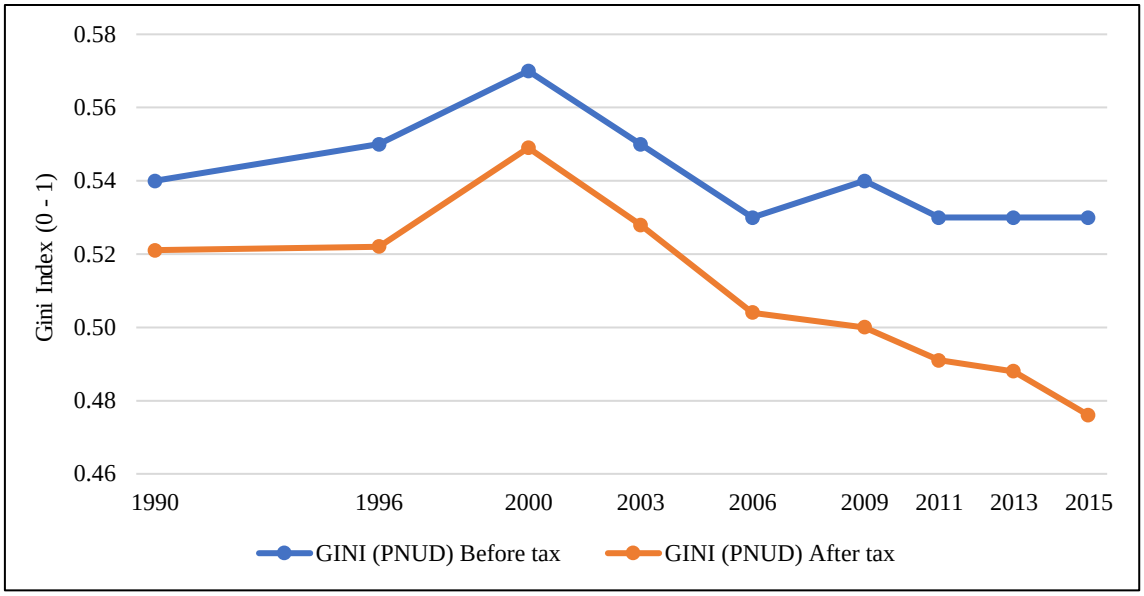

Figure 4.17: Gini Index Before and After Tax, 1990-2015 (PNUD, 2017)

Finally, the top 1% income share (Figure 4.18), after a sharp increase during the first 20 years of the 20th century, presents a downward trend until 1970 (from over 33% to 16%). The return to democracy, according to Friedman and Hofman (2013), appears to have been accompanied with levels under 15% and a downward trend, reaching a low point in 2012 around 11%.

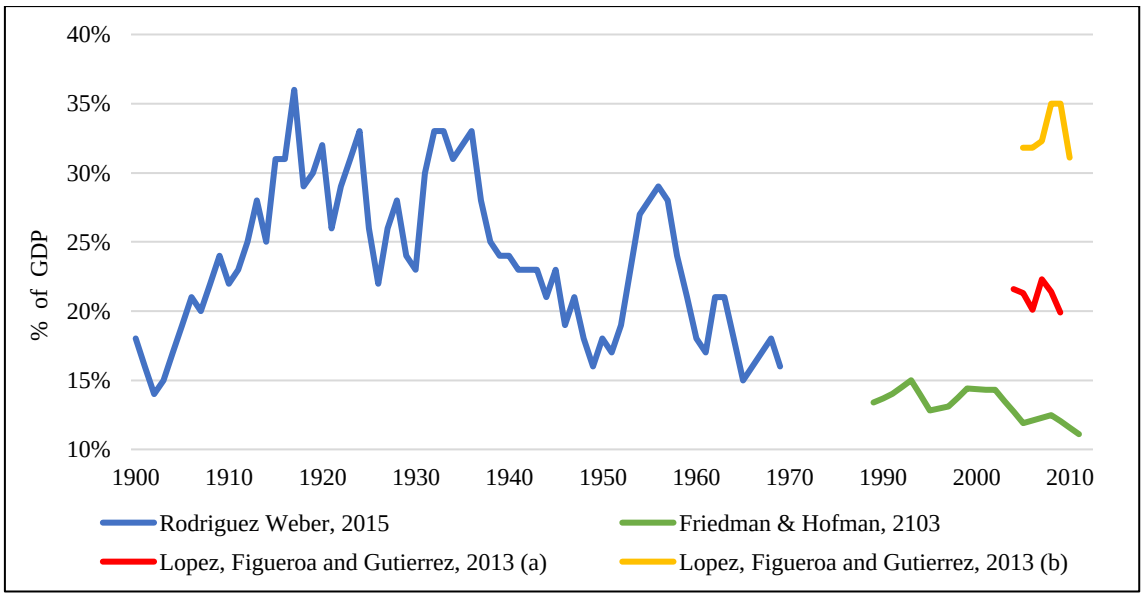

Figure 4.18: Top 1% Income Share, 1900-2012 (Rodriguez Weber, 2015; Friedman & Hofman, 2013; and Lopez, Figueroa & Gutierrez, 2013)

However, Lopez, Figueroa, and Gutierrez (2013) concluded that the average level between 2005 and 2010 considering tax evasion (a) is actually around 21%, or 33%

when including capital gains and retained profits (b). Moreover, the share of the top 0.1% and 0.01% are 18% and 10% respectively. The share of the latter is similar to the share of the 1% in countries like Sweden, Germany, Spain or Japan (López, Figueroa & Gutiérrez, 2013).

In historical perspective, according to Rodriguez Weber (2015) even when during the 20th century the Chilean elite consistently lost power through the shocks of 1914 and 1930, the election of the Popular Front in 1938, the end of the hacienda system and the rise of the middle and working classes during the 1950s and 1960s, at the end of the day the ability of this group "to shape the social and political life remained fundamentally unchanged" (Rodriguez Weber, 2015, pp.26–27).

All in all, the indicators for this dimension show that until 1973 the State had a low but improving autonomy. That it was low is evident from the variability of the tax revenue. Direct taxation gains importance under left-wing governments and loses under conservative ones, while the top 1% share of income soars under the latter and decreases under the former. Nevertheless, it was clearly improving as the fiscal system developed, a central bank appeared, and, perhaps more importantly, during this period Chile followed a development strategy that went against the interests of the land-rooted elites.

During the dictatorship period, if anything, there was a change in the composition of the elite favored by the State. The privatization process created a "new elite" not entirely rooted in the old landed aristocracy, whose "power is nowadays rooted in the high concentration of wealth and the oligopolistic market structure – especially in the export sector and the privatised areas – which gave them great influence over political parties and state agencies" (Rodriguez Weber, 2015, p.27).

The return to democracy presents contradictory signals. On the one hand, the State appears to have recovered some capacity to redistribute, the central bank is an independent entity that has been able to control inflation since the mid-1990s successfully, and the taxation system shows signs of progressiveness. On the other hand, the redistribution capacity is limited, the decrease on the share of indirect internal taxes over total tax revenues is driven by the increase of NR taxes due to the commodities boom, and the share of the top 1%, 0.1%, and 0.01% are extremely high under any standard.

4.1.5. Accountability of the State

This dimension centers on the ability of the State to provide public goods. According to Osvaldo Larrañaga (2010) during the 19th century and the beginning of the 20th century, the State was entirely absent from the social development issues, with the sole exception of education. Early after independence, the government dictated that every town with over 50 inhabitants must have a primary school financed by the town, while

in 1860 the State assumed the function to provide free primary education to all population. However, by 1907 the literacy rate was lower than in Argentina, Uruguay, Colombia or Costa Rica (Larrañaga, 2010). Every other social service were left for charity organizations, even the provision of basic necessary health services (Arellano, 1985).

The nitrates boom and the economic diversification that came with it provoked the rise of the "Social Issue". A label that characterized the expansion of the working classes and their organized claims for better working and living conditions (Larrañaga, 2010).

As a response, the elites gradually abandoned the previous laissez-faire policies and slowly started to implement a welfare state (Larrañaga, 2010). This reached a culmination point with the approval of a series of social laws during the presidency of Alessandri in 1925, covering issues like work contracts, unions, right to strike, arbitration courts, redundancy payment, and compensation for work accidents, among others. Moreover, a series of public entities were created to enforce these regulations and provide assistance to employees and employers. It is worthwhile mentioning that most of this legislation was pioneer in Latin America (Arellano, 1985).

During the next 50 years, the welfare state consolidated and expanded, making meaningful progress in public health between the 1930s and 1950s. Nevertheless, the real breakthrough in this area would have to wait until 1952 with the creation of the National Health Service, which centralized all main health providers existent at the moment and guaranteed urgency health care for all population (Larrañaga, 2010).

Other issues like social housing and the spread of old-age pension would also need to wait until the 1950s or 60s to start developing (Larrañaga, 2010). By 1972, although arguably the welfare system had many shortcomings, its impressive expansion since 1925 put Chile as the Latin American country with greater expenditure on social services as share of GDP a total government expenditure and in the average of OECD countries (Arellano, 1985). Figure 4.19 presents the evolution of the social spending between 1900 and 2013, as percentage of GDP (Arroyo & Lindert, 2017) by function (health, housing, prevision, and education).

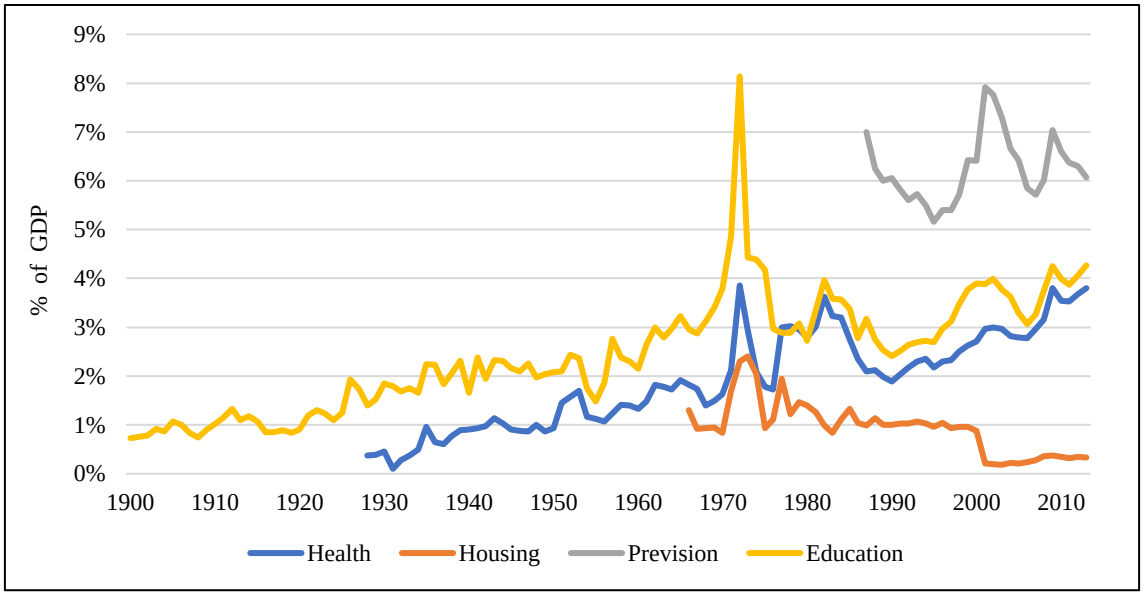

Figure 4.19: Public Expenditure in Social Functions as % of GDP, 1900-2013 (Arroyo & Lindert, 2017)

Perhaps equally important and extensive as the economic reforms implemented by the dictatorship, were the reforms to the social services, mainly on pensions and education, but also health and housing. The main shared feature was focalization on the poorer segments of the population. Resources started being directed only to the less well-off groups of the society through the provision of "minimum services". The State abandoned any redistributive concerns that had been present at least in the previous two governments.

Figures 20 and 21 – extracted from Arroyo and Lindert (2017) – show how regressive the reforms were. Figure 4.20 shows the relative benefits and taxes paid by comparing the middle quintile (Q3) with the top (Q5) and bottom (Q1) between 1965 and 2013. It is evident how taxes relatively decreased for the top quintile, while benefits increased. This is reinforced in Figure 4.21 where it is possible to observe how net benefits (benefits less taxes) rose for the top quintile and decreased for the middle and bottom quintiles.

These regressive tendencies have reversed during the democratic period, especially since the early 2000s as the relative taxes paid by the top quintile have doubled and net benefits passed to the negative side. Nevertheless, the top quintile still receives a disproportioned proportion of the total benefits (almost 30%), particularly through pensions (for more on this see Arroyo and Lindert (2017)).

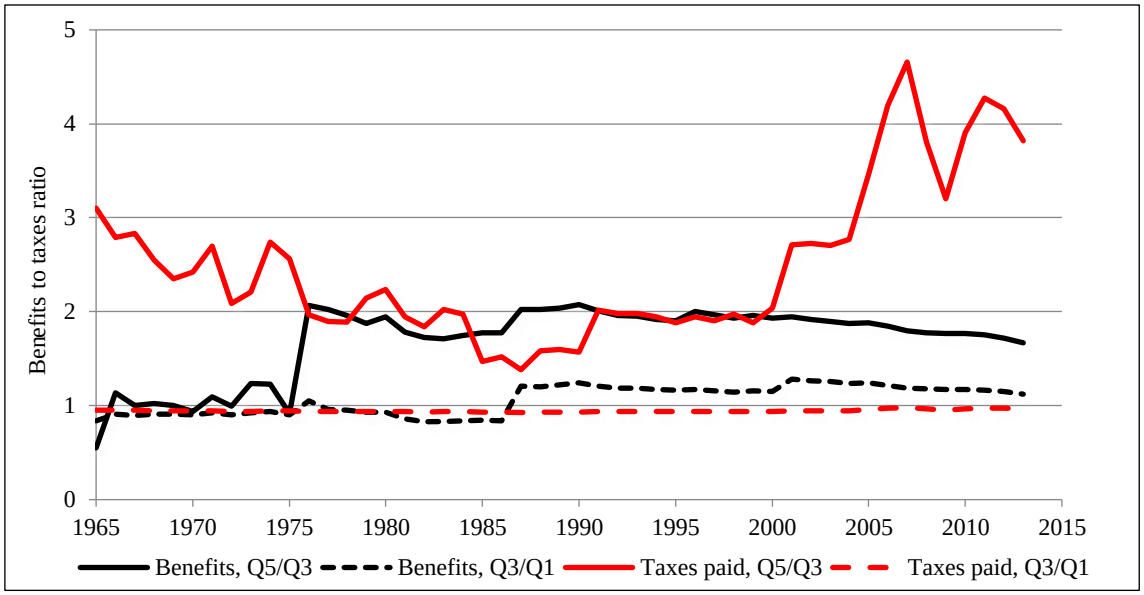

Figure 4.20: Relative Social Benefits and Relative Taxes for Chile's Top, Middle, and Bottom Quintiles, 1965-2013 (Arroyo & Lindert, 2017 - Figure 3)

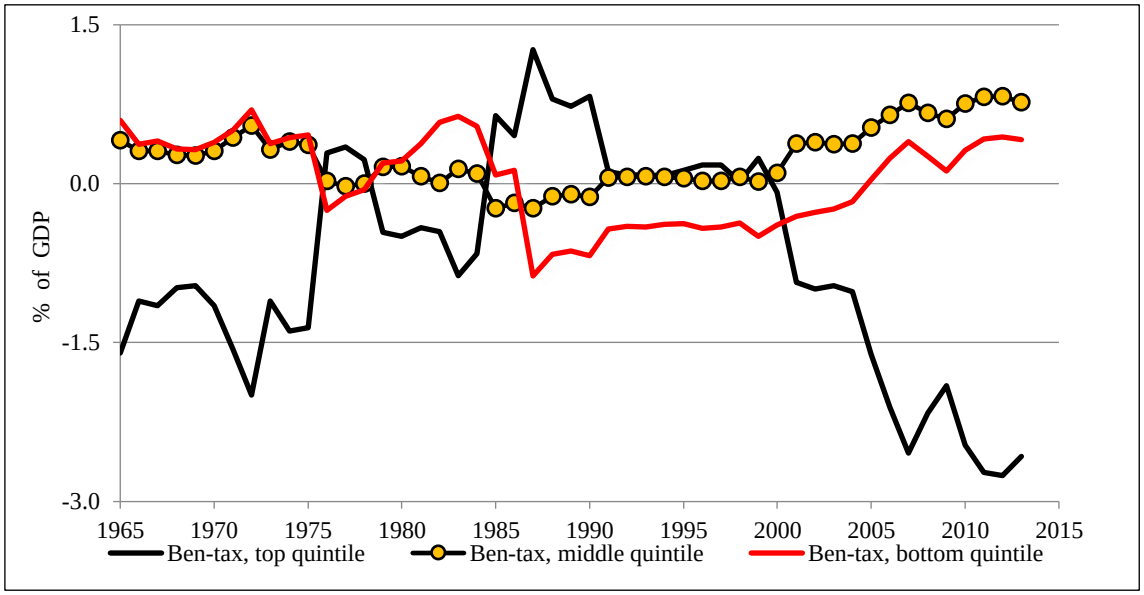

Figure 4.21: Net Social-Expenditure Benefits minus Taxes for Chile's Top, Middle, and Bottom Quintiles as % of GDP, 1965-2013 (Arroyo & Lindert, 2017 – Figure 4)

The center-left coalition that governed from 1990 to 2010 increased public expenditure in every area, but the market logic and the focalized role of the State have seemingly remained untouched. Nevertheless, the social system has, all in all, expanded by including some solidarity aspects in the pensions system, enlarging the covering of public health system and a number of specific social programs (Arellano, 2012; PNUD, 2017).

In turn, political rights expanded importantly during 1924 and 1973. In 1924 only 15% of the population were registered to vote, while by 1973 that figure was 80%. From the

1988 election (the democracy referendum), participation, that started very high, has been steadily declining, leading to a reformation of the voting system, passing from a regime of optional registration and mandatory vote (once registered it was not possible to un-register) to a scheme of automatic registration and optional vote. The last two elections have been held with this system, and voter turnout has not reached 50%.

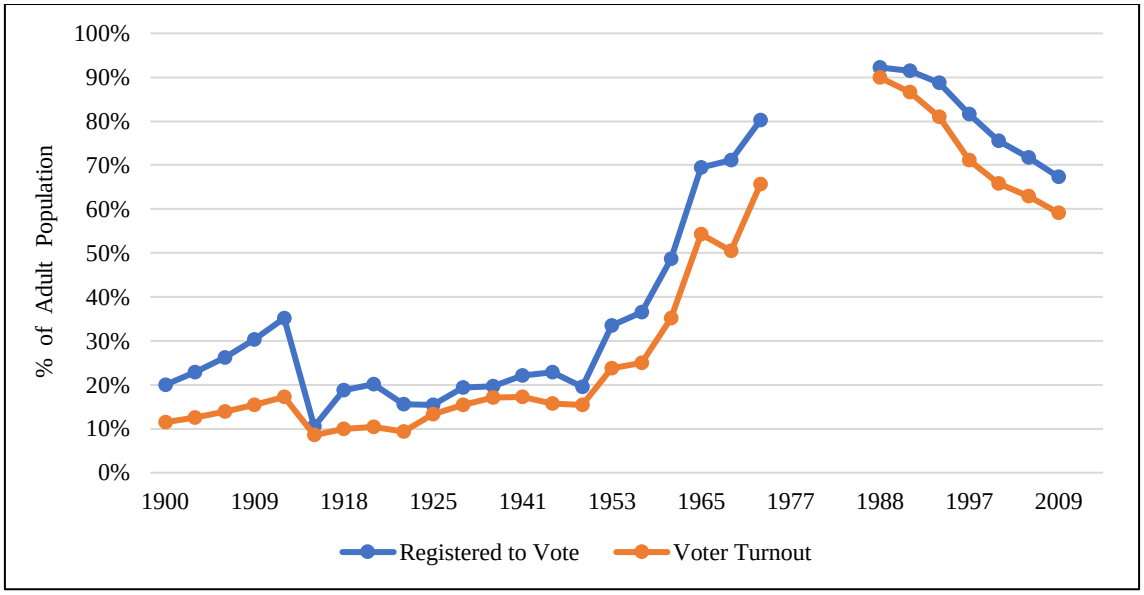

Figure 4.22: Voting Rights and Voter Turnout, 1900-2009 (Díaz, Lüders & Wagner, 2010)

In 1932, less than 5% of the workers were unionized. This slowly increased to around 12% by 1945, and then, in the mid-1960s it started to rapidly expand, reaching a 30% in 1973. This high level remained until 1978, but two years later it was down to around 10%. In the early 1990s coinciding with the returning to democracy, the unionization rate reached 15%, but by the end of the decade, it was back to the 10% level.

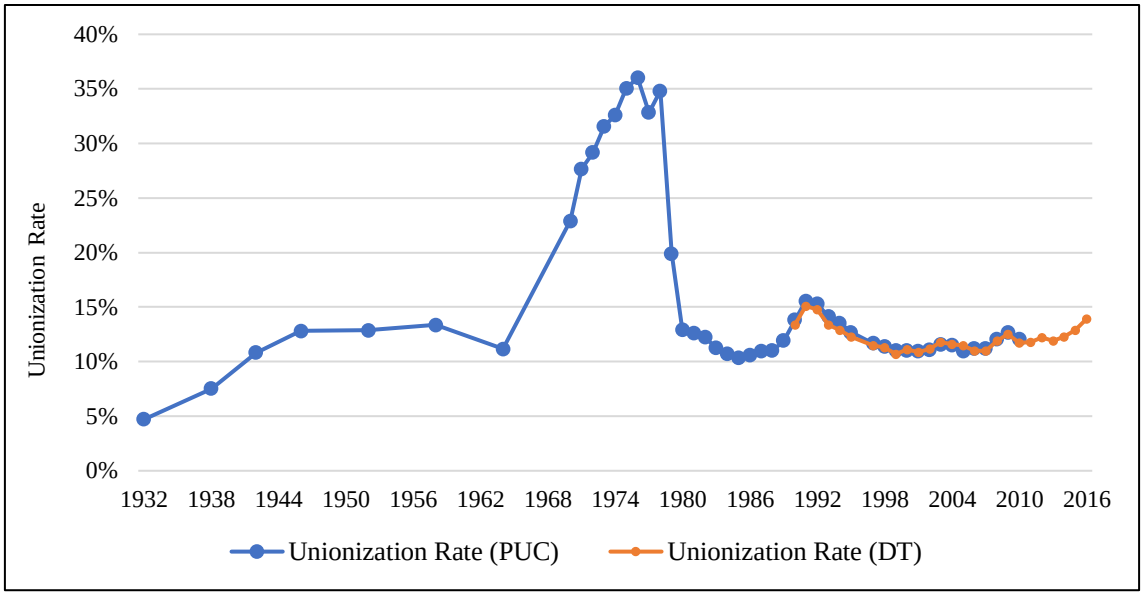

Figure 4.23: Unionization Rate 1932-2016 (Díaz, Lüders & Wagner, 2010 (PUC) and Unidad de Análisis Estadístico Dirección del Trabajo de Chile, 2016 (DT))

In the long-term, there is an improvement between 1900 and 1972 on the capacity of the State to deliver public goods, like education, health, and other social services, as well as expand political rights, like unionization and vote. However, especially in the last part of this period, the vast expansion of the welfare state rested over a weak economic performance and a weaker capacity of the State to collect taxes to finance these programs, leading to persisting macroeconomic imbalances.

According to Arroyo and Lindert (2017), this welfare state was imperfect and incomplete, and mainly benefited the middle and upper classes in detriment of the popular sectors (Arroyo & Lindert, 2017; Mamalakis, 1987). In particular, the pensions system only covered "some privileged occupational groups of the formal sector" (Arroyo & Lindert, 2017, p.392).

With the dictatorship, the State relegated itself to the provision of minimum services to the most deprived groups, while during the democratic period, the primary concern has been over maintaining fiscal discipline and expand social services only as the State secures greater long-term income.

Concerning political rights, Chile inherited from the dictatorship a "low-intensity democracy" (Gills & Rocamora, 1992), where political participation is restricted to the formal act of voting only for a small number of authorities. Moreover, the electoral system and the legislation quorums – both designed by the dictatorship – prevent any substantial change to be passed, despite holding important majorities (Atria, 2013).

4.2. Discussion

There is no doubt that throughout the whole period Chile underwent, not only one but several, meaningful social and economic transformations. The analysis of the four dimensions of social capabilities sheds a different light on the fundamental causes of the overall process than the usual explanations which attribute a great deal to the mining industry, the excessive intervention of the State during the IS phase, and to the neo-liberal reforms during the dictatorship.

The analysis shows how the country made important – and in some respects impressive – gains in social capabilities between 1920 and early 1970s. During the early years until the great depression, the economy was dominated by the nitrates industry, which reported unprecedented income to the State, and allowed for incipient investment in other economic sectors, thus diversifying the economy. Agriculture, on its part, was highly unproductive and the only output increases were due to frontier expansion. The society as a whole was highly unequal, and the living standards were very low for the vast majority of the population. The State had an overall low capacity to intervene and shape the socio-economic life, although the high revenue from the nitrates exports provided, for the first time, a level of income sufficient to offer social services beyond primary education. This, in turn, as a response to the "social issue" generated by the demands of organized workers of the nitrates industry.

During the mesocratic republic (Rodriguez Weber, 2015), from 1930 to 1972, the collapse of the nitrates industry led to the adoption of an ISI strategy, with multiple consequences. First, the economic structure diversified and gained in complexity, as the manufacturing share of GDP doubled in 30 years from 1940. Second, in time, this process deteriorated the power of the landed elites leading to important land reforms in the late 1960s. Third, a new middle class emerged linked to the manufacturing industry and the expansion of the State, while income inequality reduced importantly (Gini declined from 0.6 in 1934 to 0.49 in 1972). Fourth, the state gained in autonomy, as a fiscal system appeared and consolidated, the country followed a development strategy against the interests of the elites, and by the end, an important process of land tenure reform took place. Finally, a welfare state emerged to provide broader social services, and political rights expanded.

However, during this period the economic performance, in terms of GDP per capita, was weak. The structural transformation did not imply a labor-force transfer to the emerging manufacturing industry; instead, people migrated from agriculture to the service sector. The agriculture sector remained as unproductive as before, and by the end, the ISI strategy had failed to meet its goals. The State and its new independent institutions (the Central Bank and the production corporation) ended up captured by the new urban elites, the fiscal system evolved more regressive, and despite the emergence

of the middle class, the working classes remained highly relegated and uncovered by the welfare system.

The dictatorships, in turn, was a period of weak economic performance and a reversal to export-oriented strategies centered on NR. The economic complexity of the economy decreased as the country appeared to have gone through a process of "premature de-industrialization" (Rodrik, 2016), while an impressive agricultural transformation began to unravel in the mid-1970s. Poverty and inequality rocketed, and the State relegated itself to covering the minimum needs of the poorest segments of society. Nevertheless, from 1986, the economy began to take off, and for the next 12 years, Chile grew at an unprecedented average rate of 6% in per capita terms.

The democratic period since 1990 continued the good economic performance until de Asian crisis. Since then, the growth trajectory slowed down, but it has still been good enough to achieve high-income status and continue the catch up with the developed world. The economic structure has followed the same path inherited by the dictatorship, with declining manufacture and late stagnation of the agricultural gap. Moreover, the economic complexity, after an initial period of increase, has been falling for the last 13 years to a current historic low point.

Inclusion has undoubtedly improved, and the more evident sign is the sharp decrease in poverty from over 68% in 1987 to under 12% in 2015, measured under national poverty lines (PNUD, 2017). Here agriculture has played a significant role, and most of this effect is channeled through the labor market (Anríquez & López, 2007). Inequality has also decreased, although market inequality has remained high even for Latin America standards. However, a closer look at the income distribution reveals that the transfer of income has been from the highest to the lowest segments indicating, although limitedly, a pro-poor growth process.

Arguably, one of the dimensions where the country has made the biggest improvement is in the accountability of the State, as it has been able to increasingly provide social services, improve the progressiveness of its actions, and enact essential measures in times of crises. As an example, during the great financial crises of 2008, the State highly augmented public spending, thanks to the important reserves held in a national sovereign fund that by 2016 reached the US$ 25 billion in 2017.

This could be read as proof of a high degree of autonomy of the State, and indeed, for a country like Chile, it is. However, the State maintains an endemic incapacity to collect sufficient taxes to properly invest in the future development of Chile (López, 2011; Sanchez-Ancochea, 2017).

Ramón López (2011) refers to the Chilean tax system as insufficient, inefficient and inequitable:

> *"Insufficient because it does not yield enough revenues for the state to promote human capital development and to face poverty in a more comprehensive way;*

> *inefficient because it is highly unbalanced causing most of the tax burden to be concentrated in very few taxes while neglecting the use of the least distortion-prone tax mechanisms available; inequitable because it forces the middle and low-income groups to shoulder most of the tax burden while allowing the super-rich to get away paying one of the lowest tax rates among middle income and advanced countries".* (López, 2011, p.3)

Moreover, by 2006 Chile had a tax to GDP ratio of 20%, which situated the country well below the OECD average of 36% and as one of the lowest among all middle and high-income countries. The taxation burden inherited by the dictatorship was insufficient to finance necessary social programs; thus, some reforms were introduced during the first years of democracy. Nevertheless, the Chilean efforts were much weaker than in the rest of the Latin American countries as the tax burden only grew 19% between 1990 and 2005, compared to a 47% of the whole region (López, 2011).

This low taxation level deprives the State of the possibility to invest in education, and the formation of skilled technical workers, as well as the provision decent health care, and social security. This, in turn, "has become a binding constraint to the expansion of skilled-intensive activities other than the traditional resource-extractive ones" (López, 2011, p.4).

Moreover, the Chilean taxation system seems designed to favour physical capital accumulation and natural resource extractive industries in detriment to knowledge-based or knowledge-generating sectors, and to favour the big economic interests "through a myriad of tax deductions for investments, and other generous tax breaks for corporations, […] and the so-called tax expenditures (legal tax loopholes)" (López, 2011, p.4). The lack of real royalties to the extraction of natural resources and environmental taxes confers these extractive industries a critical advantage.

In the end, it seems fair to say that the greater obstacle regarding social capabilities has been the persisting low level of State autonomy. The lack of an independent State deprived the country of the opportunity to take advantage of the nitrates boom and invest in the copper industry that ended up in foreign hands. Moreover, as many have pointed out (Meller, 1996; Rodrik, 1999), the ISI strategy is not inherently wrong and inefficient; instead, it was the capture of the State by this new interest groups which prevented it from achieving its goals and provide, at least some, national prosperity.

Then, a plausible conclusion would be that Chile achieved high rates of economic growth since the mid-1980s relying on the capabilities stock accumulated during the period 1920-1972. Here, the economic reforms of the dictatorship, after a period of high instability and social decay, appear to have combined virtuously with this capabilities base to produce economic growth and diversifying, however limitedly, the economic structure. An important role, often overlooked, was played by the changes induced by the land reforms before the dictatorship (Andersson, 2009).

Finally, the country has been experiencing productivity stagnation for almost 15 years (Magendzo & Villena, 2012) and it seems that again, the tremendous economic and political power of the elites and the lack of incentives of these groups to invest in national development, are the fundamental factors dragging the country on its effort towards development (Sanchez-Ancochea, 2017).

One of the most important lessons to be learned from the experience of Australia and Norway is about the importance of knowledge, in particular, the relation between the NRBIs and the knowledge-generating organizations. The "trick" is about a virtuous relationship between these two sectors (Ville & Wicken, 2012, 2015), much more than about what is often singled out: education and formal human capital formation.

In fact, education in Chile has kept expanding, during the last period in particular at the tertiary level, but this has had little effect over productivity (Beyer & Vergara, 2002; Tokman, 2004). The efforts now should be put in developing innovative capabilities, through expansion of investment in R&D and reorienting education to innovation through long-term policies that consider the cumulative character of this process (Álvarez & Labra, 2015). This could be focalized in the NR industries, in which the high and sustained demand of the last decades had, arguably, opened an opportunity window to move to industries key for the next technological revolution, "such as biotechnology, nanotechnology, bioelectronics, and new materials" (Marin, Navas-Alemán & Perez, 2015).

However, the role of the State in these activities has proved to be crucial. The State is the only actor capable to assume alleviate the coordination failures (Lin, 2016; Quibria, 2002; Rodrik, 1994) and provide the conditions and right incentives for the different sectors to work together and furthermore play an active role promoting specific sectors and particular businesses (Rodrik, 1994; Wade, 2005; Weiss, 2005).

It is arguably a big leap signaling one of the dimensions for the part of the development that Chile has not been able to achieve. After all, the lack of economic complexity is evident, and the inequality level makes it hard look any other way. Moreover, the relation between different measures of inclusion, like inequality (Birdsall, Ross & Sabot, 1995; Cingano, 2014) and distribution of education (López, Thomas & Wang, 1998), and long-term economic growth are well documented. Conversely, structural transformation and economic complexity have been signaled as strongly linked to the possibility of development (McMillan, Rodrik & Verduzco-Gallo, 2014).

However, it is argued here that, the persistently low level of State autonomy – and the influence of the elites – is the main reason for the lack of sustained economic growth throughout the last century in Chile. This is in accordance with previous findings on the connection between a meritocratic State and growth (Evans & Rauch, 1999), or the relevance of State independence in the East Asian miracle (Polidano, 2001; Rodrik, 1994). Even more, the limited progress on the other three dimensions would also be related to the same deficiency. The nature of the taxation system described by López

(2011) is a good indication of how the State provides economic incentives tending to concentration and benefiting the great economic powers. While the pattern of income inequality, capital share on GDP (Figure 4.8), and top 1% income share (Figure 4.18) are good indications of how non-market mechanisms shape the distribution of the economic output. In Chile, the structures and institutions to enter and participate in the formal economy are present and functioning in a "proper way". The fundamental problem lies in the incentives once there that, disproportionally favor capital over labor and the very rich over the rest (López, 2011; PNUD, 2017; Sanchez-Ancochea, 2017).

The lack of State autonomy has been of utmost relevance on the absence of a national strategy around mining and particularly copper (Mamalakis, 1967). Only for a brief period during the late 1960s and early 1970s, this was attempted, but it was rapidly dismantled by the dictatorship despite the fact that the National Copper Corporation (CODELCO) was maintained in the hands of the State. During the last decades this has occupied the efforts of many authorities and scholars (Meller & Gana, 2015; Parodi & Meller, 2017), but nothing significant seemed to have been achieved, only a couple of non-binding initiatives to develop suppliers and a specific mining tax implemented (small and not based on extraction but results). Chile seems poised to lose another opportunity to invest in its future development just like what happened with the nitrates industry.

All in all, the lesson to be extracted from the Chilean experience for NR rich countries seems to be that efforts should be put into generating State autonomy, and in particular in creating an institutional structure able to isolate its NR from both the central State and the elites. This is, of course, easier said than done since the very nature of these industries makes it much more difficult since NRBI usually require significant investments, thus present a tendency towards concentration and tend to lack broad popular recognition due to the low labor force they occupy. But what the Chilean experience also shows is that improvements in purely economic terms (growth and complexity), in welfare, or inequality will be limited if the central issue of State autonomy is not embraced.

Chile has not only not done this or developed a national strategy around copper but the unfair treatment to CODELCO – vis-a-vis the private copper companies – through the State appropriation via special taxes of a large proportion of its profits, eroded the capacity of this company to invest in its future which is currently uncertain. Moreover, the interest groups have kept the multinational copper companies from paying their fair share of taxes and blocked every attempt of the State to implement any kind of national strategy around copper (Sturla et al., 2016).

Nevertheless, in general terms, some improvement has been made regarding State autonomy. Tax reform was passed in 2014 to finance universal free education and electoral reform that grants representation for smaller parties and coalitions was inaugurated in the last election (2017). Although these are good and promising signs, the capacity of the Chilean State to make significant changes in the economy have not

improved (Sanchez-Ancochea, 2017) and the institutional arrangement seems unfit to face the challenges of the future, and for example, develop a national strategy around new strategic resources like lithium.

5. Conclusions

The list of potential causes of economic development is endless and will most likely not shrink anytime soon. However, there is often forgotten that economic performance is just one more social dimension and as such it must be determined by social features. The process is bidirectional, multidimensional and non-linear (Adelman, 2000; Andersson & Palacio, 2017; Pritchett, Woolcock & Andrews, 2010).

This research concentrated on the social determinants of economic development under convergence theory by adopting a social capabilities approach. This was applied to the case of Chile in the long run to shed new light on its economic performance during the last century and in particular the "economic miracle" since the mid-1980s, and furthermore extract possible lessons for NR rich developing countries. This thesis took advantage of the excellent information sources available for Chile put together by different scholars, which in turn benefited from a long-dated Chilean tradition of documentation.

The theoretical approach adopted is a novel framework developed by Andersson and Palacio (2017) in which they identify four interrelated dimensions of social capabilities specifically in the context of convergence theory and to account for the potential of a country to achieve and sustain high growth rates leading to catch up. These four dimensions are transformation, inclusion, autonomy, and accountability. In their words:

> *"self-sustained growth is a function of the ability to adapt the structure of the economy to continuous technological change, to include people in through a social contract that shares the surplus in the economy and eases the greater exposure to the risks of the international economy, without eroding the modernization and nation-building properties of the State"* (Andersson & Palacio, 2017, p.15)

At the beginning of the 20th century, Chile was in the middle of the nitrates boom, which had already brought great prosperity for some small segments of the society. Moreover, this activity was attracting other investments to the country (towards the copper mining industry) and thanks to the trade taxes on this activity the Chilean State was rapidly growing.

However, the Chilean society was still mainly agrarian, and the aristocratic elites dominated almost every aspect of social life. The living conditions for the vast majority were of extreme poverty and social services were relegated to charity institutions.

During the first 70 years of the 20th century, Chile made significant social and economic improvement. The economic structure diversified as manufacture more than doubled its share in GDP, poverty and inequality declined, education spread and the state emerged

as a relevant actor with the capacity – for the better, or the worse – to shape the economy and provide public goods. Nevertheless, economic growth was scant; agriculture remained highly unproductive, although good signs began to emerge as a consequence of the land reforms made during the late 1960s. The state never really detached from elites and to an important degree remained a tool to exert its power (the elites) over the society.

The military dictatorship since 1973 quickly implemented a thorough set of "pro-market" economic reforms that in the short run led to instability, unemployment and the explosion of poverty and inequality. However, since 1985, Chile grew for 12 years at high rates, and after a "short recession" as a product of the Asian crisis, the country has remained growing, although at lower rates for the last 20 years. This run has led to the international recognition and achieving high-income status in 2012.

In terms of capabilities, the dictatorship saw the beginning of a great agricultural transformation, but lowering overall economic complexity, and as said, increase poverty, unemployment, and inequality. During the first years of the democracy period, the agricultural transformation continued, and the economy appeared to diversify again. Poverty receded importantly, as well as unemployment, price stability was achieved for the first time in decades, and although inequality kept increasing, at least the State improved the provision of assistance.

It is argued here that in terms of social capabilities, there is a common denominator throughout the Chilean history, and this is the persisting lack of State autonomy. This dimension would account for the lack of economic growth during the first part of the 20th century and the recent productivity stagnation. In turn, the good economic performance of the late dictatorship and early democracy period could be accounted on the capabilities stock built before the early 1970s, combined with the neo-liberal economic reforms.

The dictatorship "replaced" of one elite for another, the new one being considerably more entrepreneurial than the older one (Montero, 1990). Thus, although, the State kept attached to particular economic interests, this change meant increasing dynamism, at least for a while. In time, the strong links between this new elite and the State have led to oligopolistic market structures and a small and endogamic economic elite (PNUD, 2017) with great influence over the whole society and in particular over the actions of the State (PNUD, 2017; Rodriguez Weber, 2015; Rodríguez Weber, 2017). This is again signaled here as "responsible" for the later stagnation of the Chilean economy.

Regarding for NR rich countries, the case of Chile puts forward that, perhaps more than inequality or structural heterogeneity, the central issue is the autonomy of the State and the economic influence of the elites. In particular, NR rich countries should create structures and institutions around their NRBIs isolated from the elites and the central State.

Further research is needed to test the preliminary results of this research. A first strand could explore whether this lack of State autonomy, as the central social dimension hindering national development, is a phenomenon particular of Chile or a shared feature of the majority of NR rich developing countries. This, in turn, could be done analyzing the whole Latin American continent – or a selection of countries – over the same period and/or a cross-section developing NR rich countries over a shorter and more recent term. Availability of good data will be a major challenge. Very few developing countries have both the amount and quality of data that Chile has, but this should not discourage the quest for understanding the nature of modern development.

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