Wars, education and regional disparities in Chile, 1850s-1910s

1. Introduction

The canonical works of state-building literature focused on Latin America have tended to conclude that Charles Tilly's famous paradigm connecting war and state capacity development[1] is inapplicable to the region.[2] By contrast, recent research identifies the key role that civil and foreign wars played in many instances of state development in different Latin American countries.[3] The relevance of this link is particularly noticeable in the Chilean case. Moreover, recent research on this case-study has raised the relevance of heterogenous effects at the regional level.[4] The goal of this paper is to expand this analysis by looking at the relationship between wars, education provision and regional disparities in Chile from the mid-nineteenth century to the 1910s.

The study of regional uneven development is one of the most promising avenues of research in state capacity in developing countries.[5] In this article, we follow Schenoni's proposal that suggests that victory in foreign wars allows central elites to subordinate regional elites and impose a state building process.[6] Following Véjares,[7] we consider that this realignment of forces between central and regional elites can also be the result of civil wars.

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[1] Charles Tilly, *Coercion, Capital and European States* (Cambridge, MA: Basil Blackwell, 1990)

[2] Miguel Ángel Centeno, 'Blood and Debt: War and Taxation in Nineteenth-Century Latin America', *American Journal of Sociology,* Vol. 102, No. 6 (1997), pp. 1565-1605. See also Miguel Ángel Centeno, 'El Estado en América Latina', *Revista CIDOB d'Afers Internacionals,* núm 85-86 (2009), p. 11-31. An alternative theory on state-building in the region is offered in Fernando López-Alves, *State Formation and Democracy in Latin America, 1810-1900* (Durham, NC: Duke University Press, 2000).

[3] Luis Schenoni, 'Bringing War Back in: Victory and State Formation in Latin America', *American Journal of Political Science,* 65(2) (2021), pp. 405-421; Didac Queralt, *Pawned States: State Building in the Era of International Finance* (Princeton University Press, 2022). For an analysis on the effects of civil war see Douglas M. Gibler and Steven V. Miller, 'External territorial threat, state capacity, and civil war', *Journal of Peace Research,* Vol. 51 (2014), No. 5, pp. 634-646.

[4] Maximiliano Véjares, 'Varieties of State-Building: Ecology, Clientism, and Bureaucratic Rule in Chile', *Perspectives on Politics,* 23(2) (2024), pp. 627-648; Oriol Sabaté and José Alejandro Peres-Cajías, 'The War of the Pacific and Chilean public revenues: Reallocation of the tax burden and institutional change', *Economic History Review* (2025), pp. 1-25; David Altman and Juan Pablo Luna, 'Introducción: El Estado Latinoamericano en su laberinto', Revista de Ciencia Política, Vol. 32, No. 3 (2012). The authors comment on how recent events in Chile hint at historical *"fragility... at the sub-national level"* p. 522.

[5] Daron Acemoglu, Camilo García-Jimeno and James A. Robinson, 'State Capacity and Economic Development: A Network Approach', *American Economic Review*, Vol. 105, No. 8 (2015), pp. 2364-2409; Juan Pablo Luna and Hillel David Soifer, 'Capturing Sub-National Variation in State Capacity: A Survey-Based Approach', *American Behavioral Scientist*, Vol. 61, Issue 8 (2017), pp. 887-907; Raúl Aldaz Peña and Daniel Baquero-Mendez, 'The Original Sin of Latin American States: Formation, Building, and Capacity', *Journal of Historical Political Economy*, Vol. 4: No. 5 (2025), pp. 557-581.

[6] Luis Schenoni, *Bringing War Back In: Victory, Defeat, and the State in Nineteenth-Century Chilean Education* (Cambridge: Cambridge University Press, 2024)

[7] Véjares, 'Varieties of State-Building', p. 634

The focus on this relationship between central and regional elites before and after of both external and civil wars allows us to trace how within-country variation in state building evolved across time.

The use of public education provision as a tool to understand the interplay between central and local rulers is justified from different perspectives. To begin with, primary public education is a key tool for state building,[8] and represents an important element of the state's *productive* and *informational* capacity.[9] Likewise, Paglayan's research suggests that public education expansion was used as an indoctrination tool associated with national consolidation throughout the nineteenth century.[10] Additionally, as education is seen as fundamental to economic development,[11] the uneven distribution of human capital investment can help to understand economic regional inequality in the long-run.

Previous research studied the relationship between war and education provision in Chile. Indeed, the available evidence shows an increase in education services that scholars have linked to political economy changes derived from both the 1859 civil war and of the War of the Pacific (1879-1883).[12] Our contribution goes beyond these aggregate figures and looks at government investment in *primary* education at both *provincial* and *departmental* levels. We show that during the 1860s and 1870, noticeable increases in expenditures per school-age child took place in both Santiago and Valparaíso (both associated to Chilean central elites) and the North and South of the country. After the War of the Pacific, increases remained relevant in Santiago and Valparaiso, the North and the new North -the territories annexed after the war.

Spatial variation of primary education investment was determined by changes in the strategic importance that regions had for central elites in the state building projects that emerged after war conflicts. The maintenance of high levels of investment in some regions, as

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[8] Alberto Alesina and Bryony Reich, 'Nation Building', *Working Paper, Department of Economics, Harvard University*, (2015)

[9] Hillel David Soifer, 'The Source of Infrastructural Power: Evidence from Nineteenth-Century Chilean Education', *Latin American Research Review*, Vol 44, No. 2 (2009), pp. 158-180; Johannes Lindvall and Jan Teorell, 'State Capacity as Power: A Conceptual Framework". *STANCE Working Paper Series*, No. 1 (2016).

[10] Agustina Paglayan, 'The Non-Democratic Roots of Mass Education: Evidence from 200 Years.', *American Political Science Review*, 115(1) (2021), pp. 179-198.

[11] Nicola Gennaioli, Rafael La Porta, Florencio Lopez-de-Silanes and Andrei Shleifer, 'Human Capital and Regional Development', *NBER Working Paper Series,* 17158 (2011).

[12] In the evolution of public expenditure in the second half of the nineteenth-century, see John R. Bowman and Michael Wallerstein, 'The Fall of Balmaceda and Public Finance in Chile: New Data for an Old Debate', *Journal of Interamerican Studies and World Affairs*, Vol. 24 No. 4 (1982), pp. 421-460. For education expenditure in the context of the War of the Pacific, see Soifer, 'The Source of Infrastructural Power: Evidence from Nineteenth-Century Chilean Education'. For a discussion on the relevance of the 1859 civil war, see Agustina Paglayan, 'Education or Indoctrination? The Violent Origins of Public School Systems in an Era of State-Building', *American Political Science Review*, 116(4) (2022), pp. 1242-1257.

well as clear reversals in others, was also determined by differences in the demand for education. In fact, by looking at both local taxation and expenditure, we stress that local commitment to state building varied greatly. Thus, whereas top-down policies are crucial to understand state building in Chile during the nineteenth century,[13] the cooperative or confrontational attitude of local elites is also critical.[14]

Finally, we show that literacy rates were also highly heterogenous across the Chilean territory. Regions such as Santiago, Valparaíso and the Atacama, consolidated their positions as leaders in educational attainment. By contrast, the Southern regions saw their literacy levels somewhat stagnate. Another relevant difference relates to the high literacy levels found in the territories annexed after the War of the Pacific and the lowest levels noted in the Araucanía region. These trends echo those previously identified for investment levels. Despite this correlation, further research is necessary to determine how differences in public support to education help to understand long-term regional differences in human capital formation.

After this introduction, the rest of the article is organised as follows. Section 2 discusses the theoretical framework that guides our analysis. Section 3 gives a summary of the historical events that should be considered to understand the expansion of education services in Chile. Section 4 presents our results on education investment at the regional level. Section 5 incorporates the role of local taxation in the analysis and explains the main reasons behind regional differences in public education expansion. Section 6 looks at regional differences in literacy levels and in Section 7 we offer some concluding remarks.

2. Theoretical framework

The role of external wars in state formation and state building processes is in constant dialogue.[15] While previous examinations tended to concentrate on Europe or developed economies, the last decade has seen an incredible effort to systematically introduce the rest of the world into the debate.[16] This paper seeks to contribute to this discussion by incorporating

[13] Paglayan, 'Education or Indoctrination?'
[14] Véjares, 'Varieties of State-Building'
[15] Lars-Erik Cederman, Paola Galano Toro, Luc Girardin and Guy Schvitz, 'War Did Make States: Revisiting the Bellicist Paradigm in Early Modern Europe', *International Organization*, 77 no. 2 (2023), pp. 324-62
[16] Lisa Blaydes and Anna Grzymala-Busse, 'Hisotical State Formation within and beyond Europe', *World Politics*, Vol. 77 (2025), pp. 205-222.

into the analysis the effects of both external and civil wars on Chilean state from the mid-nineteenth century to the 1910s.

Whereas foreign and civil wars are different in nature, we argue that in a context of early state formation and building, when borders and the idea of a nation are not yet consolidated, the opportunities and threats that both types of events generate can be integrated into a single analysis. Indeed, the canonical work on the relationship between war and state building in Latin America operated this way.[17] Thus, following Schenoni,[18] we seek to understand how war outputs generate a realignment in the relationship between central and regional elites. This realignment is analysed through the study of taxation and education policies, two key tools of state building. However, taking into account both historical research on Chile[19] and theoretical discussions on civil war,[20] our analysis considers the wide heterogeneity of local orders that could exist before, during and after wars. Therefore, rather than looking at national aggregates, we propose to study the effects of war at the regional level.

Similarly, previous research on both taxation and education policies suggests that victory in war does not automatically improve the ability of central elites vis-a-vis regional elites to impose a wider state building project. On the one hand, there is a widespread literature that proposes that the consolidation of modern taxation systems in Latin America during the nineteenth century was highly constrained by the relevance of trade taxes and foreign debt.[21] On the other hand, whereas it has been proved that education is a central tool used by wining elites to indoctrinate after victory in war,[22] there is also abundant evidence that shows that these efforts may be frustrated.[23] In the exclusive context of civil wars, central elites must tackle a trade-off in terms of post conflict intervention: consolidate the state building project through higher investments on previous rebel zones or allow for autonomy in these regions in order to secure peace in the long-term.[24]

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[17] Centeno, 'Blood and Debt: War and Taxation in Nineteenth-Century Latin America'
[18] Luis Schenoni, 'Bringing War Back in'
[19] Véjares, 'Varieties of State-Building' and Sabaté and Peres-Cajías, 'The War of the Pacific and Chilean public revenues'
[20] Ana Arjona, 'One National War, Multiple Local Orders: An Inquiry into the Unit of Analysis of War and Post-War Interventions', in Morten Bergsmo and Pablo Kalmanovitz (eds.), *Law in Peace Negotiations* (Oslo, 2010)
[21] Sebastián Mazzuca, *Latecomer State Formation: Political Geography and Capacity Failure in Latin America* (Yale University Press, 2021); Queralt, 'Pawned States'
[22] Paglayan, 'The Non-Democratic Roots of Mass Education'
[23] Dominic Rohner and Ekaterina Zhuravskaya, 'The Economics of Nation-Building: Methodological Tool Kit and Policy Lessons, *Annual Review of Economics*, Vol. 17 (2005), pp. 453-478.
[24] Lars-Erik Cederman and Manuel Vogt, 'Dynamics and Logics of Civil War', *Journal of Conflict Resolution*, Vol. 61(9) (2017), pp. 1992-2016.

Because of these reasons we propose to study the state building effects of victory in wars by taking into account both supply and demand forces. As for the former, we propose that the interest of central elites to increase state capacity investments across the territory will be in function of the strategic importance that the different regions have in the new state project. As for the latter, the ability to consolidate a new state-building path will be determined by the attitude of local elites towards the new project, either cooperative or confrontational. This framework is specific enough to identify key variables and broad enough to be replicated in other case studies.

3. Historical context

Independence from the Spanish Crown led to increasing levels of political instability across Latin America. In this context, the Chilean case stands out due to a relatively early and significant reduction in political instability from the early 1830s onwards. This fact, however, does not imply that political conflict was absent, nor that regional cleavages were insignificant. Starting from this point, this section presents the main historical events that must be considered in order to understand the link between wars and the evolving relationship between Chilean central and regional elites throughout the nineteenth century. For this, building on but departing somewhat from previous research,[25] the study focuses on seven macro regions (see Map 1 and Appendix 1).

[25] Véjares, 'Varieties of State-Building' and Sabaté and Peres-Cajías, 'The War of the Pacific and Chilean public revenues'

Map 1. Chilean macro-regions

Sources: Own elaboration.

The first Chilean Constitution was promulgated in 1818, with Bernardo O'Higgins the Supreme Director of the country. O'Higgins' rule was associated with a strong early tendency towards centralisation, with Santiago-appointed officials preferred to local elites in political appointments.[26] In rejection, popular assemblies were established in several regions (most importantly, in Concepcion and Coquimbo) and forces from across the country united under Ramon Freire, then *Intendente* of Concepcion, to demand the abdication of O'Higgins and challenge Santiago's political hegemony.[27] Thus, upon the resignation of O'Higgins in 1823, debate centred on the respective roles that the provinces and the capital, Santiago, should have in the administration of the new nation.

During this period, two dominant political factions emerged from the ruling *criollo* elite, the liberals (*or pipiolos*) and conservatives (*pelucones*). Over the following decade, they found themselves engaged in a persistent struggle for dominance. The subsequent instability,

[26] Carlos Zúñiga Polanco, 'De frontera interprovincial a provincia republicana. Talca en la consolidación politicoadministrativa chilena entre el Lontué y el Maule (1786-1851)', in Armando Cartes Montory (ed.), *Región y nación: la construcción provincial de Chile: siglo XIX* (Santiago de Chile 2020), pp. 297-333.
[27] Armando Cartes Montory, 'Concepción durante la organización nacional. Alianzas y resistencias entre "el reino de la toga" y "el reino de la espada"', in Montory (ed.), *Región y nación*, pp. 334-376.

including an aborted attempt to implement a federal system in 1826, culminated in a civil war in 1829. The liberal faction, led by Ramon Freire, boasted the support of elites from Talca (then part of the Santiago province) and Concepción, at the time the two largest urban areas outside the capital.[28] However, southern regions sided with the conservatives and secured a liberal defeat that closed any possibility for a federalist outcome,[29] ushering into power a conservative coalition with Diego Portales at the helm.

After the liberal defeat, Joaquín Prieto was installed as President in 1931, a *unitary* state model was adopted, and, in 1833, a new constitution was signed. Considered highly presidential in nature,[30] the 1833 Constitution allowed for two (with the possibility for three) successive terms and gave the President the power to appoint ministers, *intendentes*, governors, and ambassadors. In terms of Education, the 1833 Constitution recommended that *municipios* should be responsible for the running and maintenance of local public schools.[31] It did, however, introduce the notion of the State as a *superintendent*, responsible for the inspection and direction of public education, a first step on the road to a centralised system.[32]

Between 1830 and 1850, Chile experienced a stable conservative ruling coalition.[33] The Constitution was seen by critics as authoritarian, centralist and "*particularly presidentialist"*,[34] with local *intendentes* seen as the president's *"natural and immediate agent"*.[35] The successful outcome of the Confederation War (1836-39), although frowned upon overseas, strengthened the position of the conservative regime and anointed Prieto's successor, Manuel Bulnes, as well as uniting Chilean elites and contributing to a *"new national pride"*,[36] culminating in the first peaceful transition of power since Independence in 1841.

According to Collier, between 1833 and 1861, order was also maintained by force and the use of emergency powers.[37] So, the principal mechanisms of state consolidation were repression, reorganisation of the Civil/National Guard and electioneering. At the regional level,

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[28] Simon Collier, *Chile: The Making of a Republic, 1830-1865. Politics and Ideas* (Cambridge University Press, 2003).
[29] Zúñiga Polanco, 'De frontera interprovincial a provincia republicana', p. 315.
[30] Simon Collier, 'From independence to the War of the Pacific', in Leslie Bethell (Ed.), *Chile since Independence* (Cambridge University Press, 1993), pp. 1-32.
[31] Amanda Labarca, *Historia de la enseñanza en Chile* (Santiago de Chile, 1939), p. 92.
[32] These edicts were proposed and drafted by Mariano Egaña, largely considered to be Portales' successor in the administration.
[33] Collier, *Chile.*
[34] Collier, 'From independence to the War of the Pacific', p. 4.
[35] Ibid., p. 4.
[36] Brian Loveman, *Chile: The Legacy of Hispanic Capitalism* (New York, Oxford University Press, 1979), p. 141.
[37] Collier, *Chile.*

a top-down chain of command was adhered to with a centrally appointed provincial intendant overseeing departmental governors, who in turn oversaw *subdelegados* in *subdelegaciones*. In 1844, intendants' powers and status were enshrined in law and, during the 1840s, they acted as *"de facto police chiefs"*.[38] The provinces, in this way, were kept in line by their Santiago-based rulers, with the possible exception of the area around Valdivia and Chiloé, where the central government only appears to have had a very loose authority and administrative control before 1850.[39]

The expansion of public education arose as one of the areas favoured by political elites, on both sides of the divide, during this period.[40] In 1842, the Universidad de Chile was established as the *superintendent* of primary education with the objective of expanding educational provision through nationwide state schools. While the central government acted as administrator and funder, schools were built, staffed and managed by local government. Orders were not given *from above* for the founding of a new school. As such, the process depended on the will of local communities (authorities, families, and citizens).[41] Additional funds were also often requested and granted for the purchase and maintenance of school materials (books, chairs, tables, clocks, bells, blackboards etc.).[42] Local authorities were also responsible for inspections, which were carried-out by private (albeit state-funded) *juntas*.[43]

In 1848, a decree suggested by José Victorino Lastarria was brought to Parliament, recommending the spread of primary education across the country.[44] Lastarria supported a model of centralized funding, arguing that the state should be solely responsible for public education. In 1849, Manuel Montt, then Minister for Education and influenced by his friend, the influential thinker Domingo Sarmiento, advocated for a hybrid system: decentralized municipal financing of schools with centralized administration and inspection. He argued for universal education, based on providing two schools (one for boys, one for girls) for every 2000 people, to be directed by the state and administered by local authorities. The funding model suggested by Montt consisted in a direct tax on those citizens whose earnings were

[38] Collier, 'From independence to the War of the Pacific', pp. 25-6.
[39] Hernán Delgado Delgado, 'Del antemural del Pacífico al granero de Chile. Valdivia, Osorno y Puerto Montt en las coyunturas del siglo XIX', in Montory (ed.), *Región y nación*, pp. 422-479.
[40] Collier, *Chile*, p. 105.
[41] Macarena Ponce de León Atria, 'La llegada de la escuela y la llegada a la escuela. La extensión de la educación primaria en Chile, 1840-1907', *Historia,* Noo. 43, vol. II (2010), pp. 449-486.
[42] María Loreto Egaña Baraona, *La Educación primaria popular en el siglo XIX en Chile: una práctica de política estatal.* (Santiago, 2000), pp. 91-2.
[43] Ponce de León, 'La llegada de la escuela y la llegada a la escuela', p. 460.
[44] Guillermo González, *Memoria Histórica de la Educación Pública (1810-1900)* (Santiago de Chile, 1913), p. 101.

sufficient to pass the threshold required to be an *elector*. This was to be collected and administered by local authorities (*municipalidades)*.[45] The proposal provoked debate and disagreement in Congress and was initially rejected, with subsequent debates centred on the funding model and the controversial proposal of the new direct tax, as well as the role of local authorities.

In 1851, Manuel Mont was selected as successor to President Bulnes. Montt did not come from the traditional landowner elite, as all previous Presidents had, and his lowly status was considered problematic by dissenting voices.[46] Similarly, his election was perceived by some as an autocratic overstep and led to an attempted coup by a coalition of liberal elites in Concepción, headed by José Maria de la Cruz, and mining groups in the north.[47] The northern epicentre of the uprising was La Serena (Coquimbo), which, along with Concepción, was considered to be one of the cities where the *"spirit of provincial autonomy"* lasted longest.[48] While the other parts of the region, Elqui, Combarbalá, Illapel and Ovalle had strong conservative leanings, La Serena had an embedded *Liberal* tradition, as well as long-standing resentment towards the capital dating back to the defeat of the federalist project in 1828. Local elites were determined that their candidates should be selected and cried governmental foul-play during the elections of 1851.[49] The resultant civil war proved violent, but short, and the rebellious forces were quickly quashed by the central government with Concepción brought into line.

Among the consequences of the conflict was a consolidation of central power over regional factions. A bloody mutiny had also taken place in Magallanes in 1851, precipitating renewed state consolidation efforts in the extreme southern outpost of the country.[50] Dissident figures were forced into exile and authoritarianism continued to be the principal mode of governance throughout the decade.[51] However, resentment towards the government only intensified as the decade progressed, and the *Liberals* continued to grow as a force in

[45] Egaña Baraona, '*La Educación primaria popular en el siglo XIX en Chile'*, p. 51
[46] Alberto Edwards, *El Gobierno de don Manuel Montt: 1851-1861* (Santiago, 1932)
[47] Loveman, '*Chile: The Legacy of Hispanic Capitalism',* pp. 179-80.
[48] Edwards, *El Gobierno de don Manuel Montt,* p. 70. Concepción's strong military history – after having played a key role in successfully overthrowing governments in 1823 and 1829 – gave its inhabitants "illusions of power" (Collier, *Chile*, p. 11) and contributed to a long-standing regional resentment of the Santiago-Valparaíso axis Montory 'Concepción durante la organización nacional', p. 360.
[49] Edwards, *El Gobierno de don Manuel Montt*, p. 72.
[50] Edwards, *El Gobierno de don Manuel Montt*, p. 112; Mateo Martinic Beros, 'Magallanes: la perifèria austral en la consolidación republicano. Un caso atípico por origen y evolución', in Montory (ed.), *Región y nación*, pp. 521-545.
[51] Edwards, *El Gobierno de don Manuel Montt*, p. 119.

opposition. A radical fringe to the party, heavily connected to artisan rights movements, also emerged, and included early elements of workers' rights movements.[52]

In this context, another civil war broke out in 1859, this time with its epicentre in the Atacama province.[53] The rebellion was also sparked by another unpopular choice for Presidential succession, Antonio Varas. *Radical liberal* elites in the Atacama province demanded lower taxes on copper and silver exports,[54] and expressed grievances relating to perceived authoritarianism and centralisation.[55] This newly *"politically and ideologically mature"* and increasingly wealthy Atacaman elite posed a new threat to the traditional hegemony of the *terrateniente* ruling classes.[56] While the uprising was again unsuccessful in its aim to overthrow the government, it ultimately signalled a form of "political defeat" for the *Portalian* state.[57] In fact, the fallout from the ensuing conflict led to a breakdown of the *liberal-conservative* divide and the newly elected president, José Joaquín Pérez, who came to power in 1861 as part of Montt's nationalist party, incorporated both *liberals* and *conservatives* into his administration. Unlike in 1851, opposition ringleaders were quickly allowed to return from exile, reincorporated into civil life and even allowed to stand in elections.[58] The *Radicals*, and nascent workers' collectives, consequently, continued their rise during the 1860s.

These violent clashes demonstrate the importance of the issue of centralisation to contemporary debate, with Loveman suggesting that critics believed that Santiago exploited northern mining and southern agriculture for its own gain.[59] Collier asserts that *centralisation* in Chile was an early (pre-1833 Constitution) phenomenon and that the civil wars of the 1850s were largely insignificant in affecting the spatial distribution of political influence, only serving to demonstrate the powerlessness of peripheral regions.[60] Alternatively, Véjares argues that the central government did not have a real presence across regions before the 1850s and that *"local notables retained significant agency"*. He claims that the *"centralist nature of the constitution*

[52] Collier, *Chile*, pp. 136-7.
[53] The mining elites in the Atacama had wholeheartedly supported government forces in the 1851 civil war, sending an expedition to fight against the opposition forces in La Serena. See Edwards, *El Gobierno de don Manuel Montt*, p. 85-7.
[54] Luis Ortega and Pablo Rubio, 'La Guerra Civil de 1859 y los límites de modernización de Atacama y Coquimbo', Revista de Historia Social y de las Mentalidades, 10(2) (2006), pp. 11-39.
[55] Valentina Verbal Stockmeyer, 'De hermana mayor a madre protectora. Santiago frente a las provincias (1810-1860)', in Montory (ed.), *Región y nación*, pp. 220-257.
[56] Ortega and Rubio, 'La Guerra Civil de 1859, p. 13.
[57] Collier, 'From independence to the War of the Pacific', p. 9
[58] Ortega and Rubio, 'La Guerra Civil de 1859'.
[59] Loveman, '*Chile: The Legacy of Hispanic Capitalism'*, p. 154
[60] Collier, *Chile*.

was nominal rather than real". Although appointed by the president, intendants were usually *"chosen in agreement with local elites"* and in accordance with *"local elites' sensibilities"*.[61]

The turbulent 1850s would also prove key to the fate of the Araucanía and its indigenous *mapuche* population. During the period preceding Chilean independence, a relatively stable coexistence in both economic and social terms had existed between the indigenous population of the Araucanía and the Borbon authority in Chile.[62] Notwithstanding a few isolated incidents of rebellion (in 1723 and 1766), the ruling authority treated the indigenous territories as a sort of vassal state. During the independence process, while revolutionary leaders invoked the indominable spirit of the *mapuches* in their fight against the Spanish,[63] the *mapuches* themselves were resistant to any disruption of the established order that had enabled centuries of co-existence with Spanish rule. Once the Independence wars were over, the newly formed government soon turned their attention to the incorporation into the national fold of indigenous-controlled lands.[64] However, after a number of indigenous rebellions during the 1820s and 1830s were subdued, a semblance of the pre-existing order was restored and the notion that two nations could co-exist within one territory was briefly sustained.[65]

From 1850 onwards, this peaceful dynamic was ruptured, and the *nationalisation* project began to impose itself upon the region. Firstly, following the 1851 rebellion, the state sought to clearly define its external and internal limits, hoping to stave off future challenges to centralised rule.[66] A gradual administrative incorporation took place, beginning with the creation of the Arauco province in 1852. This gave the state *"judicial legitimacy"* in the region,[67] marking the moment that bureaucracy emerged as an accompaniment to the military in the expansion of the Chilean state into previously *unconquered* lands.[68] This national

[61] Véjares, 'Varieties of State-Building', pp. 8-9. He goes on to state that, in each region, different *"nonstate"* actors were influential in selecting political appointees and even in the management of local infrastructure and provision of public goods; Mining businessmen and guilds in Atacama, Foreign elite coupled with *mapuche caciques* in the Concepción area, and traditional landowners in the Central Valley.
[62] Jorge Pinto, 'La Araucanía, 1750-1850. Un mundo fronterizo en Chile a fines de la Colonia y comienzos de la República', in Jorge Pinto (Ed.), *Modernización, Inmigración y Mundo Indígena: Chile y la Araucanía en el siglo XX.* (Temuco, 1998)
[63] Ibid.
[64] Ibid., p. 29
[65] Ibid., p. 49
[66] In this line, international treaties were signed with Argentina (in 1855) and Peru and Ecuador (in 1856) and, ultimately unsuccessful, attempts were made to settle an ongoing border dispute with Bolivia in 1852. Described in Edwards, *El Gobierno de don Manuel Montt*, pp. 9-10.
[67] Jorge Pinto, *La formación del Estado y la nación, y el pueblo mapuche: De la inclusión a la exclusión* (Santiago, 2003), p. 185.
[68] Ibid., p. 187.

consolidation project also had an impact on the regions to the south of the Araucanía, with the foundation of the *Colonial Territories* of Llanquihue and Magallanes in 1853. Additionally, a wider ideological incentive, drawing on the *civilization* and *barbarism* dichotomy popularised during the Argentinian civil war was used by the governing classes to justify the proposed military campaign.[69]

As well as the state's desire for territorial consolidation, an economic imperative for agricultural land emerged in response to growing domestic and international demand.[70] The nation's migratory policy also fed into this, the government wishing to populate the economically *underexploited* region with a more *productive* European workforce.[71] Again, a similar policy was adopted for the southern regions of Valdivia and Llanquihue, where a government sponsored recruitment drive led to mass immigration from central Europe during the 1850s.[72] Taking advantage of the favourable conditions, a number of wealthy landowners and high-ranking generals from the Santiago and Valparaíso areas purchased land in the *frontier* zone from *caciques*, paving the way for a *soft colonisation* before the forced expansion of the frontier.[73]

In this context, during the 1859 civil war, a united Mapuche force staged an attack on existing military outposts in the Arauco region. However, once order was restored in the north, the government in Santiago used the attack as justification for replacing the ongoing *soft colonisation* with a more formal and ambitious military campaign.[74] A plan to finally bring the Araucanía under state control was presented by General Saavedra to Congress in 1861. Despite Saavedra's stated intentions, a bloody battle ensued between 1868 and 1871, culminating in the advancement of the Chilean frontier to the Malleco river. Mapuche resistance managed to halt further advancement and an uneasy peace held for roughly 10 years until 1881. During this decade, the state made significant infrastructural advances in the region, namely railways and telegraph lines.[75]

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[69] Andrés Núñez, Rafael Sánchez and Federico Arenas (Eds.) *Fronteras en Movimiento e Imaginarios Geográficos. La cordillera de Los Andes como espacialidad sociocultural* (Santiago 2013).
[70] José Bengoa, *Historia del pueblo mapuche: (siglo xix-xx)* (Santiago, 1996), pp. 156-7.
[71] Pinto, 'La Araucanía, 1750-1850'
[72] Carlos Durán Migliardi and Luis Eduardo Thayer, 'Los migrantes frente a la ley: continuidades y rupturas en la legislación migratoria del estado chileno (1824-1974), *Historia*, 396, n. 2 (2017).
[73] Bengoa, *Historia del pueblo mapuche*, p. 159.
[74] Ibid., pp. 180-1.
[75] Ibid., p. 251

Another important change after the 1859 civil war relates to education policies. Montt's much debated education bill had eventually been passed in 1860. *Municipal* schools (as well as *conventuales* and *fiscales*) were gradually replaced by state (*publica*) schools and new schools were founded according to Montt's proposed ratio.[76] Constant debate over the responsibilities of municipalities and central government continued in the years following the passing of the bill,[77] as well as power struggles between local *intendentes* and state *inspectors*.[78] Lopez argues that the 1860 Education Bill helped to maintain the centralized authority established after the 1833 Constitution, increasing the presence of the state in the lives of its citizens.[79] This view is supported by the findings of Soifer and Saylor, who both show how the state invested significantly in educational and infrastructural development during the 1870s.[80]

Despite the gains made in state consolidation, Chile was greatly affected by the global depression of the early 1870s,[81] and the recession was only really halted by the War of the Pacific. A disagreement with Bolivia over a tax on mining activity led to the breakout of war and the eventual annexation of the nitrate-rich lands in the Atacama Desert after Chile's victory in the conflict. The Chilean navy had managed to establish dominance over the Peruvian fleet and secured a key victory in the battle of Iquique in 1879. By January 1881, the Chilean army had occupied Lima, and resistance was restricted to a protracted guerrilla campaign.[82] As in the 1830s, potential civil and political unrest was again staved off by an external military conflict.[83]

While the war was going on, debate continued in Santiago and Valparaíso as to how and when the colonisation of the Araucanía would be completed. The National Guard made up of local residents of the new frontier towns had been repeatedly raiding and attacking Mapuche settlements with impunity.[84] One such attack in 1880 provoked a furious response from the indigenous population, who attacked one of the frontier towns of Traiguen. Coupled with the

[76] Labarca, *Historia de la enseñanza en Chile,* pp. 148-9.
[77] Egaña Baraona, '*La Educación primaria popular'*, pp. 72-5
[78] Ponce de León, ''La llegada de la escuela y la llegada a la escuela', p. 469.
[79] David Neil Carlos Lopez, State Building, Elite Ideology, and Mass Schooling: The Formation of Education Leviathans Since the Nineteenth Century, PhD diss., University of Washington, 2019.
[80] Soifer, 'The Source of Infrastructural Power'. For a comprehensive study of infrastructure spending in Chile during the period, see Ryan Saylor, 'Sources of state capacity in Latin America: commodity booms and state building motives in Chile', in *Theory and Society*, Vol. 41, N. 3 (2012), pp. 301-24.
[81] Marcus Kurtz, *Latin Amreican State Building in Comparative Perspective: Social Foundations of Institutional Order* (Cambridge University Press, 2013).
[82] Sabaté and Peres-Cajías, 'The War of the Pacific and Chilean public revenues'
[83] Collier, *Chile*.
[84] Bengoa, *Historia del pueblo mapuche,* p. 272.

advance of Argentinian forces on the other side of the border, the *mapuches* were pushed towards a confrontation with the army and again attacked Traiguen in 1881. This provoked outrage in Santiago and, following victory in the War of the Pacific, the Chilean state was able to turn its full attention to the *frontier*. Mobilisation for the war had created a large, more professional, army that was now clearly *"capable of subjugating the people of Araucania"*.[85] Meanwhile, increased migration and educational expansion were considered by Santiago politicians to be the most effective tools for the social integration necessary following territorial consolidation.[86] The rapid internal migration to the Araucanía in the period following its *colonisation* led to extreme poverty and crime.[87] In response, two possible cures to these ills were proposed by the ruling classes: police and education.[88]

As well as providing the conditions for the *coup de grâce* in the colonisation of the Araucanía, and securing the main source of Chile's revenues for decades to come,[89] Collier argues that victory in the War of the Pacific was key to the consolidation of a *national shared identity*.[90] Similarly, Tamborino and Guizardi suggest that it represents *"the historical event that establishes, conforms and confirms the representational ideal of the Chilean national identity"*.[91] Victory added military leaders to the *"pantheon of national heroes"* and reinforced *"the prevailing Chilean belief in the nation's racial and cultural superiority"* over their northern neighbours.[92]

Schenoni claims that the successful outcome of the war legitimised the president, Domingo Santa Maria, and helped make peripheral elites amenable to the national political project.[93] In the new northern territories incorporated after the war, the state, concerned about its legitimacy and sovereignty in the region, sought to fortify its presence and education played

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[85] Loveman, '*Chile: The Legacy of Hispanic Capitalism'*, p. 194.
[86] Sol Serrano, 'De Escuelas Indígenas sin pueblos a pueblos sin Escuelas Indígenas: La Educación en la Araucanía en el siglo XIX', *Historia*, Vol. 29 (1995-96), pp. 423-74. This point is also made in Jorge Pinto, *La formación del Estado y la nación, y el pueblo mapuche*, p. 204.
[87] Jorge Pinto, *La formación del Estado y la nación, y el pueblo mapuche*
[88] Ibid., pp. 223-4.
[89] Bowman and Wallerstein, 'The Fall of Balmaceda and Public Finance in Chile'. A detailed account of the impact of the War of the Pacific on Chile's public revenues is given in Carmenza Gallo, 'Tax Bargaining and Nitrate Exports: Chile 1880-1930', in Deborah Brautigam, Odd-Helge Fjeldstad and Mick Moore (eds.), Taxation and State-Building in Developing Countries (Cambridge University Press, 2008).
[90] Collier, 'From independence to the War of the Pacific', p.31.
[91] Felipe Valdebenito Tamborino and Menara Lube Guizardi, 'Las fronteras de la modernidad: el espacio Tacnoariqueño y la nacionalización del Norte Grande chileno (1883-1929)', *Estudos Ibero Americanos*, Vol. 40, no. 2 (2014), p. 297.
[92] Loveman, '*Chile: The Legacy of Hispanic Capitalism'*, p. 193.
[93] Luis Schenoni, *Bringing War Back In,* pp. 214-20.

a key role in the state-backed *chilenisation* process.[94] By the 1880s, the transition to a state-funded education model was virtually complete, with local government no longer viewing education funding as their responsibility and instead requesting (or demanding) reimbursements and subsidies for all costs incurred.[95]

In this context, the expansion of public, and especially primary, education in Tarapacá was prioritised by both local and central rulers.[96] In northernmost Tacna, the treaty of Ancón (1883) promised self-determination via a public referendum. This shaped the state's drive for *chilenisation* in the province, with public education used to steer the remaining Peruvian population down the desired path of *nationalisation*. The lingering elements of the Peruvian educational infrastructure were dismantled, with a decree in 1885 making the use of Lima-approved textbooks a crime, and an extensive Chilean education system was quickly and efficiently erected in its stead.[97]

Under Balmaceda's presidency (1886-1891), with the state's coffers buoyed by the nitrate industry, revenues were funnelled into ambitious public works projects, including railroads, bridges, roads, prisons and, notably, public schools.[98] At the same time, workers collectives began to push for improved conditions and social change.[99] Likewise, industrial action became a growing threat in response to inflation and stagnant wages, which culminated in the declaration of a general strike in 1890.[100] Among workers' demands was the call for the establishment of primary schools in every mining office.[101]

At the same time, a union between congressional forces angered by a perceived presidential over-reach generated a full-scale civil war in 1891. Factions of disgruntled northern workers, led and trained by colonel Emil Körner, defeated forces loyal to the President, with Balmaceda's demise marking the end of the Presidential model that had held since the establishment of the *Portalian* state in the 1830s. Sagredo Baeza argues that the fall

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[94] Tamborino and Guizardi, 'Las fronteras de la modernidad'.
[95] Egaña Baraona, '*La Educación primaria* popular', p. 85.
[96] Elías Pizarro Pizarro and Raúl Bustos González, 'Educación y control político-social del Estado: Visitadores de Escuela en Tacna y Arica (1880-1900)', *Revista Historia de la Educación Latinoamericana*, Vol. 17 No. 25 (2015), p. 131.
[97] Tamborino and Guizardi, 'Las fronteras de la modernidad'
[98] Rafael Sagredo Baeza, 'Balmaceda y los orígenes del intervencionismo estatal', in Luis Ortega (Ed.) *La Guerra Civil de 1891* (Santiago de Chile, 1991), p. 42.
[99] Alfredo Jocelyn-Holt Letelier, 'La crisis de 1891: civilización moderna versus modernidad desenfrenada', in Ortega (Ed.) *La Guerra Civil de 1891*, pp. 23-36.
[100] Loveman, '*Chile: The Legacy of Hispanic Capitalism'*, p. 206.
[101] Enrique Reyes Navarro, 'Los trabajadores del área salitrera, la huelga general de 1890 y Balmaceda', in Ortega (Ed.) *La Guerra Civil de 1891*, p. 104.

of Balmaceda was more a reaction to a perceived abuse of presidential power than any response to an overly statist economic policy from the administration.[102] Regardless of this, in the years following 1891, the idea of *Balmacedismo* synonymous with a strong interventionalist state gained significant support, especially in the Tarapacá region among workers in the mining sector, for whom his defeat was cast as a national tragedy that paved the way for the *oligarchic republic* of the early twentieth-century.[103]

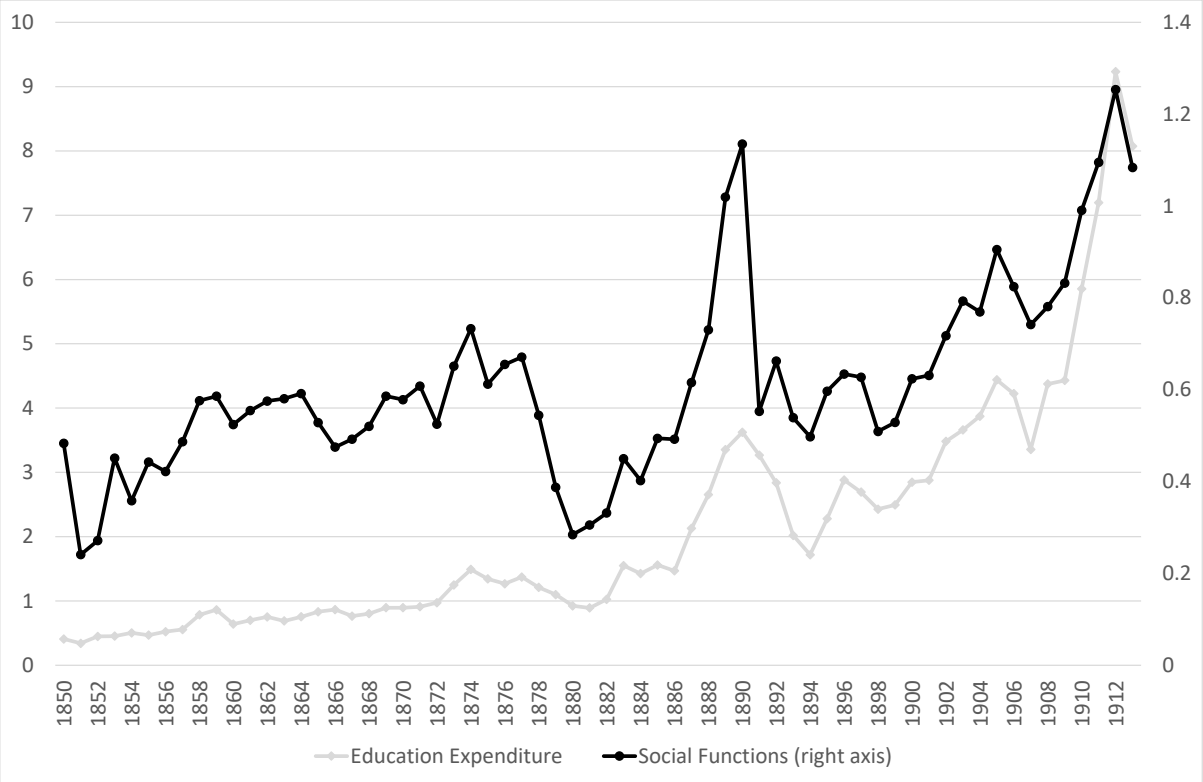
After 1891, the political system shifted to a more congressional model. While the so-called *parliamentary period* was plagued by electioneering, vote buying and corruption,[104] it also witnessed a marked progress in civil liberties, press freedoms and the emergence of organised workers movements.[105] After the turn of the century, much political debate revolved around the *national problem* of low school attendances and concerns were raised about a perceived slow improvement in literacy rates.[106] Eventually, in an effort to improve attendance figures, the Obligatory Education Bill, which also reaffirmed the position of central government as the primary funder of primary education, was approved and passed in 1920.[107]

4. The uneven expansion of public education at the regional level

The study of education expenditures in real terms and investments in social services (where education expenditures were the most relevant item) as a fraction of GDP, show similar trends. In both cases, an increasing trend was noticeable some years *before* the 1859 civil war. A new acceleration took place during the early 1870s that was reversed in the following years due to the fiscal crisis and the beginning of the War of the Pacific. Expenditures tended to recover during the early 1880s and accelerated importantly during the years of the Balmaceda administration (1886-1891). Then, expenditures stabilized and presented a new increasing trend since the beginning of the twentieth century.

[102] Sagredo Baeza, 'Balmaceda y los orígenes del intervencionismo estatal'
[103] Julio Pinto Vallejas, 'El *balmacedismo* como mito popular: Los trabajadores de Tarapacá y la Guerra Civil de 1891' in Ortega (Ed.) *La Guerra Civil de 1891*, p. 111.
[104] Loveman, '*Chile: The Legacy of Hispanic Capitalism'*
[105] Ibid., pp. 216-7.
[106] Labarca, *Historia de la enseñanza en Chile*, p. 233.
[107] Ibid., p. 230.

Figure 1. Government investment in education (millions of 1878 pesos) and social functions (% of GDP) in Chile, 1850-1913



Source: Education expenditures own elaboration based on *Anuarios Administrativos* (various years). Social functions expenditures taken from Diaz et al, 2016.

These trends have been analysed in previous research,[108] but this section goes beyond the aggregate figures and focuses on the evolution of primary education investment at the subnational level.[109] Data for central government investment in primary education comes from Budget Laws of the *Ministry for Justice, Religion and Public Education* (latterly *Ministry for Public Education*) for the years 1852-1905. All items have been assigned to a specific *departamento*.[110] Our regional comparison considers education spending in function of school-

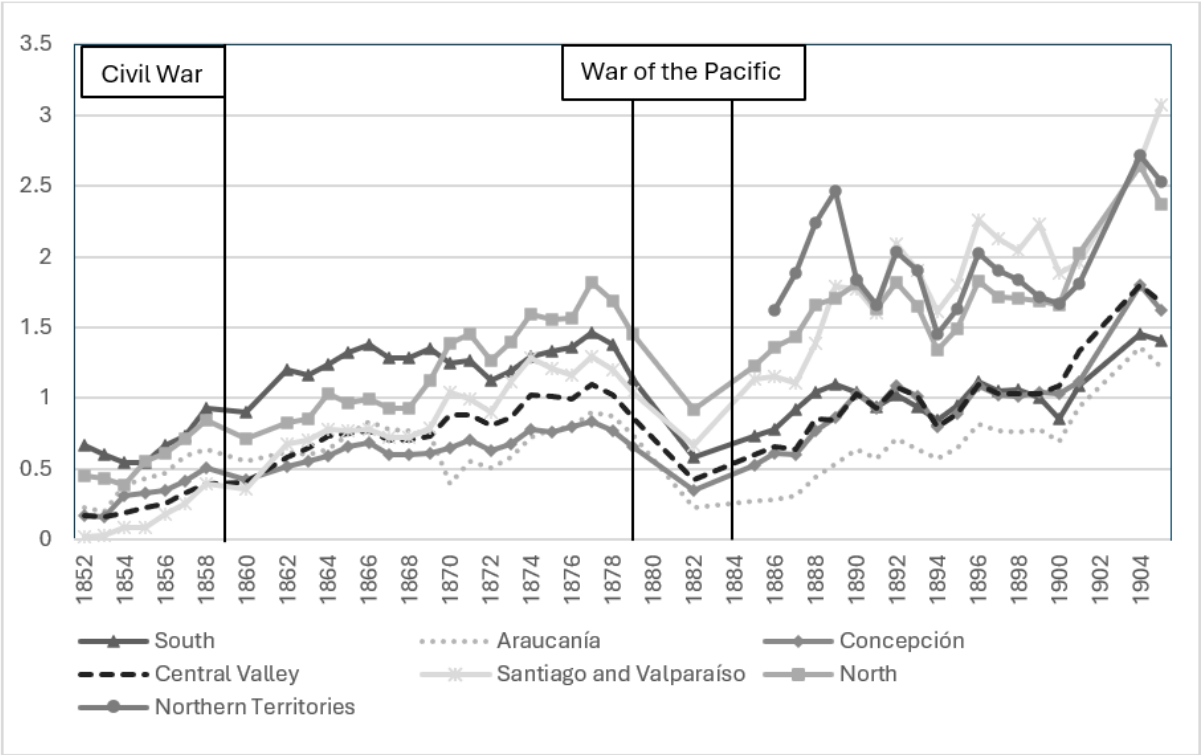
[108] See Bowman and Wallerstein, 'The Fall of Balmaceda and Public Finance in Chile' and Soifer, 'The Source of Infrastructural Power'.
[109] The attention to primary education is justified by the key role that it has been shown to play in state building (see, Alesina and Reic, 'Nation Building') and state capacity development (see Soifer, 'The Source of Infrastructural Power).
[110] The Chilean state was divided in different provinces that were further composed by different *departamentos*. When the assignation of an item was unclear, we have divided the investment equally between all *departamentos* within the province for the year in question. E.g. 1852, province of Valdivia: *"Dotación de una escuela de niñas i tres de hombres, la primera con 240 pesos i las segundas con 200 pesos cada una…".* Total amount assigned equally to *departmentos* Valdiva, La Unión and Osorno (then part of Valdivia province).

age population, which is garnered from Census data (various years).[111] This enables us to focus on the target population of education policies. Moreover, given that this population group does not present sudden changes in any Chilean region (contrary to what happens in total population), we are confident that this indicator primarily reflects changes in education investment and not in demographics.

Our detailed quantitative evidence highlights the existence of significant regional heterogeneity in terms of education spending per school-age child. To begin with, an analysis focused on Chilean macro regions shows that the relative status of each region was contingent on the changing historical landscape (Figure 2). For instance, central government investment in primary education in Santiago and Valparaiso were well below the national level before the introduction of the 1860 Ley Organica. By 1905, however, this was the *region* in receipt of the highest levels of investment. Conversely, the Southern region went from being the best-served region during the 1860s to amongst the worst-served by the end of the period. The North, meanwhile, consolidated early high investment during the 1870s and remained as one of the regions with the highest levels at the start of the twentieth century. In fact, after the War of the Pacific a clear divergence in spending patterns emerged between the group composed by the Northern regions and Santiago and Valparaiso, and the rest of the country.

Figure 2. Government investment in primary education per school-age child. *Macro-regions*. 1878 pesos. 1855-1905

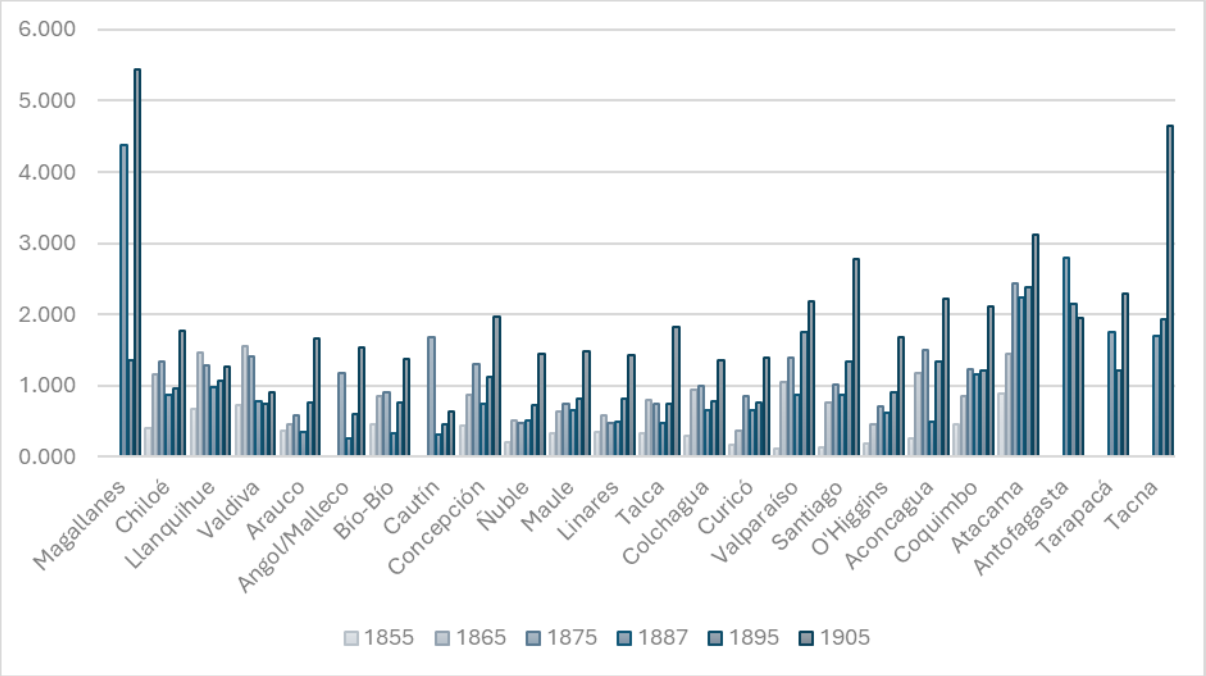
[111] The range of school age population changed across Chilen censuses from 7-15 in 1854, 1865 and 1885, to 5-15 in 1895, and 6-15 in 1907. These changes in the school age definition are not significant enough to create sudden changes in the total number of school age population. In any case, these changes would not be a major concern given that our main interest relates to spatial variation.



Source: Own elaboration. Spending levels taken from Budget Laws (various years). Population figures from Census data (various years).

The analysis of spending patterns at the provincial level confirms this regional heterogeneity. On the one hand, expenditure levels in provinces like Concepción and Atacama were systematically among the highest before the War of the Pacific. This is also noticeable both in the northern and southern border regions of the country after the War of the Pacific (Tacna and Magallanes). On the other hand, whereas education investment tended to increase across time in most provinces, there were some cases where important reversals or stagnation took place. This is particularly evident in the case of Valdivia.

Figure 3. Central government investment in primary education per school-age child, by *provincia*. 1878 pesos. 1855-1905

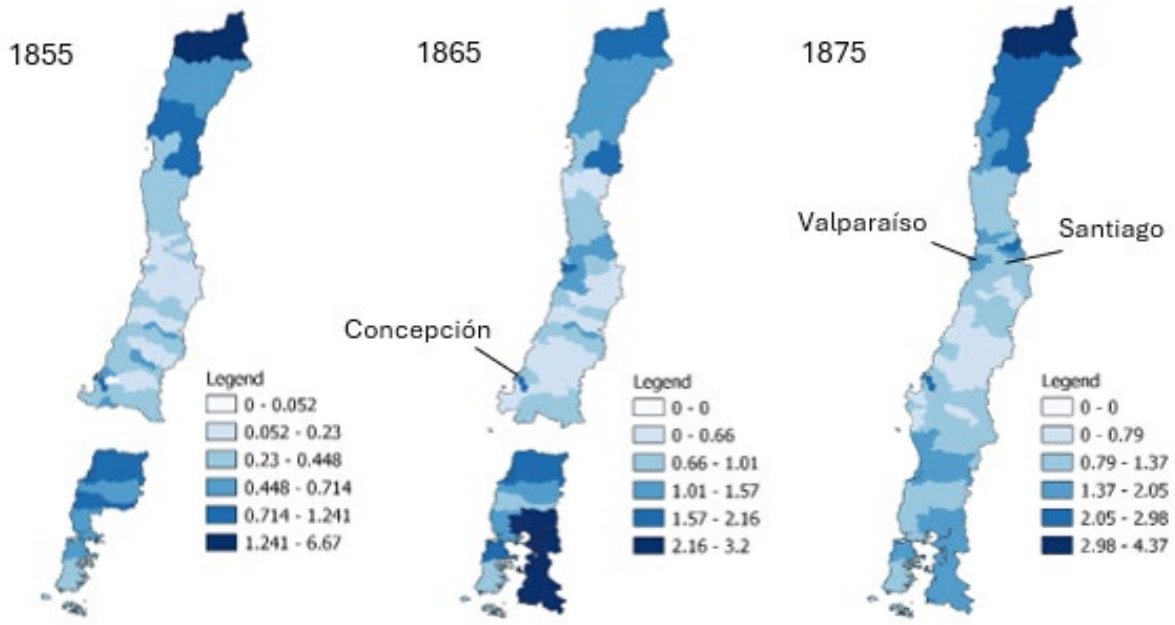


Sources: Own elaboration. Spending levels taken from Budget Laws (various years). Population figures from Census data (various years). See Appendix for breakdown for each decade.

Our analysis at the *departamental* level shows that, as territorial expansion brought about by internal and external wars of conquest changed Chile's map, the concentration of spending levels on education shifted around it. In both 1855 and 1865, the highest levels of spending were found in Northern and Southern *departamentos*, while the Central Valley to the south of Santiago (excepting the area immediately around Concepción) had very few areas with significant levels of investment (Map 2). By 1875, while the North was home to four of the five *departamentos* with the highest expenditure levels[112], the South decreased somewhat in protagonism. By contrast, a significant increase in the levels of investment was observable in several *departamentos* around Valparaíso and Santiago.

Map 2. Government investment in primary education per school-age child, by *Departamento*. 1878 pesos. 1855-1875.

[112] The *departamentos* with the highest levels of central government investment in 1875 are, in descending order; Caldera (Atacama), Concepción, Elqui (Coquimbo), Vallenar and Copiapó (both Atacama).

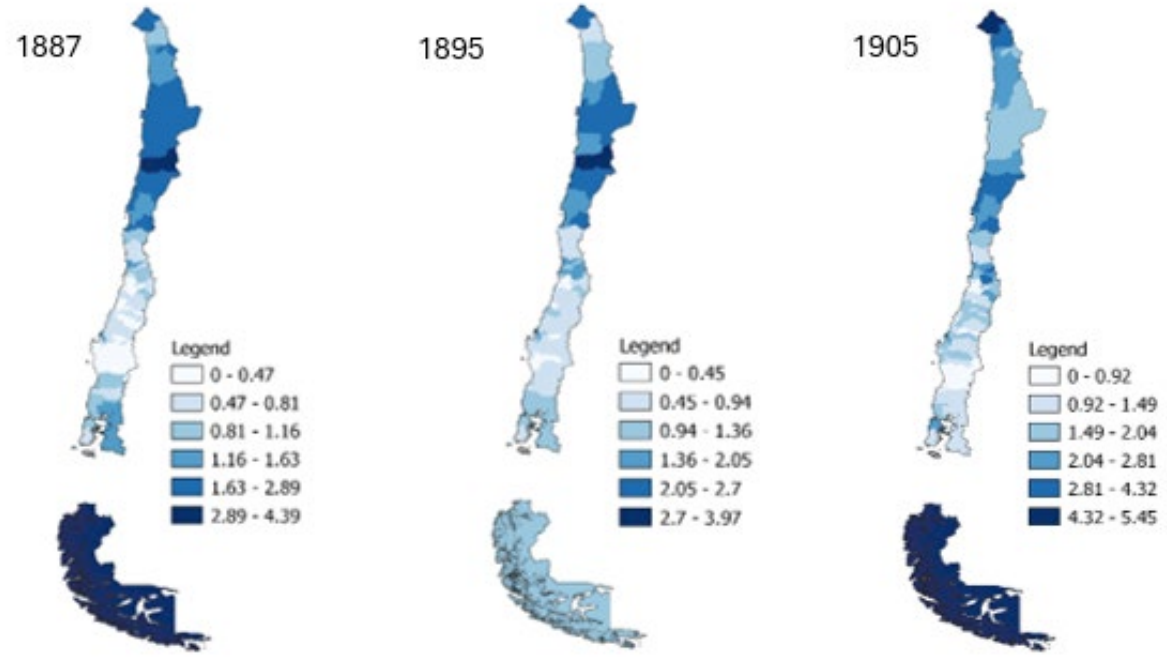


Sources: Own elaboration. Investment levels are taken from Ministerial Budget Laws (various years). Population figures taken from Census (various years).
Notes: Due to data availability, 1855 figure for Caldera taken from 1857; 1865 figures for Coquimbo and Limache are taken from 1866; 1875 figures for Cañete and Mulchen are taken from 1878 and 1877 respectively.

A new distribution in investment levels took place after the end of the War of the Pacific and the annexation of Antofagasta, Tacna and Tarapacá (Map 3). The new territories quickly found themselves amongst the provinces with the highest levels of investment, along with Atacama, which retained its comparatively high levels. By contrast, whereas investments increased in Magallanes, the four provinces with the lowest levels of investment were located in the newly fully incorporated regions of the Araucanía.[113] This is despite an increase in investment during the late-colonisation period of the 1870s (see Figure 2). Thus, by 1905, the areas with the highest overall levels of government investment had an undeniable northern bias, with eight of the ten *departamentos* with the highest levels found in this region (both the traditional and the new one).

Map 3. Government investment in primary education per school-age child, by *Departamento*. 1878 pesos. 1887-1905.

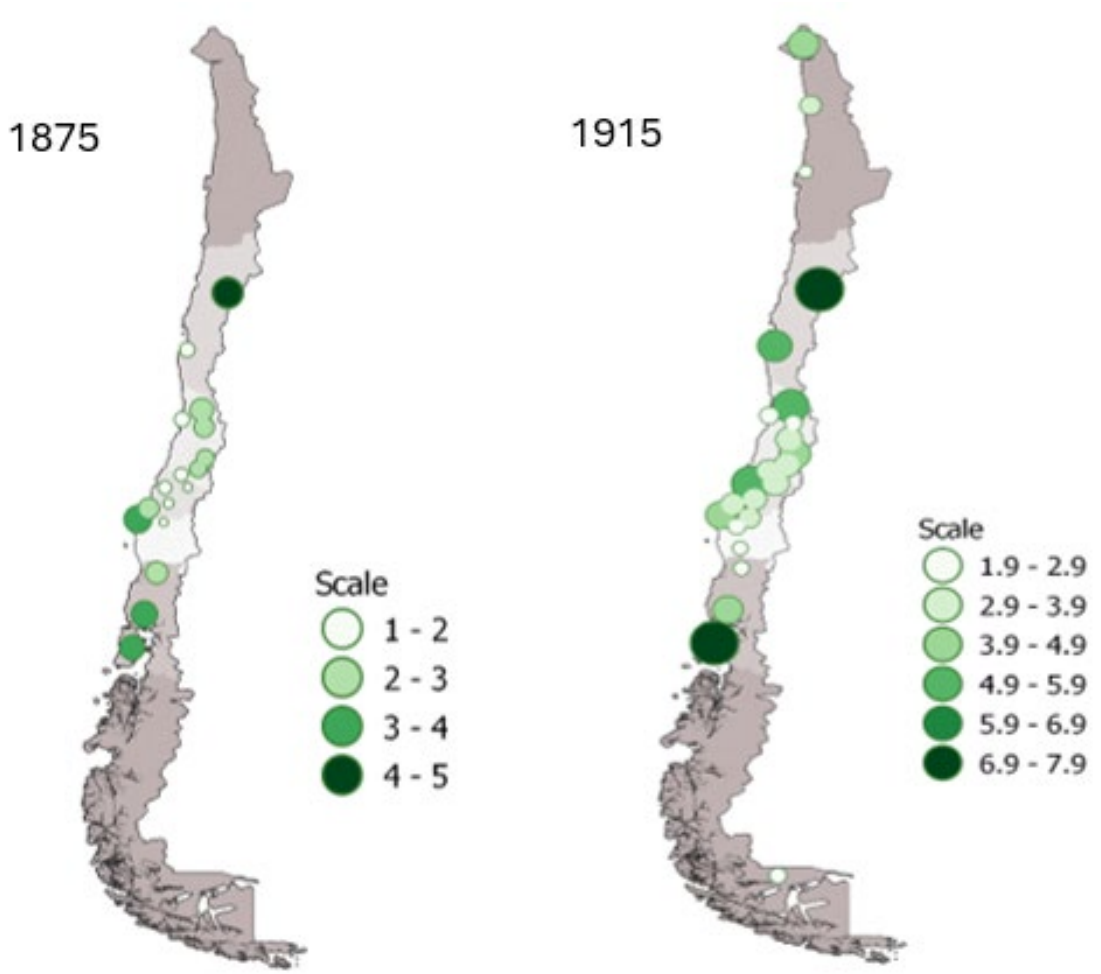
[113] I.e. Angol/Malleco, Cautín, Arauco and Bío-Bío. Similarly, six of the ten *deparatmentos* with the lowest levels of investment are also found in these provinces: Mulchen and Nacimiento (Bio-Bio), Cañete and Arauco (Arauco), Angol (Malleco) and Imperial (Cautín). Magallanes is a somewhat unique case, with an extremely low population density, consisting in 171,438 km2 and only 2449 school-age children in 1907.



Sources: Own elaboration. Investment levels are taken from Ministerial Budget Laws (various years). Population figures taken from Census (various years).
Notes: 1887 figures for Tocopilla taken from 1889.

So far, our analysis has concentrated on education spending per school age-child. An alternative indicator to evaluate regional differences in education investments refers to the total number of public schools per school age-child. While the number of schools is not directly analogous to investment due to pre-existing infrastructure, and that data availability is scarcer, we have enough evidence to identify changes before and after the War of the Pacific (Map 4). In 1875, a greater concentration of schools can be found in the North, Concepción and the South, while the Araucanía and the Central Valley are the worst-served. In 1915, we see that, despite increased investment in the new northern territories, the traditional North retains the highest levels of coverage. While the southern provinces of Valdivia and Llanquihue have experienced a relative decline in investment, and accordingly experienced a reduction in public school coverage, the island of Chiloé retains strong public educational infrastructure.

Map 4. Public schools per 1000 school-age children, by province. 1875 and 1915.



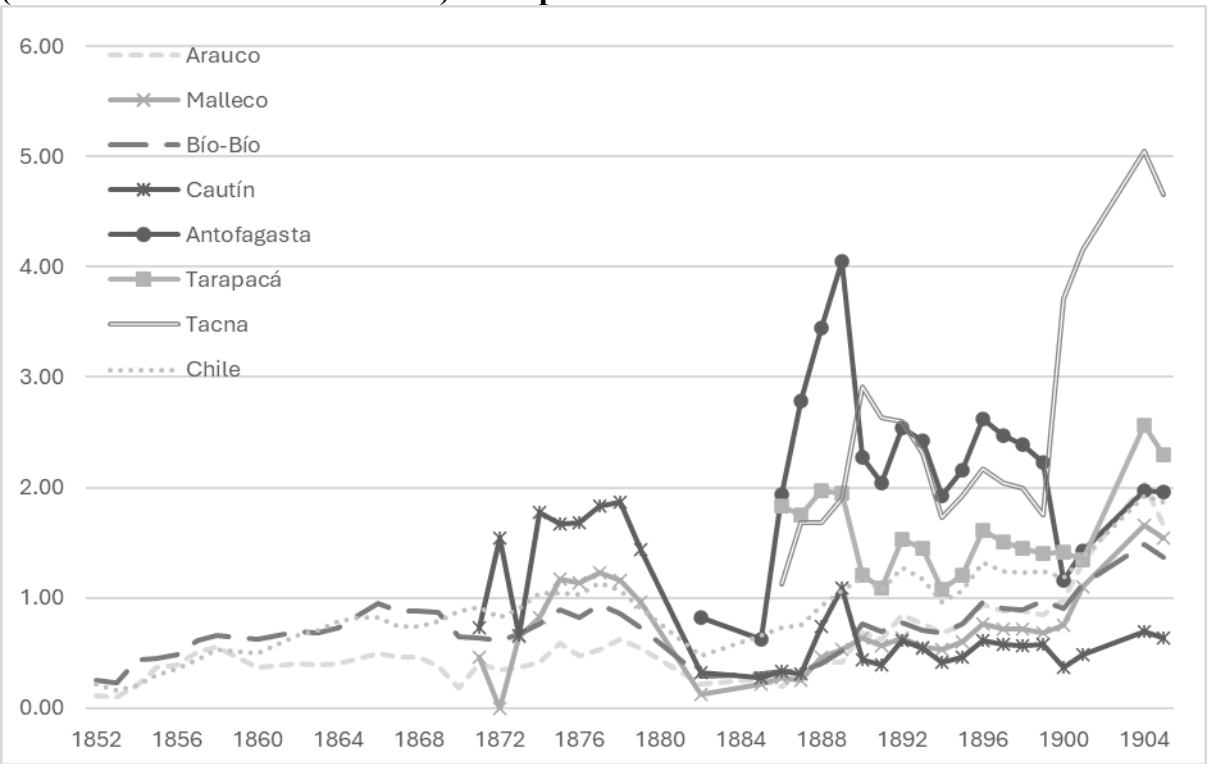
Source: Own elaboration. *Census* and *Statistical Yearbooks* (various years).

Given our previous results, we turn our attention to some representative cases. The study of those territories that were fully incorporated from the early 1880s shows contrasting patterns (Figure 4). Both the Araucanía and the New Northern Territories experienced higher than average levels of investment after incorporation and consolidation. However, in the case of the Araucanía provinces, the initial increase that took place during the 1870s was not followed by a substantial investment thereafter.[114] By contrast, spending levels in the northern territories remained systematically above the national average. The case of Tacna stands out particularly. After 1900, the *province* of Tacna was receiving by far the highest levels of investment (discounting Magallanes) in the country. This is consistent with the state-mandated *chilenisation* of the local population through public education in the build-up to the referendum

[114] An expansion of private education, namely missionary schools also took place during the 1870s. See Sol Serrano, '¿Quién quiere la educación? Estado y Familia en Chile a mediados del siglo XIX', in Pilar Gonzalbo (coor.), *Familia y educación en Iberoamérica* (México, 1999), pp. 153-72.

on sovereignty.[115] It is in this context that the last vestiges of the Peruvian education infrastructure were removed by the Chilean government in 1900.[116]

Figure 4. Government Investment in Primary Education per school-age population (Araucanía and New Territories). 1878 pesos.



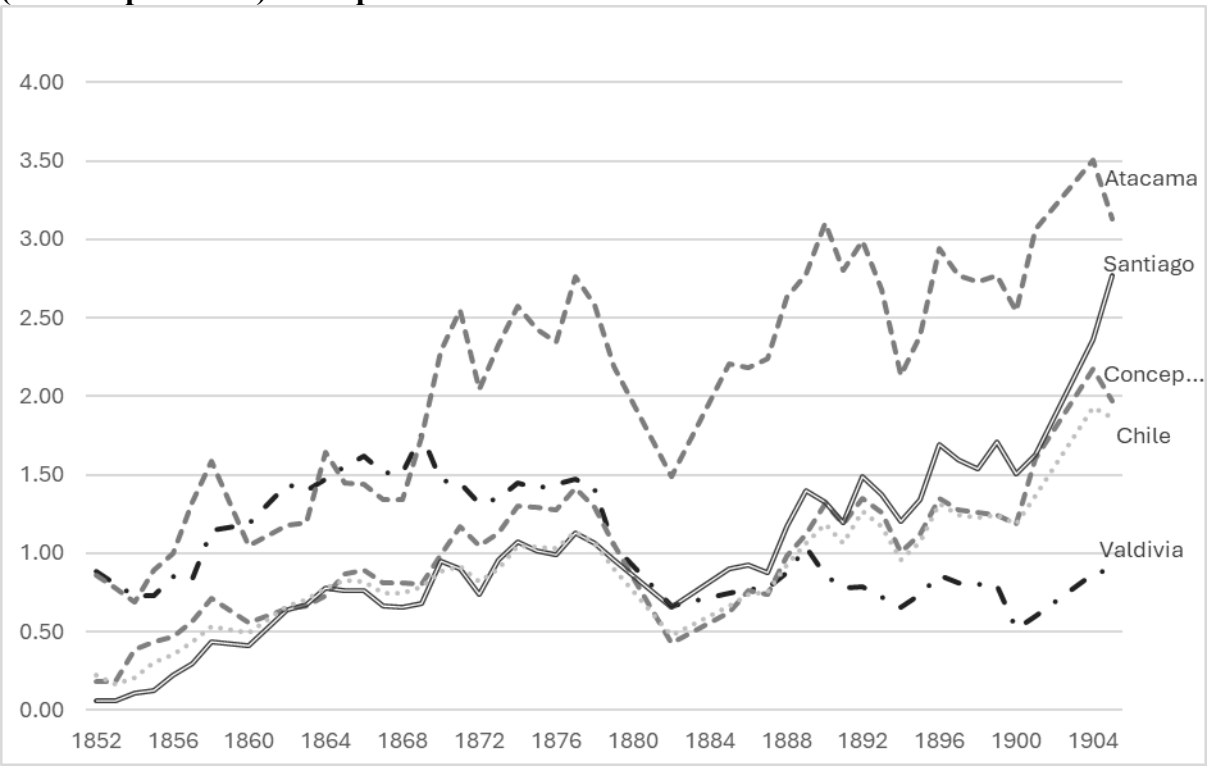
Source: Own elaboration. Spending levels taken from Budget Laws (various years). Population figures from Census data (various years).

These divergent patters are also evident when the study focuses on some of the most important Chilean regions in political terms (Figure 5). The Atacama province, having already experienced elevated investment levels during the first two decades of our period under scrutiny, witnesses much higher growth than the other traditional provinces during the 1870s. Likewise, a significant rise took place in the years after the War of the Pacific. By contrast, the southern province of Valdivia experienced stagnation and relative decline over the same period. Santiago's presence as one of the best-funded *departamentos* in 1905 represents a significant reversal from the start of the period. Indeed, aside from Puchacay (Concepción), Valparaíso and Santiago were the *departamentos* that received the lowest level of central government

[115] Tamborinoa and Guizardi, 'Las fronteras de la modernidad'.
[116] The referendum never took place and the *departamento* of Tacna was eventually returned to Peru in 1929. For further detail, see Tamborino and Guizardi, 'Las fronteras de la modernidad'.

investment in primary education in the whole country in 1855 (see Appendix 2 for full data tables).

Figure 5. Government Investment in Primary Education per school-age population (selected provinces). 1878 pesos.



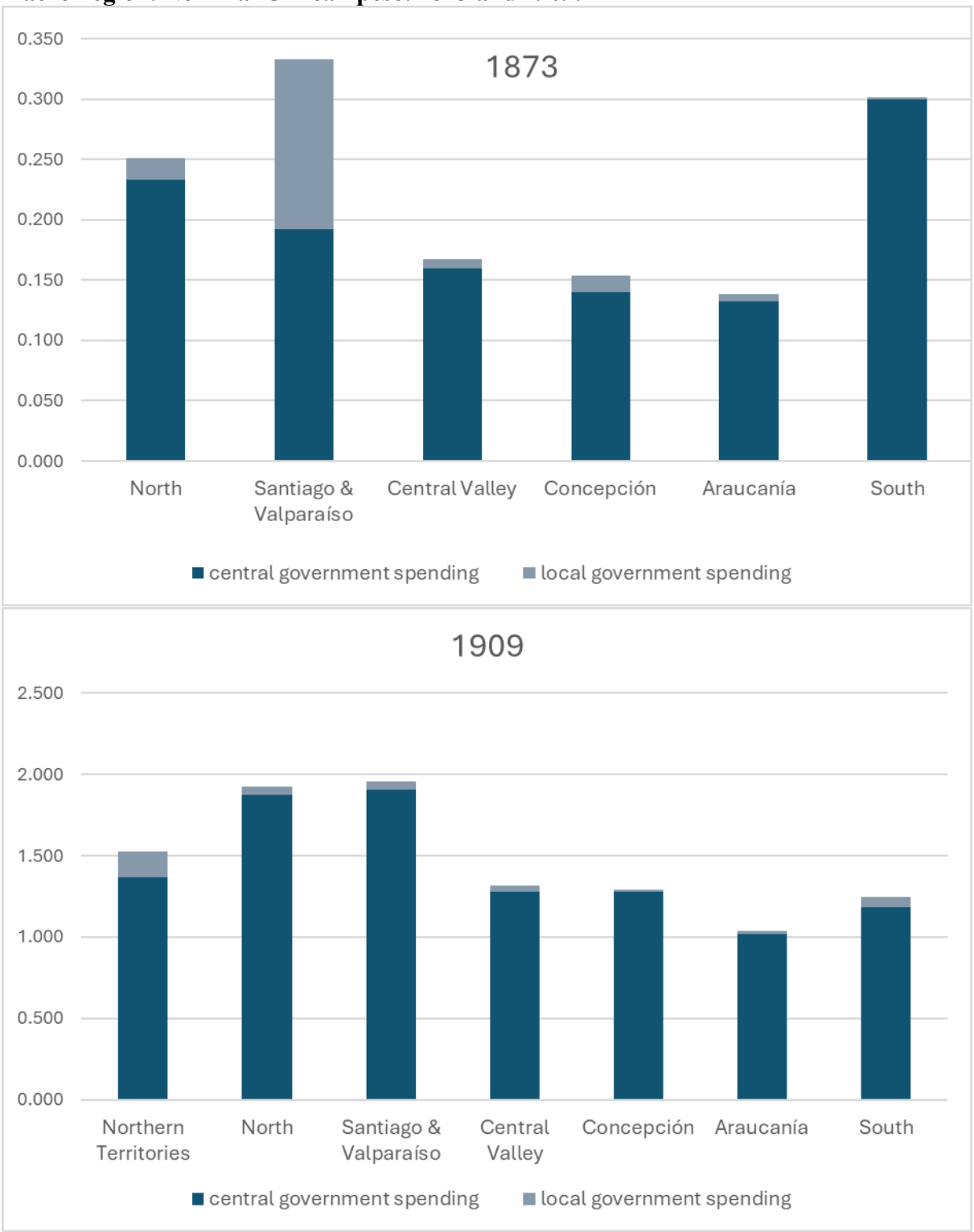
Source: Own elaboration. Spending levels taken from Budget Laws (various years). Population figures from Census data (various years).

The initial low levels of investment in Santiago and Valparaíso can be firstly explained by changes in the relative importance of local investment in public education (Figure 6). In 1873, local-level spending significantly bolstered the total level of investment in Valparaíso and Santiago, making it the *macro-region* with the highest total level of per capita public investment in primary education. The importance of local-level investment in education became largely insignificant for most regions by the end of our period, only really maintaining a degree of relevance in the New Northern Territories. In fact, total local expenditure went from 14% of total public investment in primary education in 1873 to only 3% in 1909.[117] This confirms that the state's increased fiscal power after the War of the Pacific accelerated the

[117] Figures based on Statistical Yearbooks and Budget Laws for the years in question. Central investment figures taken from 1905 due to unavailability of data for 1909.

process of education *centralisation*, allowing the state to impose a *national project* across the territory under its authority.

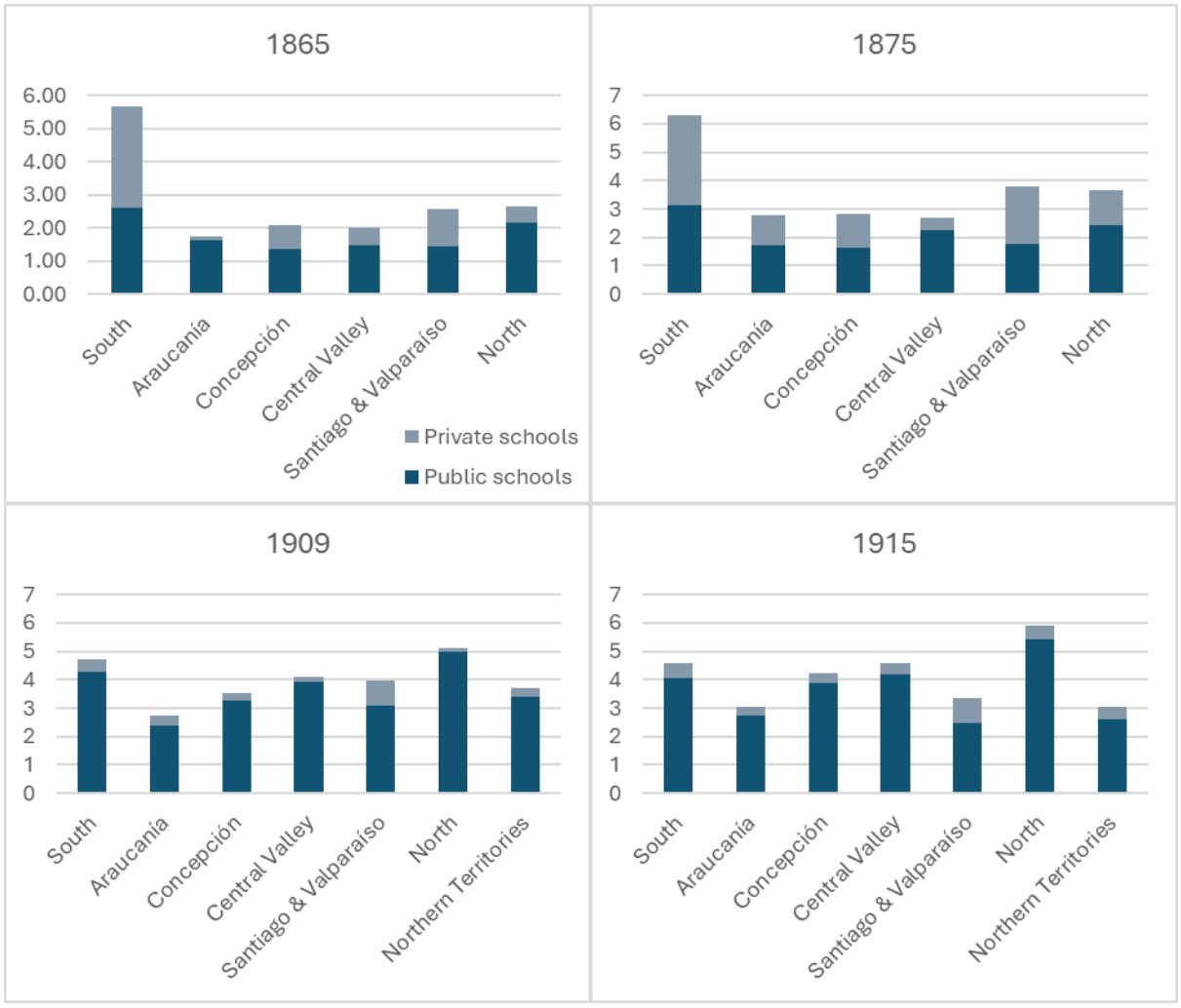
Figure 6. Central and local government investment in primary education (per capita), by macro-region. Nominal Chilean peso. 1873 and 1909.



Source: Own elaboration. Central government spending levels taken from Budget Laws (various years). Local public investment levels taken from Statistical Yearbook (various years).

The prevalence of private education in Santiago and Valparaíso also helps to explain the relatively low government investment in the area before the War of the Pacific. In fact, these regions, along with the *South*, were the only parts of the country where most schools were privately funded (Figure 7). Subsequently, a clear reduction in the relative importance of private schools took place across all Chilean *macro-regions*. Thus, at the turn of the twentieth century, both *centralisation* and *nationalisation* had reduced the relevance of local-level investment and private education, which implies that educational differences were mostly driven by *central* public investment.

Figure 7. Public and private schools (per 1000 school-age children), by macro-region. 1865-1915.



Source: Own elaboration. *Census* and *Statistical Yearbooks* (various years).
Notes: The group "Santiago & Valparaíso", unlike in the previous central government investment data, here refers to both provinces in their entirety. This is due to the unavailability of data at the departmental level for all time periods.

5. Understanding the regional differences in public education support

This section aims at explaining the heterogenous evolution of primary education expenditure at the regional level. To this end, it starts from the idea that investment in primary education and tax collection are effective indicators for understanding elites' preferences in state building.[118] As to the former, we have seen that the relative importance of central government spending over that of local governments increased notably across the period under study. This centralisation is also evident when we look at *total education* spending. While expenditure made by local governments accounted for 6% of total central government

[118] See the discussion in Kenneth L. Sokoloff and Eric M. Zolt, 'Inequality and Taxation: Evidence from the Americas on How Inequality May Influence Tax Institutions', *Tax Law Review* 59 (2005), pp. 167-241.

education expenditure during the 1870s, the ratio decreased to less than 1% at the beginning of the twentieth century. The same process took place in the case of taxes: local revenues as a share of central government revenues fell from a ratio of 20-25% before the War of the Pacific to an average of 8% during the first decade of the twentieth century.[119]

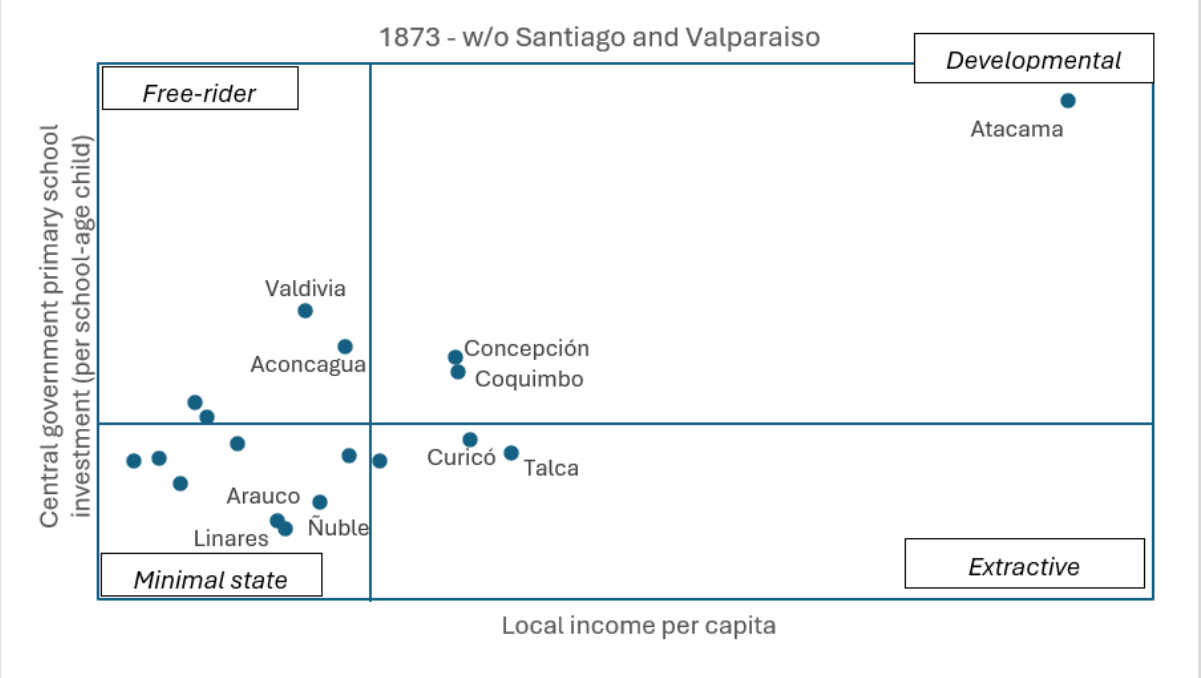
These trends could indicate that changes in the regional distribution of education expenditure were mostly driven by preferences of Chilean central elites. However, at least two factors appear to contradict this idea. On the one hand, recent research by Véjares on other forms of government spending suggest that the expansion of the Chilean state should be understood as the result of a bargaining process between central and local elites.[120] On the other hand, despite the consolidation of central over local revenues, the decentralisation of direct taxes that took place during the 1890s increased the political say that local elites had in the configuration of this revenue source.[121]

For these reasons, we propose that the contrast between central government expenditures on primary education and local taxes can help us to identify differing political economy arrangements between central and local elites. We assume that the former variable reflects the strategic interest that the central government had in the expansion of education services in each province, while the latter reflects the interest, or lack thereof, of local elites towards the expansion of the state. Following Frankema,[122] we propose the existence of four potential political economy scenarios. The first one refers to a *Minimal state*, characterized by low local taxation levels and low investment in primary education. The second, we call *Extractive*, since it presents a lack of correspondence between high local taxation levels and low investment in primary education by the central government. The third is defined as *Developmental*, given high taxation levels correspond to high levels of primary education investment. The last one relates to a *Free-rider* scenario in which low local taxation levels contrast with high investments in primary education by the central government.[123]

[119] Sabaté and Peres-Cajías, 'The War of the Pacific and Chilean public revenues', Appendix D.
[120] Véjares, 'Varieties of State-Building'
[121] Sabaté and Peres-Cajías, 'The War of the Pacific and Chilean public revenues'
[122] Ewout Frankema, 'Colonial taxation and government spending in British Africa, 1880-1940: Maximizing revenue or minimizing effort?', *Explorations in Economic History*, Vol. 48 (1) (2011), pp. 136-49.
[123] The analysis does not consider the cases of Santiago and Valparaíso given that we are interested in the relationship between central and local elites. Thus, in the following graphs the quadrants are determined by the average value of both local taxation and central government expenditures in primary education for all Chilean provinces, excluding Santiago and Valparaíso.

Our analysis is restricted by the availability of reliable local taxation data in only three different years: 1873, 1878 and 1908. The study of the first of these reflects the particular interest of the central government in the expansion of primary education services both in the Norh (Atacama and Coquimbo) and in the South (Concepción and Valdivia) (Figure 8). This could be driven by the interest of central elites to stave off the threat of further rebellion after the 1859 civil war.[124] In the case of Concepción, there may have been additional interest derived from its strategic importance as a frontier region with the Araucanía, which was being gradually subjugated by the Chilean military during the 1860s and 1870s. This could also apply to Valdivia, a region that shared its northern border with the Araucanía region. By contrast, the lower levels of investment in the Central Valley provinces could be determined by the control that landholders had in this region and their patrimonial cooperation with central elites.[125]

Figure 8. Income and investment in education. Provincial equilibriums. 1873



Source: Own elaboration. Local income figures taken from Statistical Yearbook 1874, Investment figures from Budget Law 1873. School-age population figures taken from 1875 Census.

Beyond the distribution of central government education expenditures, the plot (Figure 8) also reveals noticeable heterogeneity in local taxation levels. Part of these differences were in great manner determined by differences in tax bases. For instance, taxation was easier in the

[124] Paglayan, 'Education or Indoctrination?'
[125] Véjares, 'Varieties of State-Building'

mining economy of Atacama than in the agricultural one of Valdivia. However, differences in taxation levels could also reflect differences in elites' preferences towards the expansion of the state. In the case of education, either for economic (the need of skilled labourers) or political (pressure from mining workers) reasons, mining elites may have been more interested in the expansion of education than agricultural elites. In fact, previous research suggests that landowners in the Central Valley did not support the expansion of education services.[126] In line with these ideas, local investment in primary education was far more significant in regions like Atacama than in most provinces, with Talca providing an interesting exception (Table 1).

Table 1. Local revenues (per capita) and local public investment in primary education (per school-age child), by province. 1878 pesos.

Province	1873			1878			1909		
	Total local revenues	Local investment in primary education	Relative importance of local invements in primary education to total public invesment in primary education (%)	Total local revenues	Local investment in primary education	Relative importance of local invements in primary education to total public invesment in primary education (%)	Total local revenues	Local investment in primary education	Relative importance of local invements in primary education to total public invesment in primary education (%)
Tacna							2.23	0.03	1%
Tarapacá							2.17	0.23	13%
Antofagasta							1.72	0.23	15%
Atacama	1.47	0.21	8%	1.53	1.054	29%	0.85	0.06	3%
Coquimbo	0.55	0.07	6%	0.54	0.086	6%	0.53	0.04	3%
Aconcagua	0.38	0.03	2%	0.43	0.004	0%	0.65	0.03	2%
Valparaíso	3.87	0.54	31%	3.55	0.727	35%	1.90	0.07	4%
Santiago	4.55	0.52	35%	9.80	0.290	21%	3.03	0.04	2%
O'Higgins	0.12	0.00	0%	0.12	0.000	0%	0.65	0.01	1%
Colchagua	0.15	0.00	0%	0.18	0.008	1%	0.45	0.04	4%
Curicó	0.56	0.06	7%	0.44	0.067	7%	0.48	0.03	3%
Talca	0.63	0.13	16%	0.60	0.142	16%	0.68	0.06	5%
Maule	0.21	0.04	5%	0.25	0.054	7%	0.28	0.00	0%
Linares	0.28	0.07	18%	0.22	0.063	15%	0.37	0.02	2%
Ñuble	0.34	0.09	16%	0.38	0.096	17%	0.37	0.02	2%
Concepción	0.54	0.05	5%	0.57	0.115	8%	0.35	0.00	0%
Arauco	0.27	0.00	1%	0.36	0.053	8%	0.33	0.02	2%
Bio Bio	0.38	0.05	7%	0.30	0.078	10%	0.31	0.01	1%
Malleco	0.43	0.00	0%	0.33	0.081	7%	0.47	0.01	1%

[126] Serrano, '¿Quién quiere la educación?'

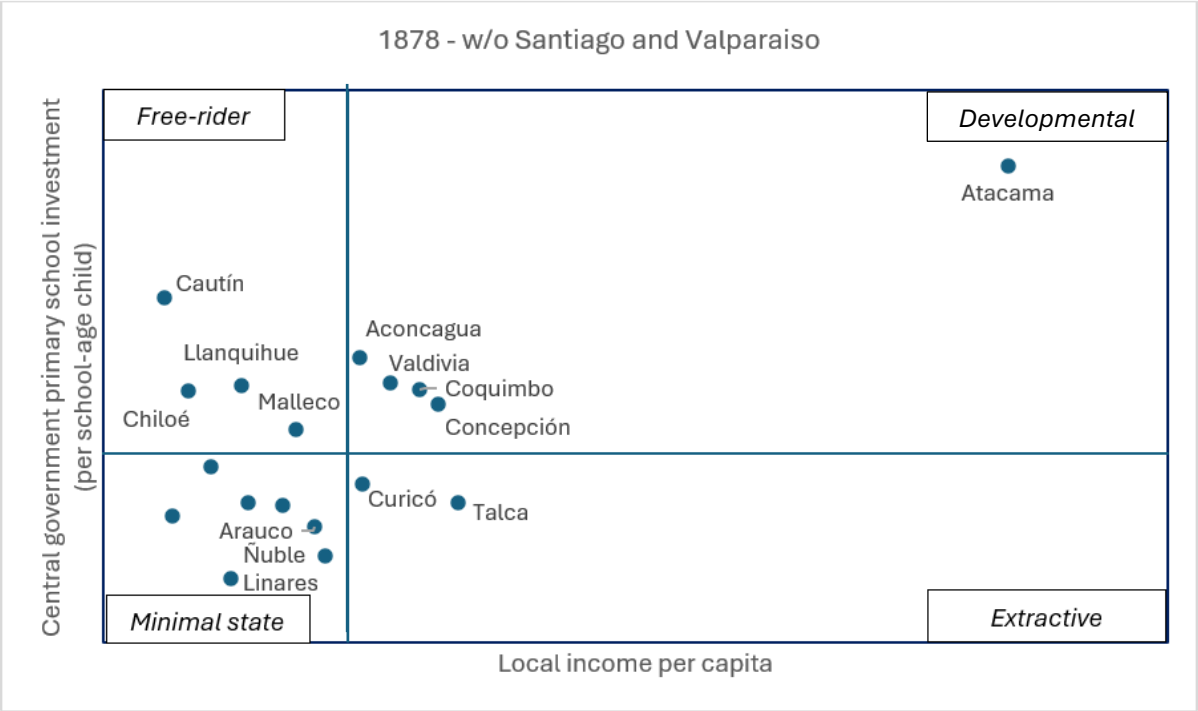
Cautín	0.09	0.00	0%	0.10	0.000	0%	0.25	0.01	3%
Valdivia	0.31	0.00	0%	0.48	0.000	0%	0.29	0.01	1%
Llanquihue	0.16	0.01	1%	0.23	0.007	0%	0.28	0.05	5%
Chiloé	0.05	0.00	0%	0.14	0.013	1%	0.05	0.00	0%
Magallanes							5.55	1.15	24%
Chile	**1.21**	**0.14**	**14%**	**1.93**	**0.164**	**13%**	**1.11**	**0.04**	**3%**

Source: Own elaboration. Figures taken from Statistical yearbooks (various years) and Budget Laws (various years). Populations figures taken from Census (various years).

This heterogeneity in also visible in 1878 (Figure 9). Together with the regions that already presented higher levels of primary education investments in 1873, different provinces located in the South of the country (Malleco, Cautín, Llanquihué and Chiloé) obtained higher levels of investment from the central government. Except for Malleco, local investment in education in these regions was negligible (Table 1). This contrast would suggest that the sudden increase in education expenditures was rather the result of a renewed interest of central elites in these provinces. In fact, the 1870s were a time of increased tension between Chile and Argentina over the disputed Patagonian border.[127] Thus, the perceived threat of invasion[128] lent the southern regions renewed importance to the national consolidation project.[129] Moreover, increased investment in the newly incorporated regions of Malleco and Cautín were determined by *chilenising* policies of the indigenous population through public education.[130]

[127] Mateo Martinic Beros, *Presencia de Chile en la Patagonia Austral: 1843-1879* (Santiago de Chile, 1971)
[128] Cameron Thies, 'War, Rivalry and State Building in Latin America', *American Journal of Political Science*, Vol. 49, No. 3 (2005), pp. 451-65.
[129] Núñez et al., *Fronteras en Movimiento e Imaginarios Geográficos*.
[130] Serrano, 'De Escuelas Indígenas sin pueblos a pueblos sin Escuelas Indígenas; Pinto, *La formación del Estado y la nación, y el pueblo mapuche*.

Figure 9. Income and investment in education. Provincial equilibriums. 1878

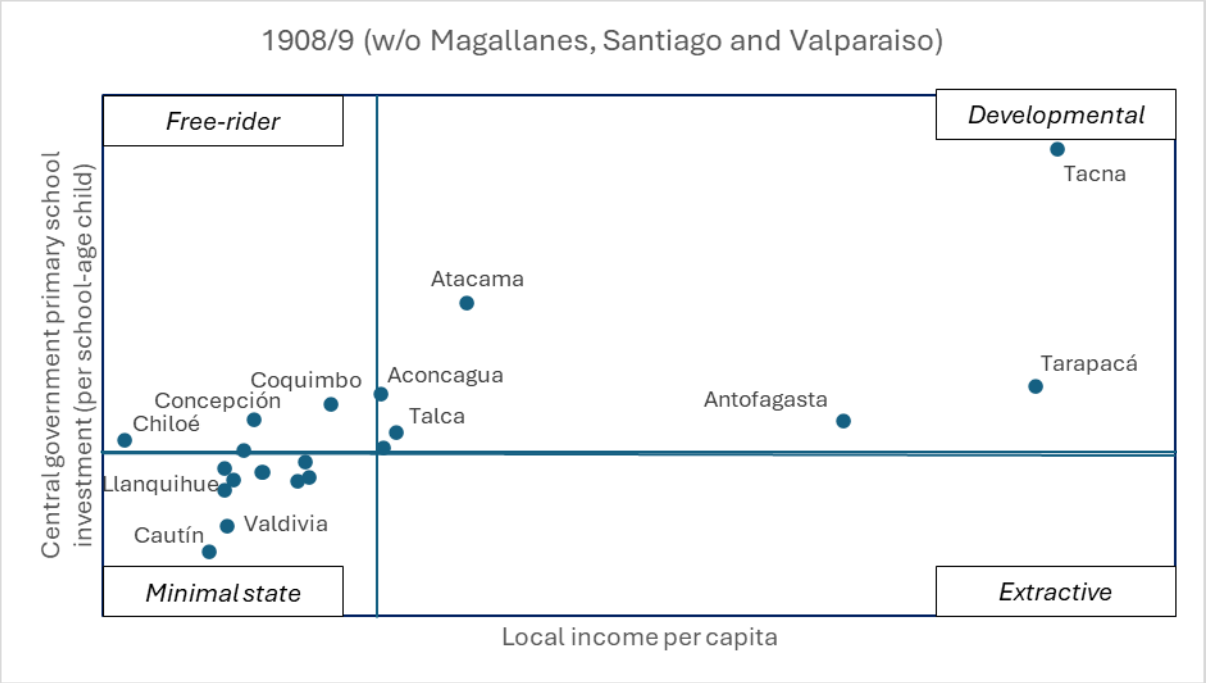


Source: Own elaboration. Local income figures taken from Statistical Yearbook 1879, investment figures from Budget Law 1878. School-age population figures taken from 1875 Census.

The Atacama region represents another interesting case in 1878. Despite taxation levels remaining virtually unchanged between 1873 and 1878, there was a significant increase in *local* investment in primary education. It could be argued that this change was exclusive to this period. However, Atacama's high overall funding levels continue into the twentieth century (Figure 10). Beyond the strategic relevance that this region could have for central elites, workers collectives consolidated during this period in the region,[131] with public education among the stated demands of striking workers in 1890.[132] This highlights, once again, the relevance of local demand for education in our study.

[131] Jocelyn-Holt Letelier, 'La crisis de 1891'
[132] Reyes Navarro, 'Los trabajadores del área salitrera, la huelga general de 1890 y Balmaceda'

Figure 10. Income and investment in education. Provincial equilibriums. 1908.



Source: Own elaboration. Local income figures taken from Statistical Yearbook 1909, investment figures from Budget Law 1905. School-age population figures taken from 1907 Census. Magallanes is not included as income levels, in part due to reduced population, distort scatter plot.

Beyond the continuity of Atacama, the presence of all the new regions annexed after the War of the Pacific in the developmental quadrant is striking. This region was home to nitrates mines, the most important Chilean export and the most relevant revenue source for the central government (two thirds of total revenues).[133] From a political point of view, Chilean central elites also had the incentive to *chilenise* the new territories through education expenditure. Notwithstanding, whereas above-average investment levels were evident in both Antofagasta and Tarapacá immediately following their incorporation, in the case of Tacna they were consolidated in 1905. At the beginning of the twentieth century, this province displayed elements of geographical periphery,[134] contested border, and perceived external threat to national sovereignty,[135] all of which hint at its potential importance to Chile's nation-building project. The particularities of Tacna are also evident when looking at local revenues and expenditures: while its taxation levels were similar to those of Tarapacá and Antofagasta, local investment in primary education was much lower than in the other provinces.

[133] Oriol Sabaté and José Peres-Cajías, 2025.
[134] Jan Pierskalla, Anna Schultz and Erik Wibbels, 'Order, Distance, and Local Development over the Long-Run', *Quarterly Journal of Political Science*, 12 (4) (2017), pp. 375-404
[135] Thies, 'War, Rivalry and State Building in Latin America'; Gibler and Miller, 'External territorial threat, state capacity, and civil war'.

In contrast, by 1908, Valdivia and Llanquihue were confined to the *Minimal state* group, where they joined the majority of Araucanian and Central Valley provinces. This signifies a shift from their situation during the 1870s, which could be explained by the region lacking any post-war strategic threat to Chilean central elites. However, it could also be the consequence of lower demand for public education services by local elites. As we demonstrated in the previous section, the relative importance of private education was particularly high in the South of the country during the 1860s and 1870s and local public investment in primary education was consistently lower than in most other Chilean provinces.

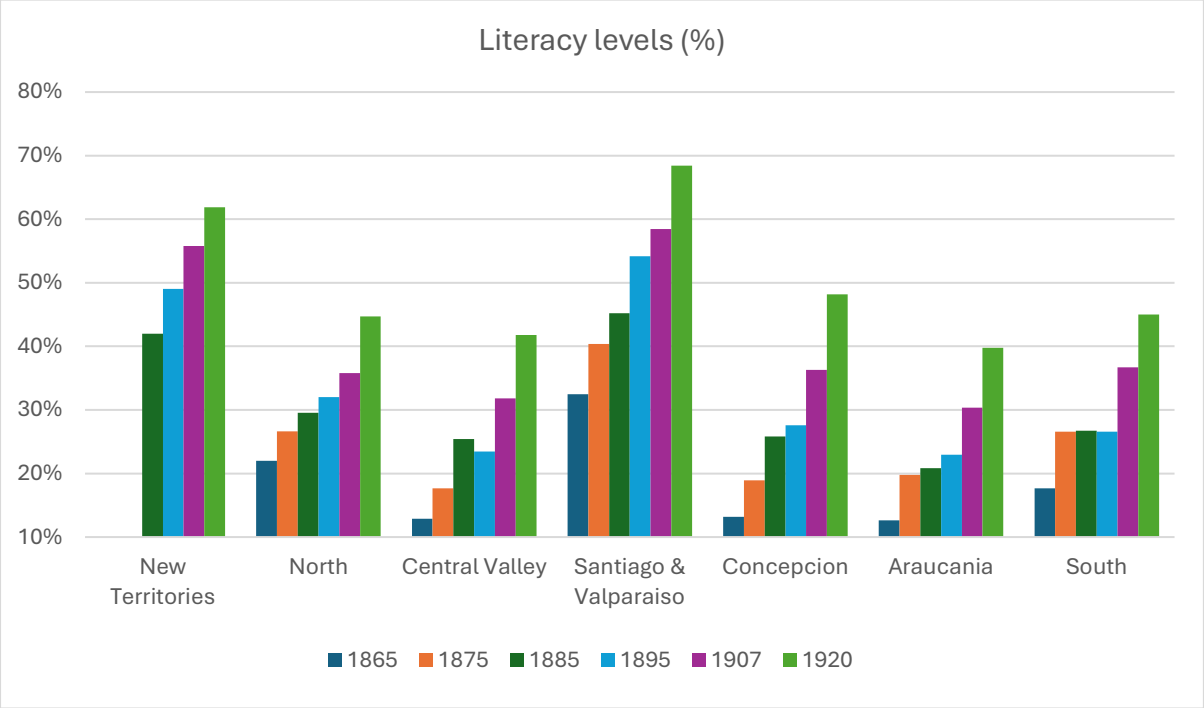
6. Human capital accumulation at the regional level

The stated aim of the Chilean educational reforms during the second half of the nineteenth century was to "*universalize schooling*".[136] However, as we showed in Section 4, the expansion of public primary education after the 1860 reforms in terms of investment was unequally distributed across the country. Following recent studies that have pointed to the long-term and wide-reaching consequences of unequal regional public education provision,[137] this section offers a first assessment on the medium-term effects of the uneven public provision on literacy levels.

Looking at Chilean *macro-regions,* a clear correspondence between public expenditure patterns and literacy levels emerges. The higher literacy levels were found in Santiago and Valparaíso. The second most literate region was the North, a place where public investment in primary education was also important. By contrast, literacy levels tended to be lower in the Central Valley region, the Araucanía and the South, regions that also lagged in terms of public investment in primary education. Moreover, the relative order of *macro-regions* in terms of literacy levels remained stable. In this process, the stagnation of literacy levels in the Araucanía and the South between 1875 and 1895 stands out, with the same phenomenon occurring in the Central Valley between 1885 and 1895.

[136] Ponce de León, 'La llegada de la escuela y la llegada a la escuela', p. 450
[137] See, for instance, Chris Taylor, 'Towards a geography of education', *Oxford Review of Education*, Vol. 35, No. 5 (2009), pp. 651-669.

Figure 11. Literacy levels by "macro-regions". 1865-1920.



Source: Censo General (various years).

The case of Concepción represents an exception to the before mentioned correlation. Whereas this region received higher levels of public investment, literacy levels were among the lowest. This is in part explained by the wider heterogeneity that also existed within regions, as the information on provinces clearly shows (Table 2). Nevertheless, this information confirms the lack of convergence in literacy levels between Chilean regions. For instance, both the coefficient of variation and the max/min ratio stress that the gap in educational outputs between provinces was growing at the turn of the century: in 1907, the gap between the provinces with the highest and lowest literacy rate was 42%, far greater than the 19% difference between Atacama and Maule in 1865. This consolidated heterogeneity helps to understand the frustration that Chilean ministers felt in the advancement of mass education at the start of the twentieth century.[138]

[138] See Ponce de León, 'La llegada de la escuela y la llegada a la escuela', p. 451.

Table 2. Literacy rates, by province. % of total population.

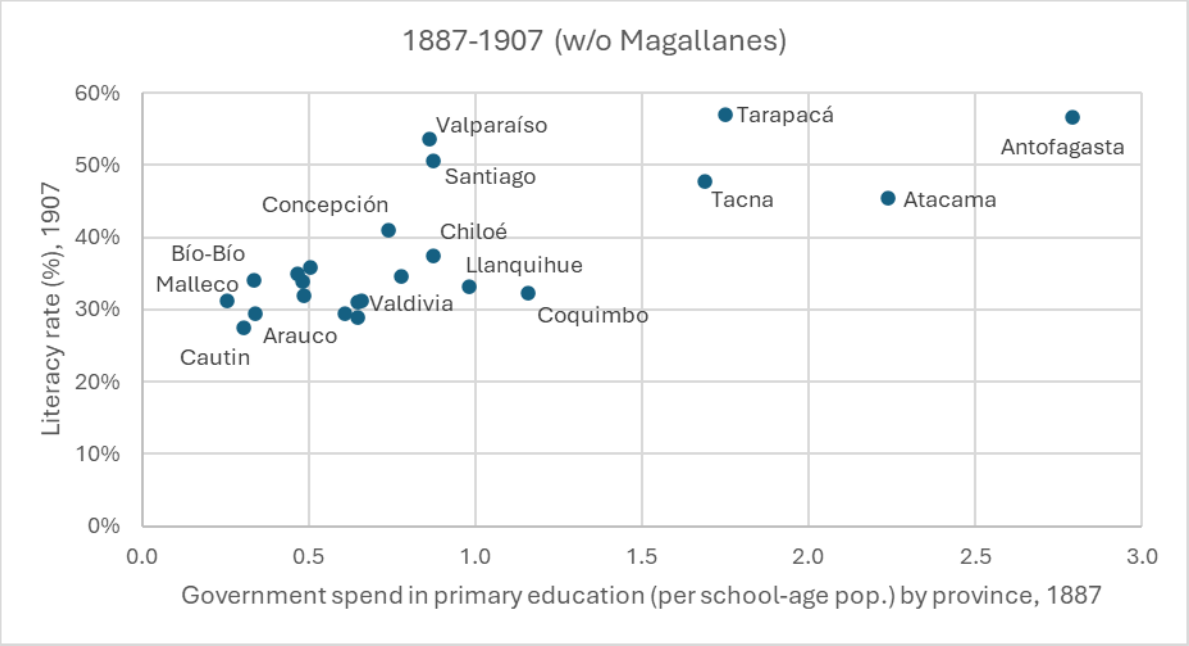
		1865	1875	1885	1895	1907	1920
	Province	Literacy rate					
New Territories	Tacna			39%		48%	60%
	Tarapacá			41%	48%	57%	64%
	Antofagasta			46%	51%	57%	61%
North	Atacama	29%	36%	39%	44%	46%	56%
	Coquimbo	18%	22%	26%	28%	32%	41%
Santiago & Valparaíso	Valparaíso	24%	34%	41%	44%	54%	64%
	Santiago	22%	33%	36%	45%	51%	62%
Central Valley	Aconcagua	13%	18%	26%	25%	32%	41%
	O'Higgins	11%	17%	24%	12%	29%	42%
	Colchagua	13%	17%	26%	25%	31%	39%
	Curicó	13%	17%	26%	27%	31%	41%
	Talca	14%	17%	27%	28%	35%	45%
Concepción	Maule	10%	15%	19%	19%	29%	48%
	Linares	13%	21%	26%	25%	34%	47%
	Ñuble	14%	19%	26%	30%	36%	44%
	Concepción	15%	21%	30%	33%	41%	52%
Araucanía	Arauco	11%	16%	21%	25%	29%	37%
	Bío-Bío	13%	23%	24%	26%	34%	40%
	Angol/Malleco		21%	21%	27%	31%	40%
	Cautín		5%	4%	19%	27%	41%
South	Valdivia	17%	29%	25%	21%	35%	41%
	Llanquihue	18%	25%	24%	28%	33%	44%
	Chiloé	18%	27%	29%	29%	37%	49%
	Magallanes		31%	53%	49%	69%	60%
Chile		**17%**	**23%**	**29%**	**32%**	**40%**	**50%**
Coefficient of Variation (*provincia*)		**3.18**	**3.06**	**2.83**	**2.85**	**3.50**	**5.32**
Coefficient of Variation (*departamento*)		**2.50**	**2.85**	**3.11**	**2.64**	**3.50**	**4.48**
Dif_Max_Min (*provincia*)		**0.19**	**0.30**	**0.50**	**0.39**	**0.42**	**0.27**
Dif_Max_Min (*departamento)*		**0.25**	**0.39**	**0.50**	**0.48**	**0.48**	**0.45**

Source: Censo General (various years).

We have also attempted to study the correlation between public investment in education and literacy levels at the province level, using a 20-year lag. In general terms, we find a positive correlation, best exemplified by the 1887-1907 period (Figure 12). The high investment levels in the Atacama throughout the period appear to keep literacy levels above national average levels well into the twentieth century, although it was overtaken as the leading province after the War of the Pacific by the capital-port axis, Santiago and Valparaíso. Joining the duo at the top of pile were the northern territories annexed during the War of the Pacific, along with

Magallanes in the south, all of whom experienced higher than average levels of investment in the post-war period. Tacna, incidentally on the cusp of a return to Peru, experienced a large increase in literacy rates between 1907 and 1920. On the other hand, Valdivia provides a good example of how changes in investment patterns can impact negatively upon literacy levels. This was the province with the highest levels of investment in education per capita in 1855 and amongst the regions with the highest literacy levels in 1875. By the end of the period, however, its relative position has regressed on both fronts, with low investment in the post-war period accompanied by some of the lowest literacy rates in 1920.

Figure 12. Government investment and literacy rates (20-year lags). 1887/1907



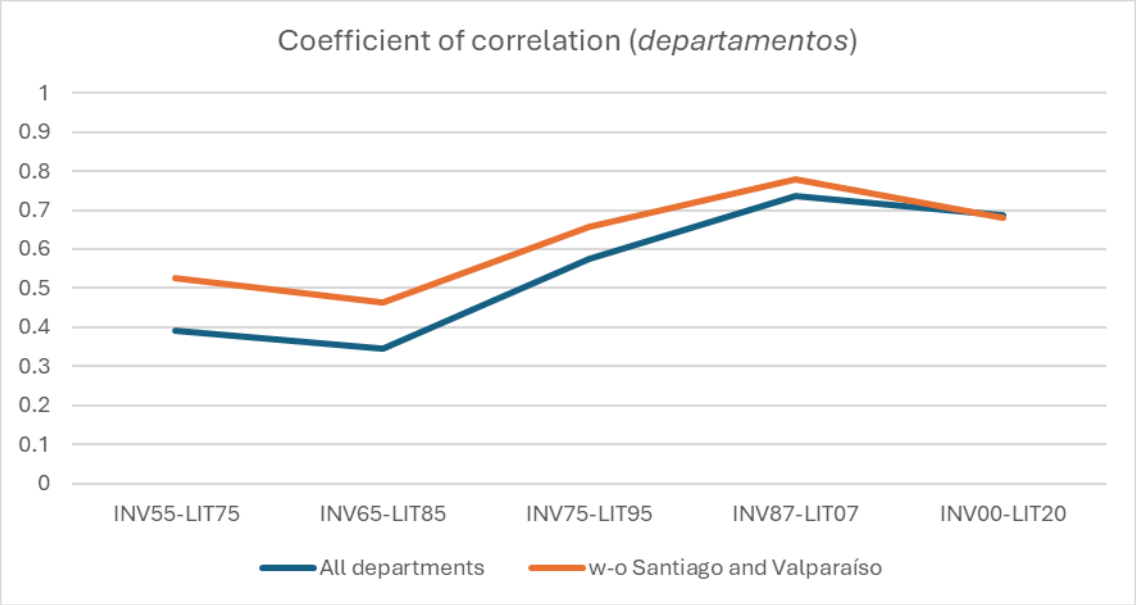
Source: Own elaboration. Literacy rates taken from Census ("*saber leer*") (various years) and investment levels taken from Budget Laws (various years).
Notes: The graph does not present the information on Magallanes given that is an outlier that affects graph visualisation.

In any case, the correlation between both variables is not stable across time (Figure 13). This recalls that, beyond public investment in education, other variables are also important determinants of literacy level. For instance, occupational structure and other economic factors clearly play a role in determining literacy levels. Similarly, local investment in education has been found to impact heavily upon literacy rates.[139] This is consistent with the high outcome levels observed in Santiago, Valparaíso, Atacama, and the New Territories, all of which

[139] David F. Mitch, The Rise of Popular Literacy in Victorian England. The Influence of Private Choice and Public Policy (Philadelphia, PA: University of Pennsylvania Press, 1992).

contributed significantly to educational investment through local spending at various points of the period.

Figure 13. Coefficient of correlation between central government investment in primary education and literacy rates (20-year lag).



Source: Own elaboration.

The role of migration should be also considered. On the one hand, literacy levels in the territories annexed after the War of the Pacific were already among the highest in 1885, due to the profile of population that migrated to the region. On the other hand, previous research shows that the study of foreign migrant flows is crucial to understand regional differences in human capital accumulation in Chile during the period under study.[140] Additionally, the merits of education policy at the regional level should also be evaluated by looking at other potential long-term educational outputs such as attendance or years of schooling. Thus, more research is still necessary to identify how differences in public investment in education *caused* long-term regional differences in human capital formation. This open question does not alter the main conclusion of this article: the distribution of education investments in Chile was substantially heterogenous at the regional level following different war events.

[140] Felipe González, 'Immigration and human capital: consequences of a nineteenth century settlement policy', in *Cliometrica*, Vol. 14 (2019), pp. 443-477.

7. Conclusions

It has generally been asserted that, while external conflicts tend to have a positive impact on the expansion of state capacity, internal conflicts are damaging to their development, weakening the autonomous power of the state and undermining its *monopoly of violence*.[141] Gibler and Miller, however, put forward the case that regions under threat of violence (whether that be external attack or internal rebellion) experience an increase in the capacity of the state to *"co-opt the average citizen"*.[142] Similarly, Paglayan argues that the expansion of mass education emerged in response to the internal threat of rebellion against the ruling regime.[143]

In the case of Chile, previous literature has shown that investment in primary education increased after the 1859 civil war and the Educational Reforms passed the following year, and again more substantially after the War of the Pacific. Our findings show that, the location of these investments varied according to regional strategic importance. We observe higher investment levels in the geographical extremes, both North and South. This suggests that education was used as a tool of border consolidation in these regions, with the aim of instilling a strong national sentiment in peripheral regions under possible threat of external invasion.[144] The extremely high levels of investment in Tacna and Magallanes, in the context of their contested sovereignty, appear to solidify this claim.[145]

We also find that, in line with the stated aims of the educational reforms, the Chilean education system went through a process of centralisation and nationalisation during the second half of the nineteenth century. The relative weight of local government investment declined and there was a marked reduction in the ratio of private to public schools. This had a particularly significant effect on Santiago and Valparaíso, where local funding and private schools had played a key role in educational provision before the expansion. However, we also find evidence indicating that, in some cases, the drive for education at the regional level was also conditional on local demand, in turn determined by local elite composition and bargaining power. The contrasting cases of Atacama and Valdivia are, in this context, especially

[141] Based on Weber's famous notion of the state. See Max Weber, 'Politics as a Vocation', in Max Weber, *Essays in Sociology* (New York: Oxford University Press 1946), p. 78
[142] Gibler and Miller 'External territorial threat, state capacity, and civil war', p. 639.
[143] Paglayan 'The Non-Democratic Roots of Mass Education'
[144] Pierskalla et al., 'Order, Distance, and Local Development over the Long-Run'.
[145] For the case of Magallanes, see Martinic Beros, 'Magallanes: la perifèria austral en la consolidación republicano'; For Tacna, Tamborino and Guizardi, 'Las fronteras de la modernidad'.

instructive, as are the differing models of educational expansion observed in the Araucanía and the Northern Territories of Antofagasta and Tarapacá.

The uneven spread of educational provision across the country in the second half of the nineteenth century had pronounced implications for regional human capital accumulation. Literacy rates stagnated in the areas of the country with reduced funding, namely the Central Valley, the South and the Araucanía, while the developmental regions of Santiago, Valparaíso and the Northern Territories, enjoyed a virtuous cycle of educational development. The result was a widening of the gap in literacy rates between those at the top and bottom of the scale, contributing to the long-term regional inequality experienced by Chile throughout its history.