

# OPTIMISTIC BUT FLAWED? A REPLY\*

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## ABSTRACT

Replying to Rafael Dobado-González's article on living standards in Spanish America during the colonial period, we discuss the methodology and evidence published in Arroyo Abad, Davis, and van Zanden (2012).

**Keywords:** economic history, macroeconomics and monetary economics/growth and fluctuations, Latin America/Caribbean

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## RESUMEN

En respuesta al artículo de Rafael Dobado-González sobre niveles de vida en Hispanoamérica durante el periodo colonial, discutimos la metodología y la evidencia publicadas en Arroyo Abad, Davis, and van Zanden (2012).

**Palabras clave:** historia económica, salarios reales, estándares de vida, Latinoamérica

### 1. INTRODUCTION

In the last few years, a renewed interest in living standards in Latin America is evident from the number of articles published<sup>1</sup>. Inspired by the controversial and influential works of Engerman and Sokoloff (1997) and Acemoglu *et al.* (2001), economists, historians and economic historians are devoting more attention to comprehensive studies on Latin America to understand its evolution and performance before the 20<sup>th</sup> century<sup>2</sup>.

Our work was the first systematic attempt to estimate living standards in selected urban centres in Latin America during colonial times to allow comparison with other cities in the world (Arroyo Abad *et al.* 2012). Our motivation was to take advantage of the works on Europe and Asia and put Latin America on the map. The results may have been surprising for many readers; however, historians of Latin America had long shown the particular dynamism of the Latin American economies throughout colonial rule<sup>3</sup>.

These results point to high living standards in Latin America when compared to Western Europe and Asia together with cycles of expansion and contraction throughout colonial rule. Dobado-González (2015) claims that our findings fit within an «optimistic» economic evolution of Latin America<sup>4</sup>. We believe that this new evidence is an important contribution to tracing Latin America's history in a comparable fashion and from a quantitative perspective. In fact, our results have inspired us to continue this work and to estimate GDP *per capita* for Mexico and Bolivia-Peru (Arroyo Abad and van Zanden 2014). Moreover, we welcome new works that improve our results with new data and novel methodologies.

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<sup>1</sup> See for example: Salvatore *et al.* (2010); Arroyo Abad *et al.* (2012); Allen *et al.* (2012); Dobado and García (2014); Challú (2010); Arroyo Abad (2013); Arroyo Abad (2014); and Challú and Gómez-Galvarriato (2015).

<sup>2</sup> See Dobado-González (2015) for a review.

<sup>3</sup> See Salvucci (1994) for review essay on Bourbon Mexico and the quintessential work on prices in Latin America by Tandeter and Johnson (1990).

<sup>4</sup> Unless otherwise specified, we refer to Dobado's interpretation according to his article published in RHE-JILAEH Dobado-González (2015).

Dobado's latest assessment on the literature on living standards in Latin America challenges our methodology and evidence used. For starters, Dobado-González (2015, p. 32) argues that Dobado and García's (2014) methodology is better as it apparently introduces no assumptions on consumption patterns<sup>5</sup>. He proposes the use of heights with real wages measured in kilograms of grains, meats and sugar. However, this simple approach suffers from at least two related shortcomings: lack of comparability across the world and missing information on caloric intake.

Given that our motivation was to incorporate Latin America in the discussion of global living standards, the adaptation of the methodologies of Allen (2001) and Allen *et al.* (2011) was crucial<sup>6</sup>. By contrast, Dobado and García's (2014) preferred interpretation of the real wages ratios has no clear implications for living standards. For example, a higher ratio of kilograms of meat as real wage has very different implications for living standards in Buenos Aires than in Potosí. An increasing grain-wage ratio may suggest improving living standards, but does not solve the problems of changing family size, preferences or working days that Dobado finds problematic in our approach. Consequently, his simplified approach appears to have no clear advantage in determining living standards, and furthermore seems less likely to provide a unified assessment of living standards.

Also puzzling is Dobado's (2015, p. 47) demand for a more sophisticated measure of cost of living «to capture distinct features of the complex and heterogeneous nutritional patterns over the Early Modern Era in the cradle of the «Columbus exchange» and probably of the «consumer revolution» as well». Yet, he still promotes his approach as more accurate. The construction of more complete baskets is, by all means, desirable but unfortunately very difficult to implement in practice for long periods of time given the availability of prices and wage data so far<sup>7</sup>. Furthermore, this approach does not solve the problem of increasing shares in the different Latin American consumption baskets of the so-called exotic goods (Dobado-González 2015, p. 19). Looking at the summary table 1 in Dobado and García (2014), it also does not provide a clear picture of cost of living or living standards<sup>8</sup>. If we want to accurately measure cost of living, then we would need a more innovative methodology that incorporates income and substitution effects within the consumption baskets but at the cost of compromising international comparability<sup>9</sup>.

<sup>5</sup> Dobado and García (2009) did not include sugar as part of their analysis.

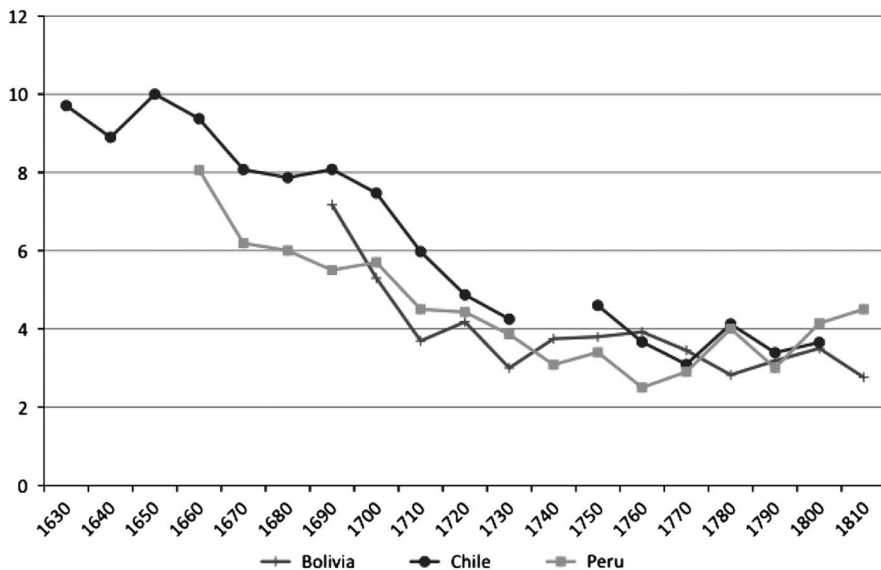
<sup>6</sup> This methodology is indeed imperfect as noted by Allen (2001).

<sup>7</sup> For example, Arroyo Abad (2013, 2014); Challú and Gómez-Galvarriato (2015) estimate the traditional «bare bones» basket and wider baskets as well.

<sup>8</sup> Moreover, Dobado-González (2015) uses the consumption baskets estimated by Brown (1992) in Arequipa to bring up a discrepancy of the trend of the cost of living in Lima in our work. (The implied decrease in the cost of living is overstated as the author quoted the basket in pesos instead of silver grams.) Hence, it suggests that the use of baskets is convenient after all.

<sup>9</sup> Irigoín (2013) uses this methodology for colonial Latin America. Zegarra (2011) applied lineal programming to calculate poverty lines in Lima at the turn of the 20<sup>th</sup> century.

**FIGURE 1**  
PRICE OF TEXTILES (LINEN, FROM FRANCE) IN POTOSÍ (BOLIVIA), SANTIAGO (CHILE) AND LIMA (PERU), 1630S-1810S (10-YEAR AVERAGE), IN REALES PER VARA



Source: Arroyo Abad *et al.* (2011).

As Dobado (2015) points out, the construction of a «bare bones» basket is data intensive. We noted this weakness that the different sources do not allow us to have a balanced panel: «price and wage data can be quite patchy:» (Arroyo Abad *et al.* 2013, p. 163). To overcome this problem, we resorted to different techniques, from direct interpolation to use of relative prices between locations. The latter, in particular for textiles, appears to be problematic for Dobado (2015, p. 43) as he argues that «Using prices from Lima (the commercially active and coastal capital of the viceroyalty) «to interpolate missing price data for Potosí» — a remote mining town, located more than 2,000 miles away from Lima and closer to northern Argentina's markets — does not seem to be fully justified.» The 2011 version of our paper presents evidence on the evolution of the price of imported textiles for Santiago de Chile, Potosí and Lima, which shows comparable trends and levels (see Figure 1; Arroyo Abad *et al.* 2011)<sup>10</sup>.

While our estimations are a first approximation, Dobado (2015) maintains that the incorporation of anthropometric evidence, in particular heights,

<sup>10</sup> The 2012 published version of our paper does not, unfortunately, include this graph due to space constraints; however, Dobado-González (2015) does cite our working paper as a source.

should be part of the discussion<sup>11</sup>. The assessment of living standards through biological welfare is indeed a flourishing field in Latin American history, as the edited volume by Salvatore *et al.* (2010) epitomises. However, Dobado's work fails to explain how stature fits within the framework of measuring living standards in colonial Latin America. As Steckel (1995) points out, real wages look at market outcomes, while heights provide information on net nutrition and inequality. In particular, Steckel (1995) presents several episodes of declining stature in the presence of economic growth with increasing mortality rates in pre-modern societies. Given the prevalence of epidemics during colonial times and the sources of heights being traditionally from militia, it is only fair to discuss the limitations of this approach as well. Thus, absent further argument, the role of height in living standards is unclear.

In summary, Dobado-González (2015) may well be interested in something other than international comparisons of living standards. In that context, his criticisms may have some validity. However, since our interest is precisely in these comparisons, our methods seem to have clear advantages over his. Having said that, this discussion brings to light the need for more research to assess the evolution of Latin America's living standards in history. As historians and economic historians venture more to archives, we will be able to construct better indicators that will undoubtedly revise and expand our state of knowledge so far. Studies that span from colonial times to the long 19<sup>th</sup> century will only help us to understand why, how and when Latin America fell behind.

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<sup>11</sup> Our results are consistent with existing anthropometric data; however, contrary to Dobado-González's (2015) claims we do not have our own data set.

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