

## BOLIVIAN PUBLIC FINANCES, 1882-2010. THE CHALLENGE TO MAKE SOCIAL SPENDING SUSTAINABLE

### Methodological Appendix

As stressed in the main text, the new dataset is based on an exhaustive archival research both in Bolivia and abroad. In Bolivia, data were gathered from the following archives and libraries: Archivo y Biblioteca del Honorable Congreso Nacional, Biblioteca del Banco Central de Bolivia, Fundación Flavio Machicado and Archivo y Biblioteca Nacional de Bolivia. Several collections have also been consulted in Spain: Fons Casa Amèrica (Universitat de Barcelona), Fons de la Cambra de Comerç (Universitat Pompeu Fabra), and Fons d'Estadística (Universitat Autònoma de Barcelona). Some data have also been collected in the United States, specifically at the Cecil Green Library (Stanford University) and the Library of Congress (Washington).

Because of data scarcity, the reconstruction of Bolivian public revenues during the last quarter of the 19<sup>th</sup> century was made by combining different sources. Since the availability of detailed data was restricted to two single years — *Memorias del Ministerio de Hacienda* for 1883 and 1884 — except for external trade taxes, whose detail is available for the whole period in the 1900 National Census (*Oficina Nacional de Inmigración, Estadística y Propaganda Geográfica* 1904, p. XLV), it has been necessary to use Gamarra (2007, p. 142) to reconstruct aggregate revenues from 1882 to 1899. The *Memorias* presented an exhaustive list of all revenues collected by the Bolivian central government. The information was organised in two main groups: «Ingresos presupuestos» and «Ingresos no presupuestos». My database includes only the first group of revenues, because the second consists exclusively of financial revenues and is therefore beyond the scope of the present work. Data in the *Memorias* were presented in three columns: «presupuesto», «rendimiento» and «recaudado», and I have used the second one — revenue collection during the fiscal year. This information matches with the data presented in the National Census, which does not include all revenues collected, but just custom duties and export taxes.

For the first third of the 20<sup>th</sup> century, it has been possible to find an exhaustive list of all revenues collected by the Bolivian central government in different sources: the *Cuentas Generales de la República de Bolivia* (1900-1918), Mc Queen (1925) (1919-1923), *Memorias de la Comisión Fiscal Permanente* (1924-1929) and Palenque (1933) (1930-1931)<sup>36</sup>. The linkage of these different sources did not generate any methodological problems since the figures were exactly the same in those years in which the sources coincided. For those years for which it has not been possible to find any information (1903, 1907, 1916

<sup>36</sup> Despite its longer coverage, the estimation of Palenque (1933) has not been used for the years before 1930 because of its lower degree of detail. Palenque (1933) has only been used for 1930 and 1931 due to the inability to find other primary sources

and 1917) the aggregate data were reconstructed using Gamarra (2007, p. 142) and Delgadillo (2001).

*A priori* one would expect that both the availability and quality of primary sources would increase over time. This is clearly false in the case of Bolivian public revenues, for which it has not been possible to identify a single primary source which periodically submitted detailed information on public revenues from 1932 to 1972. Furthermore, most information is restricted to budgeted flows, which, as stated in the main text, may generate considerable biases in the analysis<sup>37</sup>. Therefore, the estimation is based on different primary sources which — albeit their lower level of disaggregation and their lack of continuity — present some data on *cash* flows.

In this case, however, the linkage of different sources has required a lot of caution. A previous contrast between the information presented by Delgadillo (2001), Gómez (1978) and MOxLAD pointed to considerable differences among secondary sources and to the existence of different primary sources with different information. For instance, in the case of Delgadillo's sources, the Bolivian Central Bank Yearbooks covered, among the four main official categories or public revenues, just those generated by the «Renta Aduanera» and «Impuestos Internos», ignoring therefore the «Renta de Comunicaciones» and the «Renta Consular»<sup>38</sup>. Similarly, in the case of Mitchell's data — which is the main source of the MOxLAD database — revenues generated by foreign exchange controls are ignored from 1936 to 1939 and from 1952 to 1956. In the following paragraphs I specify the sources that I finally used in my estimation and all the corrections made on the original figures.

Figures for the period 1932-1935 are based on the *Memoria del Banco Central de 1936*, which was the only source that presented disaggregated data for those years<sup>39</sup>. Two sporadic publications which displayed detailed information on Bolivian public revenues were used for the estimation of disaggregated revenues from 1942 to 1944: *Finanzas 1942-1943* and Anexo No. 1 of the *Memoria del Ministerio de Hacienda*<sup>40</sup>. Estimates for the period 1947-1951 are based on the *Memoria del Banco Central de 1951*. However, in order to consider all the revenues collected by the central government, those

<sup>37</sup> Wilkie (1969, p. 53) indicates that the Bolivian government stopped publishing cash-revenues from 1934, and that his estimation of Bolivian public expenditures is based on several accounting books located at the warehouse of the Ministry of Finance. Despite the visit to several archives, it has not been possible to find these books to use them in the present research.

<sup>38</sup> Those four categories were used in the Bolivian public finance accounts from the late 1930s to the early 1980s: see *Finanzas* (1942), *Estadística Financiera* (1959), *Estadística Financiera* (1963), *Informe de Labores* (1966-1967) and Otálora (1995).

<sup>39</sup> The sum of all revenue categories did not match the aggregate figure presented in this source for 1934. Therefore, I increased the amount of «Gravámenes a la Industria Nacional», which was a clear outlier during that year.

<sup>40</sup> Again, the sum of all revenue categories did not match the aggregate figure presented in this source for 1942, and I therefore assumed the difference to correspond to the «Derechos arancelarios», whose amount was not reported in the source.

coming from the «Renta Consular» and «Renta de Comunicaciones» — available in *Boletín Estadístico No. 83 del Ministerio de Hacienda* (1959) — were added to the original source. Finally, aggregate data for other years are based on Delgadillo (2001) for 1936 and 1937 and the *Boletín Estadístico No. 83 del Ministerio de Hacienda* (1959) for the remaining years.

Two different types of sources were available for the period 1952-1963: the UN Statistical Yearbooks and some scattered publications of the Ministry of Finance. Whereas both groups of documents may be useful for reconstructing the structure of public revenues, my database is mainly based on the former, since the information is organised there according to the international standards that have been adopted in this research. For those years for which disaggregated data were not available (1952, 1954 and 1960), aggregate figures were taken from the *Boletín Estadístico No. 83 del Ministerio de Hacienda* (1959). There are some years of this period for which the information available is very different in the different sources. In those cases I have given preference to UN data.

The UN yearbooks no longer present detailed Bolivian public finance data after 1963. Therefore, aggregate revenues for the period 1964-1969 were reconstructed on the basis of the International Financial Statistics published by the IMF. The UDAPE's (1986) survey allowed a disaggregated reconstruction of public revenues for 1970-1972. The linkage between these two sources was not problematic since they presented more or less the same aggregate figures.

From the 1970s onwards, two long series are available which display disaggregated data of central government's revenues. The first is the aforementioned survey made by UDAPE (1986), which covers the period 1970-1985. The second is the IMF Government Finance Statistics, which presents disaggregated data from 1973 onwards. My database is based on the latter for two reasons: (a) the greater length of the series, (b) its higher adaptation to international standards. However, there is no significant difference between these two sources.

The reconstruction of the revenue structure for both central and general government from 1990 to 2010 benefits from the availability of on-line information. Moreover, this information is provided by three different institutions: UDAPE, the Economic Commission for Latin America (ECLAC) and the IMF (although the IMF general government data only starts in 2002). Despite this data abundance, it is still necessary to make a careful analysis of the different sources, because not all of them display the information in the same way. For instance, the structure of revenues in the UDAPE website is based on an idiosyncratic Bolivian classification and, therefore, requires a complete reallocation of the different revenues to adapt them to international criteria. In addition, the statistical information provided by the three sources does not match perfectly. A comparison between the three sources indicates that UDAPE tends to overestimate tax revenues by classifying as taxes some revenues that can hardly be

considered as such by international standards. I have finally relied on the ECLAC series, because they organise the information according to international classifications, and have a greater time span in the case of the general government statistics than the IMF. Moreover, since the aggregate figures of both ECLAC and IMF are very similar, the link of the ECLAC data with the estimates for the previous period does not involve any difficulty.

As for public spending, I have used the *Cuentas Generales de la República de Bolivia* for the reconstruction of each ministerial expenditure from 1900 to 1909. This information has been linked with Palenque (1933), which is also based on the *Cuentas Generales* for 1911-1931. For the period 1932-1966 I have used the disaggregated data provided by Wilkie (1969). The linkage between Palenque's and Wilkie's series is not problematic since differences between both series are always lower than 1 per cent in those years in which both series coincided (1930 and 1931). On the other hand, my series is ca. 2 per cent higher than Wilkie's because I included earmarked expenditures («Gastos destinados»; those expenditures that were directed to very specific destinations and were financed through very specific taxes) among «Other expenditures». For 1967-1972, I used the information available in *Estadísticas Económicas de USAID*, which presents the same data as Wilkie, but with a higher degree of aggregation. Finally, the 1973-2010 period has been reconstructed by using the IMF *Government Financial Statistics* CD-database.

The distribution of revenue and expenditure among different categories has followed the most widely accepted international definitions (IMF 2001). The database is organised according to an adapted version of the IMF *functional* classification (IMF 2001) which considers three general categories with several sub-categories in the case of revenues and six categories and three sub-categories in the case of expenditures (Table A3).

The new database represents substantial progress in comparison with the previously available evidence in the Bolivian historiography. In the case of revenues, for instance, whereas Delgadillo (2001) offers aggregate data for 1900-1960 and Gómez (1978) for 1900-1970, my revenue estimation provides detailed data from 1882 to 2010<sup>41</sup>. As shown in Figure A1, my figures are identical to those previous estimations from 1900 to 1937. After this year some differences emerge between the series, which are not surprising given the higher uncertainty of the public finance statistics available for that period. The highest differences are found between 1957 and 1963, and can be explained by the fact that Gómez's data include donations, a category which was particularly important during those years but has been deliberately removed from my estimation which focuses on current revenues. In fact, after 1964, once the relative importance of donations started to decrease, both estimations tend to converge again.

<sup>41</sup> Likewise, the IMF International Statistics or the United Nations yearbooks only provide information since 1950.

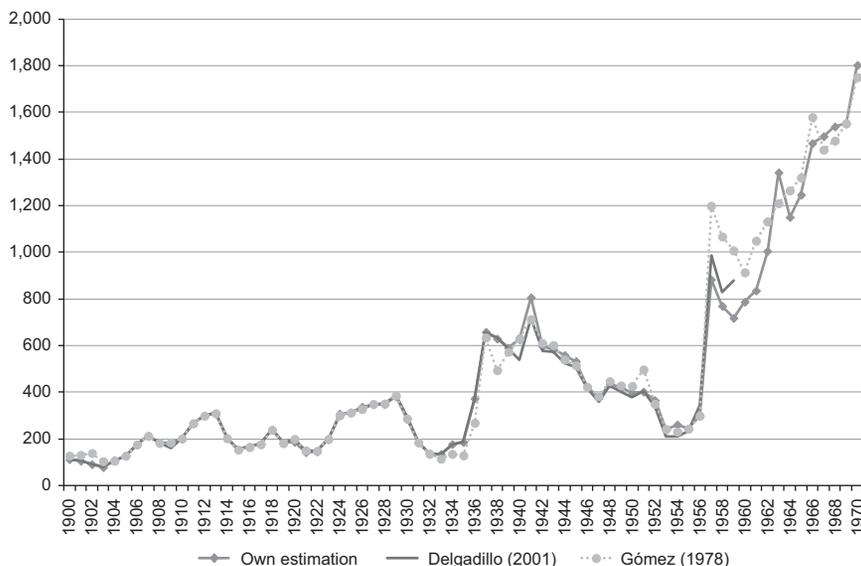
**TABLE A3**  
CURRENT REVENUE AND TOTAL EXPENDITURE CLASSIFICATION

Current revenue	Taxes	Direct	Income, profits and capital gains	
			Payroll and workforce	
			Property	
		Indirect internal	general taxes	
			Excises	
			On the use of goods	
		On international trade	Custom and other import duties	
			Taxes on exports	
			Exchange profits and exchange taxes	
		Non-tax revenues	Other taxes	
	Property income			
	Sales of goods and services			
	Other non-tax revenues			
	Social Contributions			
Total expenditure	General Public Services			
	Public order and safety			
	Defense			
	Economic Affairs			
	Social Public Expenditure	Education		
		Health		
		Welfare		
		Others		
Others				

Sources: IMF (2001: 49, 76).

Figures A2 and A3 compare my estimation with the equivalent figures reported by the widely utilised MOxLAD database. The similarity between both revenue series (Figure A2) is only broken during the late 1970s because of a

**FIGURE A1**  
**ALTERNATIVE ESTIMATES OF BOLIVIAN CENTRAL GOVERNMENT'S REVENUES, 1900-1970 (MILLIONS BS. 2000)**



Sources: Delgadillo (2001), Gómez (1978) and my own figures.

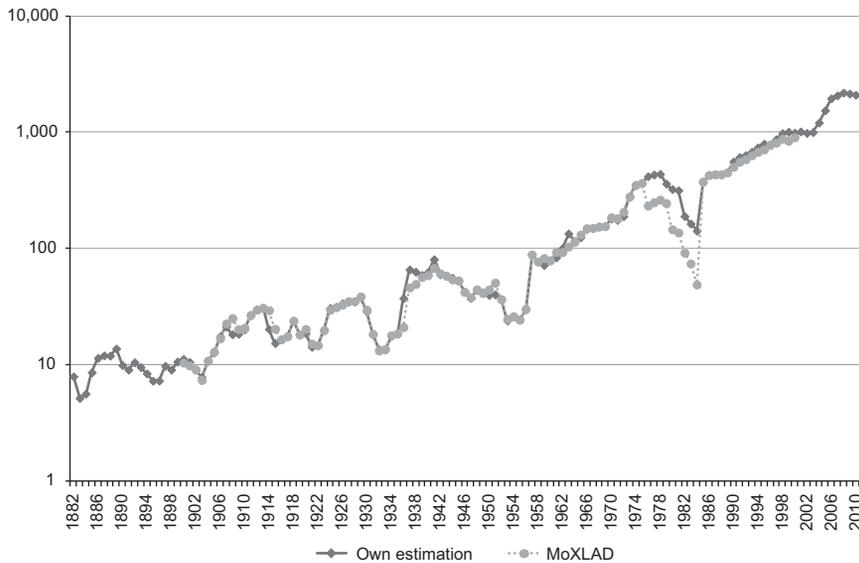
Notes: The three series have been deflated using the price index presented in the main text.

decrease in MOxLAD series that is difficult to explain<sup>42</sup>. In the case of expenditures (Figure A3), some level differences are occasionally identifiable from 1900 to 1985 which are also difficult to explain, but might be the result of differences in either the unit of observation or the primary sources used in the estimation<sup>43</sup>.

<sup>42</sup> According to the MOxLAD series, Bolivian public revenues started to decrease in 1976, but this is difficult to believe, given the economic dynamism of that year — with a GDP growth rate of 6.1 per cent. In contrast, my series suggest that Bolivian public revenues started to decrease in 1979, which is consistent with the simultaneous crisis of the economy — the growth rates of GDP and GDP per capita being  $-0.02$  per cent and  $-2.33\%$ , respectively. The information provided by local sources (UDAPE 1986) is in line with my estimation.

<sup>43</sup> From 1900 to 1985 the MOxLAD revenue and expenditure series are based on Mitchell (2003). The origin of the series offered by this author is not clear. For instance, he offers data on Bolivian public expenditure from 1888 to 1895 based on an estimation whose source is not clarified. In relation to this, despite I have consulted several primary sources. I was not able to find any series of Bolivian public expenditure during this period of time. Likewise, Mitchell's data from 1896 to 1970 refer to Federal [sic] Government. Since the Bolivian state has never had a federal organisation, it is difficult to know what exactly is measured by the author. In any case, if Mitchell wants to refer to the Bolivian central government, the level differences between his estimates and my series may be reflecting differences in primary sources. From 1900 to 1972, Mitchell obtained the information from the so-called «Boletín Estadístico», whereas my estimates are based on the sources

**FIGURE A2**  
**MOXLAD AND MY ESTIMATES OF BOLIVIAN CENTRAL GOVERNMENT'S**  
**REVENUES, 1882-2010 (TEN MILLIONS BS. 2000)**



Sources: MOxLAD database: <http://moxlad.fcs.edu.uy/>, and my own figures.

Notes: Both series have been deflated using the price index presented in the main text.

These differences disappear from 1985 onwards, when both series are based on the IMF statistics.

In addition, my database provides disaggregated figures for different categories of both public revenues and expenditures. To date and to my knowledge, this is the first disaggregated estimation with such a long time span and, as discussed in the main text, it constitutes an essential instrument to obtain an adequate understanding of the role of the state in the Bolivian economy since the late 19<sup>th</sup> century.

## References

### Statistical Sources

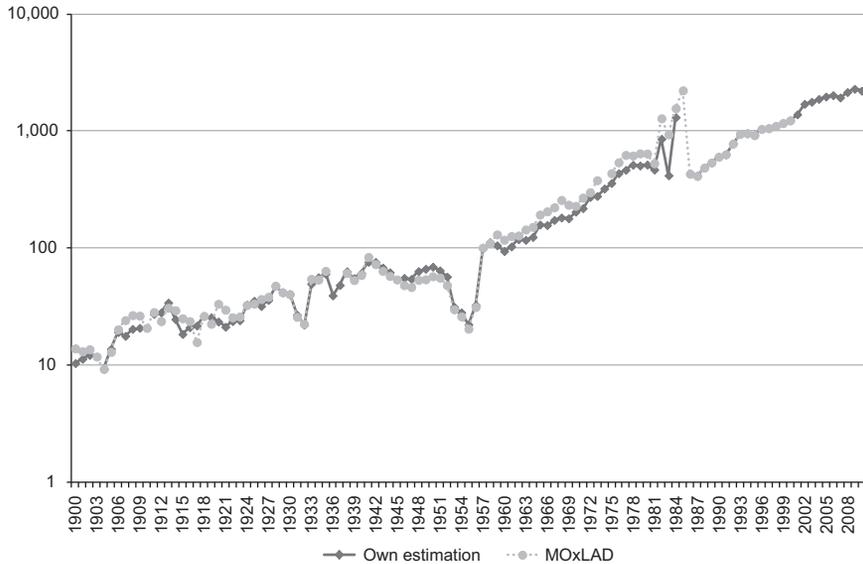
#### IMF

*Finanzas del Ministerio de Hacienda* (1942)

(Footnote continued)

presented above. From 1973 to 1984, he obtained the information from the so-called «Bolivian en cifras», whereas my estimation comes from the original data published and revised by the IMF.

**FIGURE A3**  
**MOXLAD AND MY ESTIMATES OF BOLIVIAN CENTRAL GOVERNMENT'S**  
**EXPENDITURES, 1900-2010 (TEN MILLIONS BS. 2000)**



Source and note: See Figure 2.

*Estadística Financiera* (1959-1963)  
*Informe de Labores del Ministerio de Hacienda* (1966-1967)  
*International Financial Statistics* (1960-1972)  
*Government Finance Statistics* (1973-2007)

**REPÚBLICA DE BOLIVIA**

*Finanzas del Ministerio de Hacienda* (1942)  
*Estadística Financiera* (1959-1963)  
*Informe de Labores del Ministerio de Hacienda* (1966-1967)  
*Boletín Estadístico No. 83 del Ministerio de Hacienda* (1959)  
*Cuentas Generales de la República de Bolivia* (1900-1918)  
*Memorias del Ministerio de Hacienda* (1872-1917)  
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