

The Expansion of Public Spending and Mass Education in Bolivia: Did the 1952 Revolution Represent a Permanent Shock?

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1 Introduction

Being one of the most unequal regions in the world (De Ferranti et al. 2004), inequality has a central role in the explanation of Latin American long-term development. A widespread view suggests that the current high levels of inequality are not anything new but one of the most salient features in the region since colonial times (Acemoglu et al. 2002; Engerman and Sokoloff 2012). According to this literature, Latin American countries inherited very unequal societies in terms of wealth, political power, and human capital at the time of their independence. Furthermore, it is argued that, given this initial level of inequality, the new Latin American states became rapidly controlled by small elites that did not have any interest in tax collection (Sokoloff and Zolt 2006) (since this would imply taxing themselves) or education spending (Engerman et al. 2009) (which would involve a redistribution of resources). By assuming the existence of institutional path dependence, these authors finally suggest that a fiscal equilibrium with low taxation and low spending in education persisted in the region until very recent decades, with only minor changes.

This view has been challenged (i.e., Coatsworth 2008; Herranz-Loncán and Peres-Cajías 2016). Recently, Williamson (2015) has suggested that inequality has not been constant in Latin America and, therefore, the region has not always been the most unequal in the world. Indeed, he suggests that inequality rose dramatically in Latin American countries and converged towards the most unequal ones during the First Globalization. More importantly, whereas inequality was reduced in most parts of the world during the twentieth century (the “Great Leveling”), it increased or stayed constant in Latin America. Therefore, the current high levels of inequality would not be the result of Iberian colonial powers but the outcome of a more contemporaneous process.

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Whether a colonial legacy or a contemporaneous outcome, further research has proved that Latin American governments have had a relatively low interest in the promotion of public education during most of the twentieth century. For instance, Lindert (2010) indicates that, in contrast with developed economies, Latin American governments have invested in education less than what would be expected given its GDP per capita. Moreover, this author stresses that most public expenditure was devoted to tertiary education, restricting thus the redistributive impact of education spending. Likewise, Frankema (2009) points out that the higher priority of tertiary education also holds when the region is compared with other developing economies. He also affirms that, whereas Latin America has undertaken significant progress in terms of primary education enrollment, the region's achievements are not outstanding by international standards and are negatively affected by the absence of quality increases.

Taking into account these antecedents, this chapter aims at analyzing whether educational spending in Bolivia fits well into this regional description or, by contrast, changed radically and took distance from the regional pattern after the 1952 Revolution. The former hypothesis would seem a priori more likely, given that some of the main determinants of education spending expansion—such as economic growth or political voice (Lindert 2004; Espuelas 2012)—showed very bad records during several episodes after the revolution. For instance, following Brown and Hunter (2004)'s results, it would be expected that public spending in mass education was relatively low during the military dictatorships (1964–1982). Likewise, the low yearly long-term rate of Bolivian economic growth (below 1%) during the second half of the twentieth century would also restrict the expansion of mass education spending. In the same vein, on the basis of the economic literature which suggests a negative relationship between ethnic diversity and public spending,¹ or taking into account Dell's (2011) study for Peru, the Bolivian colonial legacy might be assumed to have restricted the expansion of education services towards the Bolivian indigenous population, a sector which constitutes a substantial share of total population—between 40 and 60%, according to the 2001 national census (INE 2001).²

Nevertheless, it is also critical to consider the relevance of social empowerment and its ability to change public policies. Indeed, according to Kosack (2012), political entrepreneurs may foster (whatever the political regime of a country) the political organization of the poor which, in turn, may force governments to invest massively in mass education. In this context, it cannot be ignored that the 1952 Revolution represented a considerable shock in Bolivian history (Grindle and Domingo 2003; Klein 2011a, b: 209–222). This shock, in turn, generated some radical redistributive policies which in some cases had long-term consequences. For instance, Fundación Tierra (2007) has suggested that the 1953 Agrarian Reform allowed the recovery and total expulsion of former white *terratenientes* in the west side of the country by the Aymara population—the most important indigenous

¹ See Go and Lindert (2010) for a historical test of this hypothesis.

² See the INE webpage for a description of the different indicators used for the identification of the Bolivian indigenous population.

group in that region. The 1952 Revolution also brought up an educational reform. In relation to this, previous work (Peres-Cajías 2014) has presented some evidence which suggests that these changes generated a substantial increase in social public spending (which includes education spending) from the 1950s onwards. In the same line, Klein (2011b) has stressed that these modifications in public policies are critical to understanding the continuous political empowerment achieved by the indigenous population during the second half of the twentieth century (Zavaleta Mercado 2011; Calderón 2010).³ Therefore, these ideas suggest that the long-term impact of the 1952 Revolution on public education spending is far from obvious.

On the basis of quantitative evidence previously presented (Peres-Cajías 2014), this chapter offers for the first time a long-term and comparative analysis of Bolivian public education spending.⁴ To begin with, following the framework proposed by Booth (2007) and Frankema (2011), the chapter shows that, after the 1952 Revolution, the Bolivian Central Government moved from a “minimal state” fiscal equilibrium to a “benign state” one, in which relatively low tax collection levels coexisted with non-negligible investments (by Latin American standards) in public education. However, looking at the evolution of education spending per capita, it becomes clear that this paradoxical fiscal equilibrium did not necessarily grant the sustainability of educational expenses. Furthermore, when controlling by per capita GDP, the evolution of public education spending in Bolivia does not stand out by international standards until recent decades, which is in contrast to the experience of other small Latin American countries. Likewise, following Lindert’s (2010) suggestions, this chapter shows that the postrevolutionary increase in education spending did not imply any significant change in the tax support given to primary education. By contrast, the relative importance of primary over tertiary education spending was not different from the rest of the region and, more strikingly, today is relatively low even by Latin American standards.

It could still be assumed that, despite these limitations, the increase in Bolivian education spending since the Revolution was enough to foster substantial modifications in educational outputs. Rather than measuring the profitability of public expenditure, the last section of the chapter addresses this issue by analyzing if the increase in education spending was contemporaneous of any significant change in several educational outputs. The analysis of the available “quantity indicators” seems to confirm the pessimistic assessment previously offered by other authors, such as Contreras (2003). Furthermore, in the case of “quality indicators,” Bolivia appears often in the lowest ranks of the region, which illustrates the limited impact of the public efforts in the educational area. Therefore, apart from its increase as a

³The most salient example of this progressive political empowerment is the arrival of Evo Morales to the Bolivian presidency in 2006. Additionally, previous researches have stressed that, during the last decades, and beyond the persistence of considerable inequalities, the Bolivian population has benefited from public education spending as an efficient instrument for social mobility (Andersen 2003; PNUD 2010: 58).

⁴Previous analyses on the impact of the 1952 Revolution have focused mostly on education outputs, such as literacy or enrollment rates (Contreras 1999, 2003).

share of the GDP, the chapter stresses that the 1952 Revolution does not seem to have fuelled any significant long-term differentiation of Bolivia from the rest of the region in terms of education spending and education outputs.

2 Why Bolivian Politics Should Matter: A Historical Background

Bolivian history has often been analyzed by stressing the ability of nonindigenous elites to impose their own interests on the entire society.⁵ Despite its popularity, another view has stressed the nonelites' capacity—and particularly that of indigenous communities—to resist and propose alternative political projects.⁶ In this context, it has been suggested that although the evolution of formal institutions in Bolivia reflects a very unequal society until very recent decades, informal institutions may have counteracted these inequalities in different conjunctures of Bolivian history (Peres-Cajías 2012). This perspective is used in the following paragraphs to revise Bolivian history from independence onwards and to illustrate why a specific institutional shock such as the 1952 Revolution may have had long-term redistributive impacts.

A few years after Bolivian independence (1825), the National Congress approved a law which restricted the right to vote for those who had some economic and educational qualifications. This fact has been used to illustrate the idea that the vast majorities of the country did not participate in the configuration of the Bolivian state during the postindependence decades. However, thanks to the seminal work by Platt (1982), it has been proved that the indigenous political power has shaped the Bolivian state through alternative ways. Indeed, it has been stressed that in exchange of the re-institution of the colonial capitation tax on the indigenous population—the so-called *Contribución Indígenal*—the Bolivian Government accepted the social and political autonomy of indigenous communities.

This implicit political pact between the Bolivian state and the indigenous communities ended in the early 1860s, once the government was able to exploit alternative and reliable fiscal revenue sources. This event, in turn, represents the beginning of the so-called oligarchic era (1860s–1930s), a period which is characterized by the consolidation of new political and mining elites and the expansion of *latifundia* at the expense of indigenous communities. Undoubtedly, both economic and political inequalities grew during this period. This, however, does not necessarily mean that

⁵According to this view, the elites' ability to configure economic and political institutions since colonial times up to recent decades has generated several long-term negative economic effects. One of the latest contributions on this perspective is that of Dell (2011) who suggests that the *mita* (a forced mining labor system instituted by the Spanish colonial power in Bolivia and Peru from 1573 to 1812) may explain present-day lower well-being indicators in those zones where this institution was imposed.

⁶Rivera's book title (1984) rightly summarizes this view: *Oprimidos pero no vencidos* (oppressed but not defeated).

mining elites were able to constantly impose their interests on the configuration of the Bolivian state (Gallo 1991; Barragán and Peres-Cajías 2007), a statement frequently stressed by the common knowledge. Moreover, recent research has also underlined the ability of indigenous communities to resist the advance of *latifundia* either by legal or violent means (Gotkowitz 2007).

The Great Depression and the Chaco war against Paraguay (1932–1935) modified the previous political context.⁷ Indeed, new political groups arose (among these, the Movimiento Nacionalista Revolucionario, MNR, a middle-class political organization) with the explicit goal to overcome the institutions imposed by the oligarchy. Moreover, mining workers achieved a higher degree of political organization through the creation of a unified union; political pressure from peasant organizations also increased considerably. In this context, after the revocation of the MNR victory at the national election of 1951, its leaders decided to seize power by violent means. This was made in April of 1952 and, after 3 days of combat, the MNR, with the key support of urban workers, mining workers, and peasant organizations, consolidated the National Revolution.

Shortly after these events, permanent pressure from the social base of the Revolution forced the promulgation of different radical measures: universal adult suffrage, the nationalization of the three biggest mining companies (which represented three-quarters of mining output), and a radical land reform. Likewise, an educational reform was applied in 1953–1955 which met considerable consensus and was intended to reflect "... the new correlation of economic and social forces arising from the revolution" (Contreras 2003: 262).

The MNR also imposed a new economic model characterized by a higher intervention of the state in the economy and the increase of redistributive policies. Initially, this new model was financially unsustainable and, as a consequence, hyperinflation arose as one of the main characteristics of the Bolivian economy from 1952 to 1956.⁸ The 1956 fiscal reform solved these initial macroeconomic disorders. The reform, however, was implemented with the technical and financial support of the IMF and the US Government. Both the left-wing group of the MNR and mining workers saw this process as a betrayal to the principles of the 1952 Revolution, so they reduced its support to the government. Anyway, the MNR won the national election of 1956 by a significant majority and, thanks to the maintenance of the land reform, peasants continued as key allies of the government. Moreover, despite some changes introduced by the 1956 fiscal reform, state intervention and redistributive policies continued as a central feature of the government's economic orientation.

The MNR won again by a significant majority the 1960 national election. Nevertheless, its political support reduced significantly during the victory of the 1964 election and, shortly after this event, a military coup took place. The coup modified the political alliances of the Bolivian Government. Indeed, following the principles of the National Security Doctrine, political and violent repression increased considerably towards left-wing groups and mining and urban workers.

⁷For further references, see Klein (2011a) and Cajías (2015).

⁸See Peres-Cajías (2014) to understand the causes and the dynamics of Bolivian hyperinflation.

In contrast, the military maintained the political support from peasants through the so-called Pacto Militar-Campesino (Military-Peasant pact), which implied the maintenance of the land reform process as well as the increase of state investment in rural areas. Thus, whereas the military tended to repress some of the main political groups of the 1952 Revolution, the Military-Peasant pact assured the maintenance of one of the key redistributive measures implemented during the revolution.

The political context changed dramatically during the 1970s. On the one hand, the Military-Peasant pact ended with the Tolata's massacre (1974). Moreover, whereas military governments maintained the high degree of state intervention in the economy, its redistributive goals were different from those implemented during the 1952 Revolution and its aftermath. Likewise, a higher degree of political repression emerged in the country. Despite these changes, pressure from peasant organizations, mining workers, and urban workers was often able to resist or counteract government's actions. Thus, not surprisingly, the strength of these organizations was critical in the recovery of democracy (1982).

Taking into account these events, it becomes logical to question if, among the radical measures implemented by the 1952 Revolution, there was a major change in the evolution of public education spending in Bolivia. It also appears reasonable to believe that this hypothetical change may have had long-term consequences. On the one hand, the increase of public education spending may have persisted throughout time since the political party which managed the Revolution remained in power until 1964. On the other hand, a persistent indirect effect would be expected until 1974 through the "Pacto Militar Campesino." Finally, following Kosack (2012), it could be argued that the political strength of peasants and workers organizations forced the Bolivian Government to maintain a high level of educational expenses. These ideas are explored in the following sections.

3 The Puzzle: The Bolivian Paradoxical Equilibrium Between Low Taxation and Human Capital Investment

During the last decades, public finances have increasingly been considered as an instrument to understand the evolution of the implicit fiscal pact between the state and society. This approach has been used by political scientists (Lieberman 2002), economists focusing on the analysis of developing economies (Brautigam et al. 2008), or international organizations such as the World Bank. These have suggested, for example, that the size and composition of public finances reflect the institutional equilibrium achieved by each state, given the economic, political, and social restrictions it must face (De Ferranti et al. 2004; OECD 2009; CEPAL 2010). Economic historians have also used this approach as an efficient tool to assess, for instance, the institutional framework established by European colonial powers both in Southeast Asia (Booth 2007) and sub-Saharan Africa (Frankema 2011).

This section uses this approach to depict the plausible evolution of the Bolivian fiscal pact from the first decades of the twentieth century onwards. My analysis is

based on Frankema (2011), who identifies four different types of institutional equilibriums on the basis of the relationship between tax pressure and a (human and physical) capital expenditure ratio. According to this author, those countries where both tax collection and the fiscal priority of capital investment are small and in a “night-watchman” equilibrium—i.e., under a minimal state. The “extractive” scenario corresponds, in turn, to those cases where tax collection is high but is not reinvested in capital formation. If capital investment is high but tax collection is low, the equilibrium is characterized as a “benign state” one. Finally, a “developmental equilibrium” is reached when both tax collection and public capital formation are high.

In my case, I analyze the relationship between tax pressure levels⁹ and the fiscal priority of human capital spending (namely education and health) exclusively, and consider those four institutional equilibrium categories as implicit fiscal pacts. My analysis is limited to human capital investment, firstly, because the main interest of this chapter is education spending and, secondly, because (especially during the ISI period) public investment in physical capital was carried out not only by the Central Government (which is the object of this research) but also by state-owned companies. In order to distinguish between those four different fiscal pacts, I assume that the minimum ratio required for a significant impact of state intervention in the economy is around 20% of GDP for tax pressure and 6% of GDP for human capital investment.¹⁰

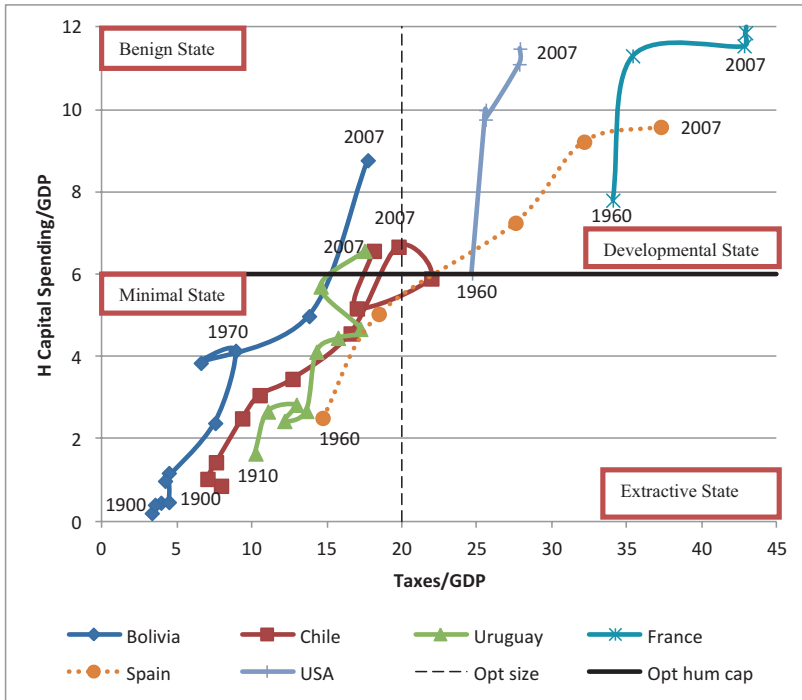
Graph 1 compares the Bolivian experience throughout the twentieth century with two of the most *developmental* states in Latin America (Chile and Uruguay; see Azar and Fleitas 2012). As a reference, it also shows the evolution of France, Spain, and the USA from 1960 onwards.¹¹ As might be expected, during the second half of the twentieth century Latin American governments have had both lower revenue levels and less human capital spending than France and the USA. Indeed, during most of the period under analysis, tax pressure levels and public expenditure in human capital in both Chile and Uruguay did not exceed 20% and 6% of GDP, respectively. By contrast, those levels were surpassed both in the USA and France already in the 1960s.¹² Likewise, whereas tax pressure and public expenditure in human capital in Spain were

⁹Tax revenues represent the most relevant part of Latin American *current* revenues and, consequently, fairly reflect the evolution of overall public revenues throughout the period under study. Moreover, since taxes are a transfer of money from citizens with neither proportional nor instantaneous counterparts from the government (IMF 2001) political scientists consider that the higher the government’s dependence on tax revenues, the higher the incentives to negotiate and respond to the citizens’ demands (Lieberman 2002; Moore 2007). Therefore, the study of the tax pressure may be used as an instrument to analyze the evolution of both the government size and the government’s legitimacy in the public opinion.

¹⁰These are arbitrary figures, but they represent a good reference point of the experience of the most developed economies in the second half of the twentieth century (Lindert 2004).

¹¹France and the USA have been chosen because they are representative examples of the so-called European and Anglo-Saxon Welfare States, respectively. The Spanish case is introduced in the analysis as an example of a country that caught up recently with the European Welfare State (Lindert 2004; Comín 1996).

¹²From the 1960s to 2007, whereas the evolution of tax pressure diverged—it remained more or less constant in the USA while it expanded in France—public expenditure in human capital reached levels above 10% of GDP in both countries.



Graph 1 Evolution of the fiscal pact in some Latin American and OECD countries (10-year averages), 1900–2007. Sources: (a) *Bolivia*, from Peres-Cajías (2014); (b) *Chile*: from 1900 to 1989, Base de datos EH CLIO LAB, Iniciativa Científica Milenio Mideplan; from 1990 to 2007, ECLAC database: www.eclac.cl; (c) *Uruguay*: Azar et al. (2009); (d) OECD countries data come from Peter Lindert web page (<http://lindert.econ.ucdavis.edu/>), from Sergio Espuelas web page (<https://sites.google.com/site/sergiolespuelas/>) and from the OECD database (www.oecd.org). Notes: Data referred to Latin American countries are 10-year average; data for France, Spain and United States correspond to 1965, 1975, 1985, 1995 and 2007

fairly similar to those of Chile and Uruguay during the 1960s, Spanish indicators converged steadily with the US and French ratios thereafter.

In the case of Bolivia, both tax collection and human capital investment were particularly small until the first half of the twentieth century. However, from the 1960s to the 1980s, the human capital ratio tended to converge with the Chilean and Uruguayan ones, despite the fact that tax pressure remained well below 10% of GDP. Later on, from the 1980s onwards, whereas Bolivian tax pressure levels have become similar to those of Chile and Uruguay, the ratio between human capital spending and GDP has approached the Spanish one.

Table 1 expands the previous comparison by incorporating information on the evolution of tax pressure in some of the most developed Latin American countries, as well as in some of the poorest ones. The table confirms the small size of the Bolivian Government and the persistence of a tax pressure gap with several countries of the region until very recent decades. Indeed, whereas tax revenues represented

Table 1 Latin American Central Governments' tax revenues as a share of GDP (% , 10 years' average), 1882–2007

	Bolivia	Brazil	Chile	Colombia	Guatemala	Peru	Uruguay
1882–1889	3.14	N.a.	7.06	N.a.	N.a.	N.a.	N.a.
1890–1899	2.74	N.a.	6.96	N.a.	N.a.	N.a.	N.a.
1900–1909	3.30	8.89	7.92	5.04	N.a.	4.10	11.90
1910–1919	3.91	6.57	7.01	3.87	N.a.	3.89	10.22
1920–1929	3.51	5.37	7.58	3.69	N.a.	3.95	11.05
1930–1939	4.44	6.88	9.33	4.31	N.a.	5.10	12.94
1940–1949	4.44	8.46	10.50	4.29	6.58	6.91	12.14
1950–1959	4.19	10.17	12.69	6.72	7.74	7.59	13.61
1960–1969	7.53	12.46	16.57	6.85	7.40	10.82	14.28
1970–1979	8.89	18.34	19.76	8.14	8.50	14.09	15.72
1980–1989	6.57	17.69	21.95	7.45	7.26	12.68	17.21
1990–1999	13.79	18.96	16.98	8.18	9.40	12.82	14.57
2000–2007	17.71	22.36	18.12	11.76	11.81	13.37	17.49

Sources: (a) *Bolivia*, from Peres-Cajías (2014); (b) other countries from 1900 to 1989: *Brazil*: IBGE. Estadísticas Históricas do Século XX; *Chile*: Base de datos EH CLIO LAB, Iniciativa Científica Milenio Mideplan; *Colombia*: Kalmanovitz (2011); *Guatemala*: ICEFI (2007); *Peru*: Portocarrero et al. (1992); *Uruguay*: Azar et al. (2009); (c) other countries from 1990 to 2007 from ECLAC database: www.eclac.cl

Notes: N.a.: Not available. Because of the lack of total tax collection from 1882 to 1899 and from 1936 to 1939, the Bolivian averages in the 1880s, the 1890s, and the 1930s have been calculated by using total current revenue figures

around 7% of GDP in Chile during the 1880s and 1890s, they amounted to ca. 3% of GDP in Bolivia, i.e., less than half the Chilean figure. During the first half of the twentieth century, tax pressure in Bolivia reached a level similar to Colombia and Peru, but still well below the Chilean and Uruguayan figures.¹³ The 1952 Revolution did not change this and, until the 1980s, Bolivian tax levels remained similar to those of Colombia and Guatemala, and much lower than those of Chile, Peru, Uruguay, and even Brazil—a country with relatively low Central Government revenues due to its federal structure. It was not until the 1990s when Bolivian tax levels started to converge with the regional average.

As for human capital spending, Peres-Cajías (2015) has contrasted the Bolivian experience with that of Chile, Peru, and Uruguay. The analysis stressed that both education and health spending in Bolivia were lower than 1% of GDP during the first half of the twentieth century. Thereafter, whereas health spending remained marginal, Bolivian public spending in education increased up to 3% of GDP, on average. Hence, in contrast with tax pressure levels, public spending in education as a share of the GDP was higher in Bolivia than in Uruguay already in the 1970s.

¹³ Bolivian tax levels were similar to those of Brazil, one of the biggest economies in the region. However, Brazil is a federal country and, therefore, the underestimation of Brazilian total tax revenues—defined as tax collection of General Government—are higher than in the case of nonfederal countries.

During the 1990s, Bolivian public education spending continued growing and, at the eve of the twenty-first century, public education spending as a share of GDP was around 6%, i.e., double that of Peru and Uruguay.

Summing up, in coincidence with the pessimistic view on Latin American institutions, the analysis suggests that a “minimal state” fiscal equilibrium has characterized Bolivian history during the twentieth century. However, it cannot be ignored that during the second half of the twentieth century the Bolivian State has moved from that “minimal-state” equilibrium to a “benign-state” one. This transition has been spurred by the increase of public education spending. Indeed, over the second half of the twentieth century, the ratio between Bolivian public spending in education and GDP has converged and then surpassed the equivalent figures in some of the most developmental countries of Latin America. Therefore, the next sections explore if this peculiar transition may allow affirming that public education spending in Bolivia was an exceptional case in the Latin American context after the 1952 Revolution.

4 The Evolution of Public Spending in Education: Was Bolivia a Special Case in the Latin American Context?

The goal of this section is to assess the Bolivian pattern of public spending in education. Firstly, given the low level of Bolivian taxes until the 1980s, it is analyzed to what extent the Bolivian convergence in the ratio of education spending to GDP that has been identified in the previous section was affected by a limitation that can often be found in Latin America: the conflict between the presence of good policy objectives and the absence or instability of internal resources to achieve those objectives. According to some authors (Morales and Sachs 1990; Dornbusch and Edwards 1989; Weyland 1998), this conflict may end up by affecting negatively in the long-run previous public policy achievements. In this context, the following paragraphs analyze how the fiscal vulnerability of the Bolivian Government affected the sustainability of education expenditure during the Revolution and thereafter.

To begin with, Table 2 looks at the effects of public revenue cycles on the evolution of public expenditures; specifically, it displays the annual average growth rates of public revenues and each category of public expenditure in those periods when *current* revenues rose or fell. Regarding the former ones, the table indicates that the jump in current revenues from 1904 to 1913 generated a more than proportional increase in the different categories of expenses, with the exception of defense. By contrast, during the 1922–1929 years, the expansion of expenses was less than proportional than revenue growth. During the Chaco War (1932–1935) and after, while general administration spending grew less than current revenues, economic expenses grew at the same rate and social public expenditure at an even higher rate. From 1956 to 1978, once again general administration expenditures grew more slowly than current revenues, economic and social public expenditure grew at the

Table 2 Growth rates of Bolivian public revenues and expenditures in real terms, 1900–2007 (%)

	Total revenues	Total expenditure	General administration	Defense	Economic	Social public expenditure	Education	Health
<i>Periods of increase in current revenues</i>								
1904–1913	5.07	6.29	7.55	2.65	5.46	15.36	15.36	a
1922–1929	5.96	3.53	2.67	5.66	3.89	4.28	3.94	1.81
1933–1941	9.72	2.34	8.70	-4.80	9.33	11.03	8.76	18.96
1956–1978	5.30	5.44	4.65	6.72	5.32	5.55	6.00	7.62
1986–1999	2.86	3.33	4.92	1.21	3.13	3.68	3.69	5.68
2003–2007	7.89	0.91	0.40	0.70	2.32	0.74	1.48	0.79
<i>Periods of decrease in current revenues</i>								
1913–1922	-3.62	-1.76	-1.00	-1.45	-5.18	-2.63	-2.76	-1.53
1929–1933	-11.31	1.81	-12.90	14.59	-7.99	-10.45	-9.35	-1.57
1941–1956	-2.88	-2.46	-4.12	-5.13	-1.27	0.46	-0.02	-3.50
1978–1986 ^b	-0.13	-0.96	-1.66	-1.49	-1.53	-0.61	-3.25	-9.43
1999–2003	-0.06	4.54	5.63	2.13	4.29	4.37	5.64	14.52

Sources: Peres-Cajías (2014)

^aDisaggregated data for health expenditure are available just from 1911 onwards; (b) the public revenue cycle which began in 1978 finished in 1985, but the analysis has been extended to 1986 because of the lack of detailed data for each category of expenditure in 1985

^bThe public revenue cycle which began in 1978 finished in 1985, but the analysis has been extended to 1986 because of the lack of detailed data for each category of expenditure in 1985

same rate and both education and health spending grew at higher rates. Finally, whereas in 1986–1999 all kind of expenses—with the exception of defense—grew more than current revenues, the opposite effect took place from 2003 to 2007.

What happened in those periods when current revenues decreased? During the unstable years of the First World War and the postwar years, the reduction of revenues was in line with a general reduction—at different rates—of all expenses. This was also the case during the post-Great Depression years—defense expenditures being the exception because of the Chaco War. The persistent reduction in real revenues that took place from the early 1940s to 1956 fuelled the reduction of general administration, defense, and economic expenditure, but not that of social public expenditure. Later on, during the years of the external debt crisis, by contrast, education and health spending were among those expenditures which decreased more than current revenues. Finally, the slight reduction in revenues of 1999–2003 did not generate a similar stagnation or decrease in any category of expenditures.

Therefore, focusing on the period after the 1952 Revolution, whereas education spending was particularly benefited from the expansion of public revenues from 1956 to 1978, it was also among those spending categories that were more affected by the subsequent public revenue crisis. This finding does not allow saying that the Revolution was ineffective in the expansion of education services, but it recalls the initial warning of this section: the lack of correspondence between good policy objectives and internal resources may end up by reversing previous achievements.¹⁴

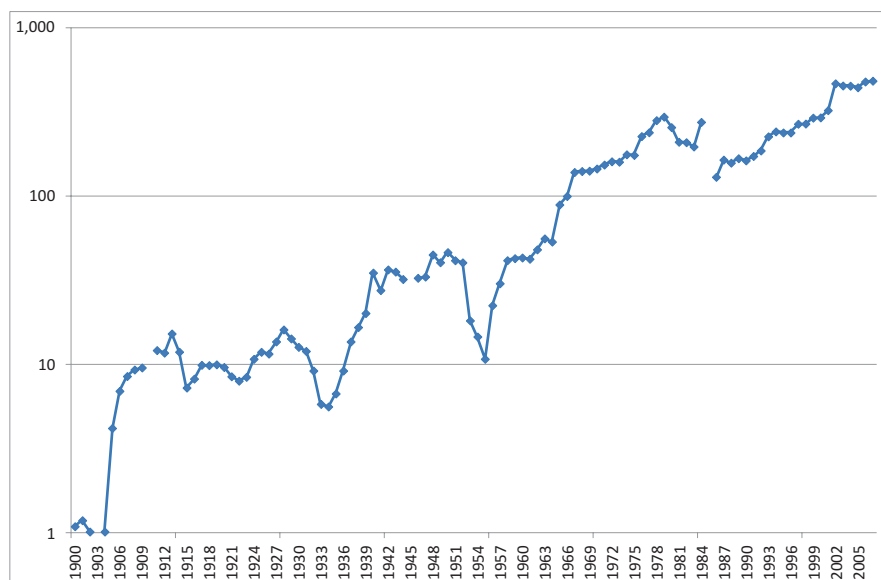
This idea is further explored in Graph 2, which shows the evolution of education spending per capita in real terms. The graph shows a considerable increase at the eve of the twentieth century, which was derived from the centralization of education and the liberal educational reform. According to Contreras (1999: 486–487), this process can be understood as the government elites' effort to change the main characteristics of the educational public system by taking advantage of ideas and methods developed in Europe.¹⁵ In this context, the stability of education spending per capita from the early 1910s to the late 1920s can be interpreted as an indication of the stability of the new model of public education. Beyond this political commitment with educational spending, the effects of both the Great Depression and the Chaco War on public revenues ended up affecting the evolution of education expenses per capita, which decreased substantially from 1930 to 1935.

Immediately after the war and until 1940, education spending grew spectacularly in per capita terms. In contrast with the previous experience, this increase was driven by the new role assigned by the Military-Socialist regimes to public education—the instrument to *build the Nation*—as well as by the demands from indigenous and popular classes, which identified education as an efficient tool to better defend its long-term claims towards the Bolivian state (Contreras 1999: 488–489).

Whereas these political elements remained, education spending per capita decreased in the aftermath of the 1952 Revolution. This process persisted until 1955

¹⁴ It must be recalled that the new configuration of the state brought by the 1952 Revolution did not generate any substantive change in tax pressure or tax composition (Peres-Cajías 2014).

¹⁵ See also Cajías (2011) for an analysis of the main characteristics of this educational reform.

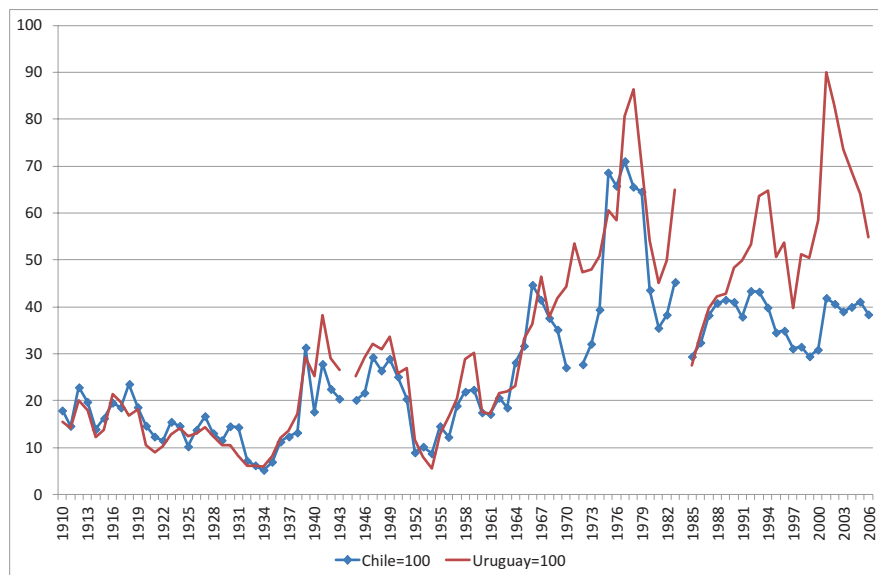


Graph 2 Bolivian Central Government's education spending per capita (Bs. 2000), 1900–2007. *Source:* Peres-Cajías (2014)

and was driven by the initial macroeconomic disorders generated by the revolutionary process. Thereafter, education spending per capita increased until the late 1970s. Some structural determinants may explain this expansion. On the one hand, after the stabilization program of 1956, foreign aid, initially, and both external debt and the steady growth of the Bolivian economy, thereafter, allowed the growth of government expenses. On the other hand, the increase in education spending was also a government response to the dramatic expansion of the Bolivian population during this period.

However, it stands out that the expansion of education spending per capita was not steadily from the mid-1950s to the late 1970s. This suggests the existence of different political goals related with education spending during this period. Indeed, the growth in education spending until 1964 was closely related with the revolutionary goals and the willingness to expand educational services across the entire country (Dirección Nacional de Informaciones 1962). In this context, whereas the growth rate of education spending decreased after the initial jump from 1956 to 1958, it was sufficient to recover and overpass those levels of education spending per capita which prevailed before the Revolution.

The evolution of education spending per capita accelerated dramatically from 1965 to 1967 and was followed by a steady increase from 1968 to 1975. In contrast to the previous period, these changes were related with the military government's intentions to consolidate the Military-Peasant pact through the expansion of education services to the rural areas (Klein 2011a,b: 222–228). The widespread idea that more education investments were needed in order to foster human capital accumulation



Graph 3 Public spending in education per capita in Bolivia as a share of the Chilean and Uruguayan ones (%), 1911–2007. *Source:* See Table 1. *Notes:* These figures have been expressed in 1990 Geary Khamis international dollars and divided by total population. GDP and population series have been taken from the New Madisson Project Database

in the country also played a significant role (Ministerio de Educación y Cultura 1967: 14–22; PNUD 2010: 106). This last idea would be also critical to understand the expansion of education spending from 1976 to 1979.

Beyond the existence of different political goals and different intensities in the expansion of education spending, Graph 2 also confirms that the macroeconomic disorders of the early 1980s generated a new crisis in education spending per capita. This confirms once more that education spending has clearly been affected by the fiscal fragility of the Bolivian Government. Indeed, during those years when the main revenues of the Bolivian Central Government (external taxes, external borrowing, or external donations) decreased (1952–1956; 1979–1985), education spending also decreased substantially.

As can be observed in Graph 3, these fluctuations seriously affected the convergence of Bolivian education spending in per capita terms to the Chilean and Uruguayan figures. Firstly, during the years of the MNR government (1952–1964), the expansion of education spending just allowed recovering those levels achieved before the Revolution; that is, Bolivian education spending per capita moved around 20% and 30% of the respective figures in Chile and Uruguay. Thereafter, education spending per capita in Bolivia quickly converged up to 70% of the level of education spending per capita in both countries. However, it decreased to just 30% during the first half of the 1980s. Nowadays, there is not a convergence process and education spending per capita in Bolivia is still far away from the levels reached by these countries.

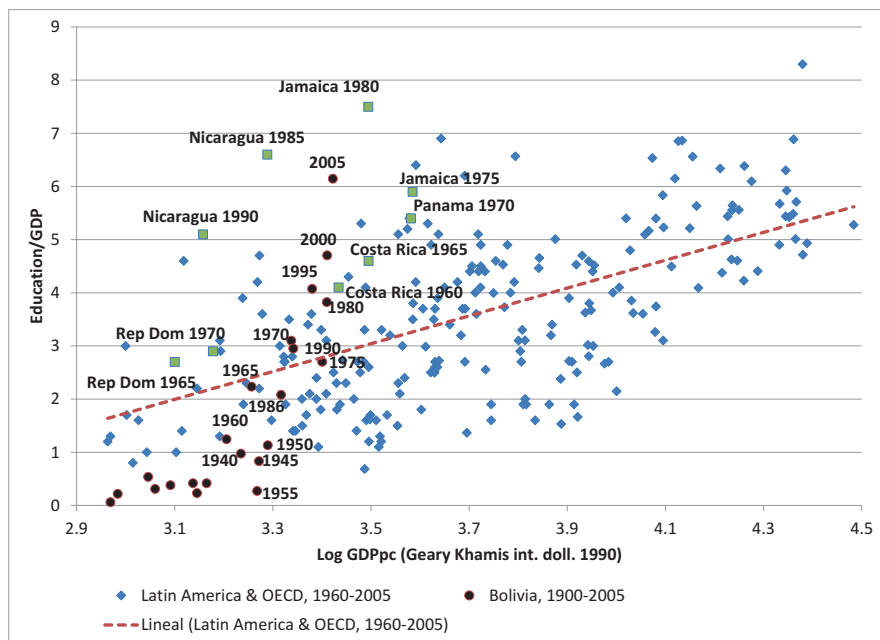
Education spending increased more steadily from 1986 onwards. Initially, this was the consequence of macroeconomic stabilization and the educational reform of 1994. According to Contreras (1999: 491–493; 2003: 271–282) the goal of this reform was to expand education services both in quantity and quality across the country, in order to consolidate education as an efficient instrument for social mobility and economic growth.¹⁶ This reform was contemporaneous to similar changes in neighboring countries and received strong support from international organizations such as the World Bank or the Interamerican Development Bank. Later on, Evo Morales' administration (2006 onwards) made a new educational reform and showed a particular interest in the expansion of educational services towards the most disadvantaged groups of the Bolivian population—see Paz Arauco et al. 2013. Overall, all these changes fuelled the expansion of education spending as a share of GDP.

Hence, the new evidence stresses the reduction of educational spending during the initial years of the revolution. It also shows that, once the initial macroeconomic disorders were corrected, education spending increased and, interestingly enough, this increase continued until the late 1970s. During the early 1980s, however, fiscal instability substantially affected once more education spending. This event stopped a convergence process in terms of education spending per capita which has not been recovered since then. Altogether, these findings suggest that the non-existence of a reliable internal tax base affected the sustainability of education spending and, therefore, the long-term impacts of the 1952 Revolution.

An alternative way to evaluate the long-term impact of the revolution on education services is to analyze the evolution of public spending in education in correspondence with per capita GDP levels. Thus, following Lindert (2010), Graph 4 relates the ratio between education spending and GDP with the log of per capita GDP for Bolivia and different Latin American and OECD countries. As was stated in the introduction, Lindert (2010) suggests that Latin American governments have systematically invested in education much less than would a priori be expected given its level of economic development. Graph 4 helps assessing if the Bolivian experience fits into this classification; it also allows identifying if the Bolivian position changed after the revolution and the timing and magnitude of this hypothetical change.

Graph 4 stresses once more the impact of the initial macroeconomic disorders led by the 1952 Revolution. In effect, whereas the level of economic development in 1955 was quite similar to that of 1945 and 1950, education spending was lower than during these prerevolution years. The graph also stresses that education spending in 1960 was still lower than expected given the Bolivian GDP pc (i.e., below the international trend). Thus, it was not until the mid-1960s when Bolivian education spending increased and, contrary to Lindert's hypothesis, moved around what one would expect given the Bolivian GDP pc. However, the graph also shows that this relatively high level of Bolivian education spending (by Latin American standards and relative to its pc GDP) has been shared by other poor Latin American countries, such as Dominican Republic. This indicates that the Bolivian experience would not

¹⁶See also Contreras and Talavera (2005).



Graph 4 Public spending in education as a share of GDP and GDP pc in Bolivia, Latin America, and OECD countries. *Sources:* (a) *GDP per capita*: for Bolivia, Herranz-Loncán and Peres-Cajías (2016) and the New Madisson Project Database; for the rest of countries: New Madisson Project Database. (b) *Public spending in education as a share of GDP*: for Bolivia, Peres-Cajías (2014), for Uruguay, see Table 1; for the rest of Latin American countries: Frankema (2009: Table A3); for Spain and Portugal: Sergio Espuelas' webpage (<https://sites.google.com/site/sergioEspuelas/>); for the rest of OECD countries: Peter Lindert's webpage (<http://lindert.econ.ucdavis.edu/>). If unavailable, data was also obtained from UNESCO Institute of Statistics webpage (<http://www.uis.unesco.org/>). *Notes:* The green squares show particular Latin American cases which do not necessarily fit in Lindert's (2010) hypothesis. Bolivia presents data each 5 years from 1900 to 2005. Latin American countries present data each 5 years from 1960 to 2005; it corresponds to Argentina, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Paraguay, Peru, Uruguay, and Venezuela. OECD countries present data for 1960, 1975, 1990, and 2005; it corresponds to Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Italy, the Netherlands, New Zealand, Portugal, Spain, Sweden, Switzerland, the UK, and the USA

be necessarily a Latin American exception. This idea can be reaffirmed by considering that public spending in education as a share of GDP has been systematically higher than expected in Cuba,¹⁷ Costa Rica, Panama, and Jamaica from the 1960s to the early 1980s; it has also been higher than expected in Nicaragua during the 1980s.

The volatility of Bolivian education spending as a share of GDP and relative to its per capita GDP from the early 1980s to the early 1990s stresses once more the impact of fiscal instability. It also stands out that Bolivian education spending has

¹⁷The Cuban experience is not plotted in Graph 4 since it distorted the international average.

been systematically higher than expected given the Bolivian per capita GDP from the mid-1990s onwards. This confirms the idea that the 1994 educational reform and the support of multilateral organizations increased education spending up to high levels by worldwide standards (Contreras 1999: Table 2). Likewise, the continuous relatively high level of Bolivian education spending also confirms the Morales' administration interest in the expansion of education services. Thus, this stresses that it was not the 1952 Revolution, but the structural reforms of the 1990s and the recent political changes which *systematically* prompted public education spending in Bolivia up to high levels by international standards.

Finally, any analysis concerned with the long-term consequences of the 1952 Revolution on education spending must be able to answer one critical question: Did the expansion of public expenditure benefit the poor? Due to the lack of micro-data, Peres-Cajías (2015) has analyzed the allocation of public education spending from the early 1950s onwards through two indirect indicators: the tax support ratio for primary pupils and the primary tertiary double ratio.¹⁸ The reconstructed evidence allows saying that the 1952 Revolution did not have any long-term impact on the distribution of educational expenditure. On the one hand, there was no major change in the support ratio to primary education from 1950 to the mid-2000s, around 12%, on average, a similar figure to those of other Latin American countries. On the other hand, although there was a change in the prioritization of primary over tertiary education during the early 1970s, this was hardly sustainable over time. More strikingly, the relevance of tertiary over primary education spending is still highly noticeable in the most recent years and much higher than in several Latin American countries.¹⁹ Therefore, whereas it is not possible to say that Bolivian public spending in education since 1952 has not benefited the poorest, it cannot be stated either that it was particularly pro-poor.

5 Were the Educational Achievements Revolutionary?

It could be argued that, although restricted, public investment in primary education from the 1950s onwards was enough to improve Bolivian educational outputs. This section does not measure the profitability of education spending, but analyzes

¹⁸The first indicator measures the relative importance of public subsidies per attending student in primary education in relation to pc GDP. The second indicator measures the relative importance of public subsidies per attending student in primary education in relation to public subsidies per attending student in tertiary education. The rationale behind these indicators suggests that the higher the relative support to primary education, the higher the redistributive impact of public education spending.

¹⁹According to Lindert (2010), the optimal value for the primary tertiary double ratio is 50%. The Bolivian figure has constantly been below this value. Moreover, whereas the ratio in most of Latin American countries is nowadays around or above 50%, in Bolivia is still around 30%. For a better understanding of the political economy factors behind the allocation of a considerable share of expenditures in tertiary education see Contreras (1999, 2003), Rodríguez (1998), and Peres-Cajías (2015).

if the increase in education spending was contemporaneous to a similar increase in both quantity and quality indicators of educational output. To begin with, Table 3 shows the evolution of both the Bolivian literacy rate and the gross enrollment ratio in primary school throughout the twentieth century. At the eve of the twentieth century, no more than 20 % of total population was able to write and read. Although the literacy rates increased thereafter, their growth rate was certainly low (around 1.1 % per year, on average). Likewise, whereas literacy rates increased at a higher pace after the 1952 Revolution (2.5 % per year, on average) a non-negligible share of the Bolivian population was still unable to write and read at the eve of the twenty-first century. As a consequence of this restriction, the Morales' administration enacted the so-called *Yo si puedo* program, an aggressive alphabetization project exclusively oriented to the elderly. Hence, it was not until 2008 when the UNESCO could finally declare that Bolivia was a territory free of analphabetism (PNUD 2010: 167).

Table 3 also presents estimates of the evolution of the gross enrollment ratio in primary education and allows calculating its growth rate throughout the twentieth century: 3.2 % from 1900 to 1920, 2.8 % from 1930 to 1950, and 5 % from 1950 to 1970. Undoubtedly, therefore, the expansion of the gross enrollment rate in primary education has been faster after the 1952 Revolution. However, it was not until the 1990s when Bolivia achieved a full primary school enrollment, which implies a substantial delay both by regional and international standards (Frankema 2009).

As for the analysis of the quality of educational services, the Bolivian literature offers some partial evidence which suggests that no major change took place after the Revolution. For instance, Contreras (2003: 266) quotes the claims by Fernando Díez de Medina—Minister of Education at the time—which in 1958 regretted the restricted impact of the Revolution on a system in which pedagogical practices were

Table 3 Literacy rates and gross enrollment ratio in primary schooling (%), 1900–2001

Literacy rate		Gross enrolment ratio in primary schooling	
		1880	2
		1890	5
		1900	8
1900	18.5	1910	13
1920	22.5	1920	15
1930	24.9	1930/5	16
1940	27.9	1940/5	21
1950	31.1	1950/5	28
		1960	43
1976	63.21	1970	76
		1980	84
1992	79.99	1990	95
2001	86.72	2000	110

Sources: Own elaboration based on (a) *Literacy rates:* from 1900 to 1940 obtained from Contreras (1999: Cuadro 1), from 1950 to 2001 obtained from National Censuses; (b) *gross enrolment ratio:* from 1880 to 1920 obtained from Benavot and Riddle (1988: Appendix), from 1930/35 to 2000 from UNESCO statistical yearbooks

still dominated by archaic methods. In this regard, the curricula of 1948 survived in both primary and secondary education, at least, until the late 1960s (Ministerio de Educación 1967). In the same vein, Contreras (2003: 270) quotes several studies which regretted the low productivity of educational expenditure as well as the considerable magnitude of dropout and repetition rates throughout the 1970s and 1980s.

The evolution of this last problem can be indirectly analyzed through the use of the methodology developed by Frankema (2008). Taking advantage of UNESCO statistical yearbooks, which presents the enrollment distribution per grade in both primary and secondary education, the author identifies the distribution of students enrolled by using the following formulas:

$$\frac{X_p}{X_p + X_s} * g_{pi}$$

$$\frac{X_s}{X_p + X_s} * g_{si}$$

where X_p and X_s refer to the number of students enrolled in primary and secondary, respectively, and g_{pi} and g_{si} refer to the percentage share of students enrolled in the i th grade of primary and secondary, respectively (Frankema 2008: 440).

Following this methodology, I have estimated the evolution of the enrollment distribution during the 12 years of school in Bolivia from 1965 to 2005 (Table 4). As in the case of developing economies, my 1965 estimations show a distribution considerably skewed towards the first degrees of school—i.e., most of the students enrolled in primary and secondary education were concentrated in the first three grades. Other variables constant, this skewed distribution would be reflecting that a non-negligible share of Bolivian children “... was either repeating one or more years or dropping out before reaching the higher grades.” By looking at the 1975 estimations in Table 4 and Frankema’s Figure 1, repeating and dropout problems in Bolivia seem to have been more severe than in Ghana or Syria, or as bad as in Colombia, which stresses that Bolivian education indicators were not necessarily better than in the rest of the region.

These distributional distortions would also reflect that children enrolled in primary education had a low probability to finish primary education and to graduate up to secondary education. The magnitude of this problem, which is certainly a current restriction in the Bolivian educational system (Contreras 2003: 279) and particularly identifiable in the case of rural (Urquiola and Calderón 2006) and poor families (PNUD 2010: 169), can be measured by looking at the grade distribution ratio. This indicator has been estimated by Frankema (2008) and shows the probability of the children who enter to the school had to reach the sixth grade—i.e., the probability to finish primary. Table 5 presents these estimations for a selected sample of countries which share some common features with Bolivia: poor countries of delayed demographic transition (El Salvador, Honduras, Nicaragua); small countries in which education spending was high by Latin American standards

Table 4 Distribution of grade enrollment in Bolivia in primary and secondary schooling by grade (%), 1965–2005

	1	2	3	4	5	6	7	8	9	10	11	12
1965	32.53	17.19	12.91	9.05	6.87	5.20	5.64	3.57	2.67	1.88	1.36	1.05
1975	23.52	15.68	13.07	9.58	8.71	6.10	6.10	4.36	4.64	3.61	2.58	2.06
1984	19.67	14.54	12.83	10.26	9.41	7.70	5.99	5.13	5.21	3.91	3.04	2.46
1998	13.79	12.11	11.42	10.44	9.55	8.70	7.39	6.27	6.46	5.25	4.39	3.71
2005	11.47	10.23	9.90	9.42	8.99	8.96	8.56	7.62	7.66	6.46	5.77	4.95

Sources: Own elaboration based on from 1965 to 1984: UNESCO Statistical Yearbooks (1973, 1980, 1971); from 1998 to 2007 from UNESCO Institute of Statistics webpage (<http://www.uis.unesco.org/>)

Table 5 Grade distribution ratio 6-1 (%), 1960–2005

	1960/1965	1970/1975	1980/1985	1990/1995	2000/2005
Bolivia	0.32	0.44	0.47	0.63	0.83
Costa Rica	0.41	0.68	0.85	0.79	0.9
Cuba	0.34	0.54	0.98	0.99	1
Ecuador	0.35	0.54	0.64	0.71	0.81
El Salvador	0.29	0.46	0.54	0.67	0.7
Guatemala	0.26	0.33	0.39		0.49
Honduras	0.2	0.33	0.39	0.56	0.61
Jamaica		0.69	0.92	0.96	0.94
Nicaragua	0.18	0.35	0.32	0.41	0.59
Panama	0.57	0.59	0.79	0.8	0.83

Source: Frankema (2008: 445, 452)

(Costa Rica, Cuba, Panama, Jamaica); or small countries in which the indigenous population represents a non-negligible share of total population (Guatemala, Ecuador).

This ratio shows again the restrictions of Bolivian educational outputs. During the early 1960s, the Bolivian indicator was not very different from other countries (with the exception of Panama). However, during the 1970s and 1980s, this indicator improved considerably in countries characterized by high investments in public education (Cuba, Costa Rica, and Jamaica), but stayed below 50% in the Bolivian case. Similarly, the probability of children to finish primary has constantly been higher in Ecuador than in Bolivia during the last three decades of the twentieth century. Thus, it has not been until the eve of the twenty-first century that the Bolivian indicator converged to better records. Therefore, the analysis of both quality and quantity indicators suggests that education spending and educational achievements did not present any significant correlation from the 1952 Revolution onwards.

6 Conclusions

This chapter has offered for the first time a long-term and comparative analysis of public education spending in Bolivia. The chapter has shown that, whereas tax collection levels remained among the lowest in the region until the 1980s, education spending as a share of GDP converged to the levels of Chile and Uruguay—two of the most developmental states in Latin America—after the 1952 Revolution. This paradoxical fiscal equilibrium, however, did not imply a substantial modification of the quality and redistributive character of the Bolivian education system. Four main findings support this claim: public spending in education was hardly sustainable over time; education spending, controlled by per capita GDP, was not outstanding by international standards; the non-existence of a substantial support to primary education may have reduced the redistributive impact of education spending; and education outputs, either in quantity or quality terms, were often among the worse in the region.

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