

Population and Economy in Nineteenth-Century Queretaro: New Estimates  
Of Output and their Relation to Demographic Change

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## Introduction and Summary of Findings

José Antonio del Raso (1780-1848) was born in Puebla, but spent forty years, two thirds of his life, in Querétaro. He had been the administrator of the hacienda “San Cristóbal” in nearby Acámbaro. He also held positions in the *ayuntamiento* of the city, in the departmental Assembly, and in the National Congress. He briefly served as interim Governor in 1846. In the judgment of Simon Miller, the rather remarkable, not to say unique report that he presented on the economy of the state of Querétaro in 1845 has the ring of authenticity.<sup>1</sup> With certain qualifications, I consider Miller’s judgment quite accurate. Raso knew what he was talking about. If we take his report at its word, we shall certainly need to rethink the questions of levels and rates of population and income growth in the early nineteenth century. If Querétaro was typical—and, admittedly, there was no reason to think it was and much reason to think that it wasn’t—there was no sustained economic depression in Mexico in the early nineteenth century. Population growth and per capita income levels were then much higher than we are accustomed to thinking.

What, then, are we to make of his statements about the state of production in the department of Querétaro around 1840? At first glance, however long his experience in the region and however careful his qualifications about the value of indicators like the *alcabala* as indicators of production, Raso had his biases. Raso was, in the politics of the era, a thorough liberal and an anti-Santanista. In a comprehensive denunciation of José María Gutiérrez Estrada’s monarchical project for Mexico, Raso styles himself “*un republican exaltado*” and spares no effort to demonstrate that Mexico was fit material

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<sup>1</sup>*Notas estadísticas del Departamento de Querétaro...Año de 1845* (México, 1848); Miller, Simon (1983) *Agrarian capitalism in central Mexico: from hacienda to rancho in the state of Queretaro, 1845-1900*, p. 30. Durham theses, Durham University. Available at Durham E-Theses Online: <http://etheses.dur.ac.uk/7584/>

for a republic, and should in no way be thought to have retroceded morally, materially or politically since declaring independence.<sup>2</sup> To make his point, he turns first to population figures. From 1793 to 1820, Raso says, population in Mexico had grown by 1.6 million persons. From 1821 to 1840, he continues, the growth in population was 2.6 million people. Rather presciently, he concludes economists consider this improvement “attributable to the goodness of institutions.” The first figure is actually pretty conventional. It essentially follows what Robert McCaa terms the “Revillagigedo-Navarro-Official” population trajectory.<sup>3</sup> But from 1820 to 1840, the growth appears to be too high, exceeding the course of the official or conventional series by nearly 600,000. Relative to McCaa’s new estimates for 1840, Raso’s is about 1.4 million persons higher, or well in excess of McCaa’s revised totals. But by 1850, McCaa’s figure and the conventional series are about the same. He argues that as far as population is concerned, he “would half the commonly accepted growth rate for late colonial times [and] double that for the early republic” largely because of a decline in the mortality rate in the early Republic.

It is hard to know exactly how Raso arrived at these totals, other than to speculate, like McCaa, that they were based on a projection that assumed declining mortality. As we shall see momentarily, the presumption of declining mortality is correct, at least to the extent that Raso based his calculations on population data coming from nineteen parishes and vicarages in the department of Querétaro. If he simply extrapolated to Mexico as a whole, the spirit, if not the precise conclusion, agrees with McCaa’s desire to raise early nineteenth century population growth rates.

About agricultural production, Raso is equally assertive. While he ventures no direct estimates for Querétaro in his attack on monarchy, he concludes, based on the tithe, that agricultural production

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<sup>2</sup> [José] Antonio del Raso, *Refutación del proyecto monárquico-extranjero de Don José María Gutiérrez Estrada* (México, 1840), pp. 13-14.

<sup>3</sup> Robert McCaa, “The Peopling of Mexico from Origins to Revolution,” in Michael R. Haines and Richard H. Steckel, *A Population History of North America* (New York, 2000), pp. 278-279.

in adjacent Guanajuato had grown 60 percent from 1827 through 1831.<sup>4</sup> In his *Notas Estadísticas*, however, he observes that the tithe in Querétaro in the late 1820s was about 75 percent of what it had been at the turn of the nineteenth century, large enough to remark that the state of agriculture there was now “approaching the flourishing state that the capitalists had brought it to in other [earlier] times.”<sup>5</sup> Again, he explicitly contests the notion of decay, dismissing it as unwarranted. But even here, we are largely forced to rely on literary sensibilities—our own, or Raso’s. for validation. The principal observation of official bodies such as the *Dirección General de la Industria Nacional* in the early 1840s was that Mexico’s agrarian problem, at least as far as cereal production was concerned, was abundance, not scarcity. The argument was that low prices followed from abundance—an excess of supply—rather than a deficiency of demand, something only export markets could remedy. Yet there is little hard data and only the occasional anecdote to support the contention. So, from the standpoint of systematic analysis, we are back to square one.<sup>6</sup>

Fortunately, Raso, unlike one of his successors, Juan María Balbontín, understood the value of systematic observation. It is on the basis of the data he provides that we may try a somewhat less casual analysis of the demography and economy of the state of Querétaro in the early 1840s. As the pioneering work of European demographic historians has emphasized, it is impossible to study one without understanding the other, but the standards for doing so are rather exacting, at least in terms of serial data. Here, then, is the value of Raso’s work. Accurate or not as he may be, Raso generally, if not inevitably, assumes a critical attitude toward the data, discloses his sources, and makes the nature of his

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<sup>4</sup> Raso, *Refutación*, p. 14.

<sup>5</sup> *Notas Estadísticas*, pp. 40-41.

<sup>6</sup> For example, *Memoria sobre el estrado de la agricultura e industria de la República en el año de 1844* (México, 1845), pp. 4-5, 10.

assumptions clear. It is on that understanding that we proceed. When we do, we come to the following (very) tentative conclusions:

- (1) From 1827 through 1844, the population growth rate in the state or department of Querétaro was approximately 3.5 percent per year. I make no assertion that such an elevated rate was representative of the country as a whole. That, obviously, is not only unlikely, but impossible. Thus, Querétaro was different, if not unique. The overall population growth rate in the department was high, but extreme caution should probably be used in interpreting these results. Based on parish registers, they likely distort vital rates for the indigenous and mixed blood populations, although to what extent is not clear
- (2) Population growth was driven mostly by natural increase. In-migration was of lesser consequence.
- (3) Unlike in other so-called “high pressure” demographic regimes, especially in Europe, commercial activity seems to have affected fertility more than any other variable. Epidemics continued to create substantial mortality shocks even as the crude death, while high, slowly declined..
- (4) Given the considerable uncertainty in gross output estimates for Mexico as a whole, it remains somewhat uncertain as to whether we should consider output in this region high, or lower than it might have been. In nominal terms, per capita income in the 1840s was in the range of 90 to 100 pesos. For Mexico as a whole, the firmest estimate we still have is, one way or another, that of José María Quirós, normally dated 1817. That would be around 38 pesos, or rather less than half of Querétaro’s.
- (5) On the other hand, and perhaps suspectly, such a level of output was achieved in the face of an extremely high dependency ratio (91.8), and a labor force participation rate that appears implausibly low (about 30 percent), especially by comparison with what is known of the United States at the time. Indeed, the low participation rate squares more easily with low income levels in Mexico because it suggests that the problem was that not enough people worked because many were simply too young to do so. If the hypothesis of very slow economic growth in the nineteenth century is to be believed, slow growth was the result of demography, not transportation costs or “feudalism in the

- superstructure,” however consequential these may or may not have been. This actually makes sense because neither of these factors changed much with Mexican independence. However, if McCaa is correct, declining mortality did occur, and in the face of elevated fertility, population did grow.
- (6) Whatever the economic consequences of the Insurgency of the 1810s were—and it has never been clear that these were any more than short term other than in silver mining—the demographic effects were practically over by 1844, although they still would have been in evidence a decade earlier. Such cohort effects may well explain the abundance of literary evidence suggesting that the Mexican economy experienced an upturn in Michoacán and the Bajío by the 1840s. The extent to which this was or was not associated with a revival of mining in Guanajuato is simply unclear. Changes in mining output have inevitably been described as largely exogenous in origin. Perhaps this was less true than we think.

#### Analysis of Raso’s Data

It is probably wisest to begin at the beginning, and to look at the overall structure of the population in the department at the time of Raso’s writing. He provides ample data with which to do this, although the ages by which he defines cohorts are not ideal. Still, once we proceed, the results are quite suggestive. Most importantly, they appear to make historical sense.

Figures One and Two approximately here

In Figure One, we construct a basic population pyramid from Raso’s data<sup>7</sup>. The first fact apparent is how young the population is. Nearly 44 percent of the department was 12 years of age or

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<sup>7</sup> Raso, *Notas Estadísticas*, p. 114.

younger. While what we have is not identical to either an idealized Stage 1 or Stage 2 population pyramid, its profile is essentially concave and the overall resemblance is reasonable enough. Both the birth and death rates are high, but mortality is falling. In this instance at least, so is fertility, although not quite so quickly, so natural increase is still relatively high. The crude birth and death rates (CBR and CDR) are graphed in Figure Two, and are calculated directly from the parish level data supplied by Raso.<sup>8</sup> In the resulting pyramid, we are looking at something like a hybrid version of Great Britain in the eighteenth and early nineteenth centuries, which is perhaps not completely surprising. If any region in Mexico were more advanced economically than the rest, it would have been the Eastern Bajío, something I take to be one of the underlying messages of the work of David Brading<sup>9</sup>. We will consider shortly why this was so, but insofar as one region in Mexico, other than Puebla, was in any position to begin the process of industrialization, it was Querétaro, a region whose early experience with textile manufactories is well known.<sup>10</sup>

One of the truly striking features of the pyramid is the sharp contraction the cohort in the base undergoes as it passes to the age of 7. Undoubtedly, much, if not most of the decline could be attributable to death in the first year of life, whose rate in 1877 was calculated at 213 per 1,000. But Demetrio Mejía, the proximate source of this figure, adds that elevated mortality in children in Mexico until the age of 10 was the rule, which seems to correspond to what we have here.<sup>11</sup> In Querétaro, where

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<sup>8</sup> Raso, *Notas Estadísticas*, p. 100.

<sup>9</sup> Brading, *Miners and Merchants*, pp. 223-233.

<sup>10</sup> Richard J. Salvucci, *Textiles and Capitalism in Mexico. An Economic History of the Obrajes, 1539-1840* (Princeton, 1989), pp.

<sup>11</sup> Demetrio Mejía, *Estadística de la mortalidad en México* (México, 1879), p. 19.

the measure was made a third of a century earlier (1844), the death rate in the first year of life was 230 per 1000.<sup>12</sup>

The second feature that might be emphasized is the unexpectedly large reduction in the male cohort ages 50 to 60. Males of this age were born between 1784 and 1794, which is to say, in 1810, when the Insurgency broke out, they would have been between the ages of 16 and 26. The cohort of males aged 60 to 70 would have been born between the years 1773 and 1783. In 1810, they would have been between 27 and 37. There is no point in speculating how much of an impact the Insurgency itself had because both cohorts would have been subject to the great famine year of 1786, where estimates for Michoacán conclude that as much as 15 percent of the population was carried away by famine and epidemic disease. Still, the implication that males between 16 and 37 in 1810 would have reached the ages of 36 to 57 in 1830, which must have approximated much of the prime working age population. The idea that these groups were decimated by war, famine and epidemic disease is an intriguing one. It might well suggest that slow economic growth in this period was essentially a function of a much-reduced labor force.<sup>13</sup> Clearly, this is not a conclusion but an agenda for further research, but it seems a potentially fruitful one.

The third feature of the pyramid worth emphasizing is the impression that the life expectancy of men exceeded that of women. This is also something that appears marginally characteristic of the population distribution here, but it is interesting that a similar finding exists for San Luis de la Paz in the

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<sup>12</sup> Raso, *Notas Estadísticas*, p. 113.

<sup>13</sup>The traditional age for the *levée en masse* for males was between the ages of 16 and 50. See, for instance, Anselmo de la Portilla, *Historia de la Revolución de México Contra la Dictadura del General Santa-Anna, 1853-1855* (México, 1993 [1856]), p. 74

eighteenth century. Nevertheless, as the most distinguished United States student of the demographic history of Mexico observed, [the history of life expectancy [in Mexico] remains largely unwritten.”<sup>14</sup>

Turning to Figure Two, a number of features attract our attention. If we look first to the CDR, shocks in 1830, 1833, 1838 and 1840 are all obvious. Indeed, Raso calls these years “calamitous” and calculates that overall population growth would have been reduced to 1.3 percent per year if these rates had in general prevailed. Smallpox (1830), colera (1833), measles (1838) and smallpox once more (1840) were the proximate cause of these spikes, and, not unexpectedly, they carried off a disproportionate number of children. Undoubtedly, the effect also partially explains the shrinkage of the cohort born in 1832 to 1837.<sup>15</sup>

In other historiographies of “high pressure” regimes, it has been customary to look at the association between real wages and vital rates, especially mortality. Unfortunately, the earliest maize price series for Querétaro that we have begins in the 1850s, and is no use to us in proxying real wages. But there does seem to be one intriguing possibility. This involves the use of the *alcabala* receipts. If there were ever anyone who makes a strong case against the use of the *alcabala* as a macro indicator, it is Raso, who suggests that the extent of fraud and contraband is so broad as to make variations in collections all but hopeless as commercial indicators.<sup>16</sup> While I have long believed that a thorough reading of Fonseca and Urrutia would disabuse historians of any illusions in this regard, one wonders if a variation of the tax, such as collections per head, might not be loosely interpreted as a crude measure of the “velocity” of commercial activity rather than its absolute level? One hesitates to push this too far,

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<sup>14</sup> McCaa, “Peopling of Mexico,” p. 274.

<sup>15</sup> Raso, *Notas Estadísticas*, pp. 104, 108.

<sup>16</sup> Raso, *Notas Estadísticas*, pp. 71-74.

but strictly speaking, the *alcabala* was a turnover tax, and turnover per head bears a passing resemblance to the velocity of money in the equation of exchange (i.e.,  $PQ/M=V$ ).

Figure Three here

Thus transformed, the annual *alcabala* collection per head is displayed in Figure Three, along with the CBR and the CDR. Casual inspection suggests some similarity between the intensity of commercial activity and the CBR, but something more than casual inspection is desirable. In this instance, we regress the *alcabala* per capita (ALCPERCAP), the CDR and the CMR on the CBR and examine the results. All series are difference stationary, which is the transformation in which the estimation occurs. OLS yields the following results for the period 1827 through 1843

$$CBR = -1.90 + 0.45ALCPERCAP^* - 0.07CDR + 1.55CMR^*$$

\*Significant at 90 percent

$$R^2 = .38 \text{ (adjusted for df)}$$

$$F^* = 4.32$$

$$DW = 2.51$$

Again, the results are interesting and probably sensible. Fertility is explained by both the general commercial environment and nuptiality. The CDR has begun to decline because, as McCaa emphasizes, vaccination, rudimentary measures to prevent the spread of infectious disease had begun to be taken in

the late colonial period, and vaccination, especially, was understood to be an efficacious measure. The CBR, perhaps surprisingly, had begun to fall, and if still high, was actually approaching (in Querétaro) that of the white population in the United States.<sup>17</sup> This is, perhaps, an indication of some underlying bias towards the white population in Raso's demographic, drawn as it was from parish registers in which one would immediately suspect an underrepresentation of both the *casta* and indigenous populations. This is probably of particular significance in interpreting the results of our calculations of the level of per capita income, which reflects not only what appears to be an (perhaps implausibly) small labor force, but which surely says little about indigenous people working on their own lands, or, as was quite common in the Bajío on the estates of landlords, or as sharecroppers.

The final figure derived from the data appearing in Figure Two is perhaps both revealing and instructive at the same time, which is nothing more than the population growth rate in the department that Raso's data imply. The numbers, as one might suspect, are very high, something on the order of 3.5 percent per year during the roughly seventeen years for which Raso provides data. Since natural increase accounted for the great bulk of population increase (2/3), the explanation must lie fertility and mortality, although there is no obvious to think that one should have been affected more than the other even if systematic differences in registration between the countryside and the city would not be unexpected. The CDR of the city of Guadalajara in the same period was about 50 percent higher (46.1), but urban mortality rates were inevitably higher in the nineteenth century because of unhealthy living conditions and crowding: the CDR during the cholera epidemic of 1833 in the city spiked to in excess of

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<sup>17</sup> The CBR in 1827 and 1828 is quite elevated is quite elevated. It may very well reflect the ending of a "bounceback effect" of the Insurgency in the region where there was a marked fall in fertility due to deferred female marriage, declining marital fertility, or both. This is a not uncommon phenomenon after wars and other major social upheavals. See John C. Caldwell, "Social Upheaval and Fertility Decline," *Journal of Family History*, 29:4 (2004), pp. 407-420.

100!<sup>18</sup> At this point, we might venture that Querétaro was different from elsewhere in Mexico, but in ways that are not precisely clear.

### New “Conjectural” Estimates of Output

It should be clear that population growth is closely related to economic growth. In the broadest sense, the growth of a country’s output can be accounted for by the growth in its labor force and the growth in labor force productivity. But finding historical data in Mexico to estimate either is a challenge.

Measures of economic growth in this period have therefore never followed this path. Rather, going back to José María Quirós in 1817, the general approach has been to estimate the consumption of representative agents. Making suitable, if arbitrary adjustments for public expenditure and private investment, totals are then obtained by inflating the agent’s expenditure by total population. The method was used by Raymond Goldsmith in approximating the size of output in the Roman Empire and applied to other cases as well. Unfortunately, economists typically view the results as mechanical, and any resulting similarity between expenditure and income so computed to be largely accidental. The fact that this is what the Mexican data for the period lend themselves is viewed as irrelevant.

One of the interesting features, perhaps the most interesting, of Raso’s data, is that it can, with little adjustment, be used to estimate the output of Querétaro in ways more consistent with economic theory. Similarly, with some effort, and with considerably less certainty, one can employ Balbontín’s

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<sup>18</sup> Lilia Oliver, “La mortalidad en Guadalajara, 1800-1850,” in Mario Bronfman and José Gómez de León, comps., *La mortalidad en México: niveles, tendencias y determinantes* (México, 1988), pp. 171-191.

data for the same purpose and for roughly the same period. The canonical approach to the problem in the °new° economic history of the United States was laid out in 1967 by Paul David. While there have been subsequent efforts by David and others to update his calculations, it seems appropriate to employ the original approach as a starting point for a Mexican calculation, specifically for the department of Querétaro in approximately 1844.<sup>19</sup>

David’s approach is relatively straightforward. It has been summarized in the following identity<sup>20</sup>

$$\text{GDP/P} = (\text{LF/P})[S_a(\text{O/LF})_a + S_n (\text{O/LF})_n]$$

Output per person ((GDP/P) equals the product of the labor force participation rate (LF/P) and output per worker. Output per worker in turn can be written as a weighted average of output per worker in agriculture (a) and nonagriculture (n) where the weights are each sector’s share of the labor force. The intuition is easy.

Finding numbers for Mexico, of course, is anything but easy, and even then, one anticipates a host of objections. For example, there must have been a substantial amount of household production that is simply not captured by David’s approach. Moreover, the idea of “labor force” assumes a pretty clear division between those who work and those who do not, or even an unambiguous definition of “work.” These are not trivial questions for nineteenth century Mexico, but they cannot be resolved here. Rather, we concentrate on following the result of David’s methodology to see falls out.

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<sup>19</sup> The state of Querétaro as a political entity was created by the Constitution of 1824 from the territory of the intendancy of Mexico. So any attempt to place preindependence estimates for the region on the same footing would be purely notional, albeit possible. See Edmundo O’Gorman, *Historia de la Divisiones Territoriales de Mexico* (2d ed., México, 1948 [1973]), p. 66.

<sup>20</sup> Peter C. Mancall, Joshua L. Rosenbloom and Thomas Weiss, “Conjectural Estimates of Economic Growth in the Lower South, 1720 to 1800, “ in William A. Sundstrom, Timothy V. Guinnane and Warren C. Whatley, *History Matters: Essays on Economic Growth, Technology and Demographic Change* (Stanford, 2003), p. 395

Remarkably, Raso, truly an underappreciated savant, provided data that can be used in the estimating equation. The calculations are tedious, but assuming no mechanical errors they produce a per capita income for Querétaro of 107 pesos. Using Balbontin's data for 1855, which require some aggregation and more manipulation, and are far less complete, yields a per capita income of 77 pesos. A geometric mean of both estimates produces a figure of 90 pesos. Again, that number is very high, and one is tempted to dismiss it as implausible or as some artifact of the data collected by Raso and Balbontín. But is it really?

Considering that Sánchez Santiró reports an almost stable nineteenth century consensus estimate of 36 to 43 pesos, what we have certainly seems an outlier.<sup>21</sup> On the other hand, the Querétaro figure is in the neighborhood of David's 1967 estimate for the United States in 1840, a date before which the acceleration of United States economic growth had really gotten underway. Are we really prepared to accept the fact that, for no obvious reason, output in two largely agrarian societies should have been so different, especially when we consider that Querétaro was one of the most economically advanced regions in Mexico?

In the textile industry in 1844, Raso calculated that average income was above 90 pesos, which he claimed had not changed much in 50 years.<sup>22</sup> For a work year of 300 days, that is a little in excess of two reales per day, which does not sound excessive. On the other hand, Raso's agricultural earnings (including a maize ration and income received in sharecropping) work out to about \$25 a year. Since Raso placed 40 percent of the work force in agriculture but only about 8 percent in manufacturing, the difference, presumably could be attributed to what he termed "rentiers," merchants, artisans, others in

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<sup>21</sup> Ernest Sánchez Santiró, "El Desempeño de la Economía Mexicana, 1810-1860: De la Colonia al Estado-Nación," in Sandra Kuntz Ficker, coord., *Historia económica general de México. De la Colonia a nuestros días* (México, 2010), p. 293.

<sup>22</sup> Raso, *Notas Estadísticas*, p. 66. The key table for providing data for the estimating equation is provided by Raso on p. 78.

urban occupations, and in the priestly, bourgeois, and professional classes found in the city of Querétaro, who comprised 50 percent of the labor force. So, logically, what Raso is describing a department whose average is high, but whose median must have been far lower. No one other than big landowners in the countryside had the sort of income Raso implied. But in the city and in the new industrial sector, which was almost, but not quite unique to the eastern Bajío, incomes were much higher. On the whole, the numbers may be a bit disconcerting, but viewed in this perspective, do not appear to be completely implausible. For one thing, the property qualification for voting under the Bases Orgánicas of 1843 was \$200 pesos per year.<sup>23</sup> While the point of the qualification was obviously to exclude the popular classes from voting, would it have really been necessary to set the threshold so high if most of the population subsisted on \$36 to \$43 per year? Moreover, if you asked a historian the question, where did the rich in Mexico typically live, the answer would be “in the cities.” And the poor? “In the cities, too, but in the country, for the most part.” Fundamentally, one might logically expect that a similar situation prevailed in and around Puebla as well, but beyond that—and the mining camps—incomes nearer what we commonly suppose, in the rough range of \$30 to \$40 dollars per year, must have prevailed for the better part of the nineteenth century.

Why do we say Querétaro was different? And, finally, why does any of this really matter?

First, Querétaro was a diverse environment, geographically and environmentally, but it was a relatively small area. One might hypothesize that Adam Smith’s famous precondition for economic growth, division of labor and specialization, were relatively more feasible there, although to be sure, Simon Miller emphasizes that the reduction in transportation costs effected by the railroad there was no less dramatic than elsewhere in Mexico. Second, from an early stage, in Querétaro (and, no doubt,

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<sup>23</sup> Bases Orgánicas de la República Mexicana, Art. 18  
<http://www.juridicas.unam.mx/infjur/leg/conshist/pdf/1842.pdf>.

Puebla), agricultural productivity was high enough to allow the release of labor to industry, and, at bottom, this is what was required to raise income. In fact, if we look at the department as a country, it produced an agricultural surplus in goods such as maize, beans, chickpeas and wheat, for “export”, which taken with the value of manufactures, almost precisely paid (1.7 million pesos) for the value of the department’s “imports.” (1.5 million pesos).<sup>24</sup> In David’s 1967 model, we find rising income and productivity depends on the intersectoral transfer of labor—the movement of resources out of agriculture and into industry, precisely what the department had a comparative advantage in. Third, the fundamental mechanism that governed growth in Querétaro was similar to the one that governed growth in the Lower South in the United States. Consider Mancall, Rosenbloom and Weiss’ conclusions for 1720 to 1800

Part of the reason why the per capita [GDP] figure rose so slowly, or not at all, is because population was growing rapidly and in ways that held growth in check.... Throughout the period the share of the population under the age of 10 was increasing.... [This] served to hold down and indeed decrease the labor force participation rate; the number of dependents was rapidly increasing. The population was growing by adding people who were not as productive as full-time workers. As a consequence, even though workers were becoming more productive, the impact of the improvement in productivity was muted because of the decline in labor inputs per capita....<sup>25</sup>

This sounds very much like the situation we have described for Querétaro. The LFPR data supplied by Raso yields a rate of barely 30 percent in the 1840s, which is even lower than that of the Lower South in 1800, that was 39 percent. Lest this sound outlandishly low, it is roughly comparable to the figure that David Brading supplied in his census of the Bajío in the late colonial period, (28.6 percent in the

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<sup>24</sup> Raso, *Notas Estadísticas*, pp. 80-82.

<sup>25</sup> Mancall, Rosenbloom and Weiss, “Estimates of Economic Growth,” p. 411.

Intendancy of Guanajuato) which indeed leads one to wonder, “But who was doing the work?” The answer, if our analysis tells us anything at all about Mexico, is not enough people to raise the growth of potential output.<sup>26</sup>

While we have attributed part of this finding in Querétaro to civil war, famine and epidemic disease, it does seem to resolve one outstanding paradox of the literature. Miller’s study of the agricultural economy in Querétaro emphasizes time and again that the hacendados thought that the principal problem was a shortage of labor, to which the solution was sharecropping. The age and dependency structure of the population we identify goes some way to explaining how landowners could complain of persistent labor shortage while the population was growing at 3.5 percent per year.

## Conclusions

While we have already summarized the principal findings of the paper, a few observations in order. This paper is a first step: it does not offer settled conclusions. But it is an attempt to bring the analysis of Mexican economic growth in the early nineteenth century more in line with the mainstream of work in other economic historiographies. It deliberately avoids discussions of the culture of capitalism, of modes of production, indeed, of most of the existing literature. This is deliberate. We will continue to regard the period before 1870 in Mexican history as a kind of black hole if we simply recapitulate what others have said without finding new data and exploring novel methodologies. A glance at current summaries of the literature, which largely cite each other, suggests the core of the problem.

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<sup>26</sup>Brading, *Miners and Merchants*, p. 229.

The second point to be made is equally obvious. We cannot continue to ignore what contemporaries have written if we are to do serious historical analysis. In that sense, the literature is quite striking because no one—not Raso, not Alaman, not Luis de la Rosa in his work on maize—saw an economic contraction worthy of the name “depression” that lasted from the Insurgency into the 1840s and beyond. Quite the contrary, virtually all these writers contrasted the situation in the countryside by the 1840s with what had existed a generation earlier. Virtually all identified recovery and indeed growth. While, of course, it is a truism that Adam Smith failed to see (or to describe) an Industrial Revolution that was ostensibly occurring around him, there is no need and no reason to ignore historical evidence. If Mexicans of the day were wrong, we should be able to prove it. Otherwise, as some historians are fond of quoting, “whereof we cannot speak we must be silent.” It is clear that the Insurgency brought a catastrophic contraction of production to Central Mexico, but by the 1830s or, at the latest, the 1840s, the costs of the Insurgency had been overcome.<sup>27</sup> For those who would respond the War with the United States then picked up where the war with the Spanish Empire left off, I would respond, think again. The war was nowhere near as costly to Mexico as the usual accounts suggest.<sup>28</sup> It is time to leave the first half of the nineteenth century as nothing but an unrelenting economic disaster behind. The work of other, younger historians is already pointing a different path to be taken.

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<sup>27</sup> Luis Jáuregui, “La Economía de la Guerra de Independencia y la Fiscalidad de las Primeras Décadas del México Independiente,” in Kuntz Ficker, coord., *Historia económica general de México*, pp. 247-248.

<sup>28</sup>Richard J. Salvucci, “Everyday Costs of War making: The Costs and Consequences of the Mexican War: A Mostly Northern View,” (unpub. ms), [https://www.academia.edu/3738851/v\\_2.0\\_Everday\\_Costs\\_of\\_Warmaking\\_The\\_Costs\\_and\\_Consequences\\_of\\_the\\_Mexican\\_War\\_A\\_Mostly\\_Northern\\_View](https://www.academia.edu/3738851/v_2.0_Everday_Costs_of_Warmaking_The_Costs_and_Consequences_of_the_Mexican_War_A_Mostly_Northern_View)



Figure One

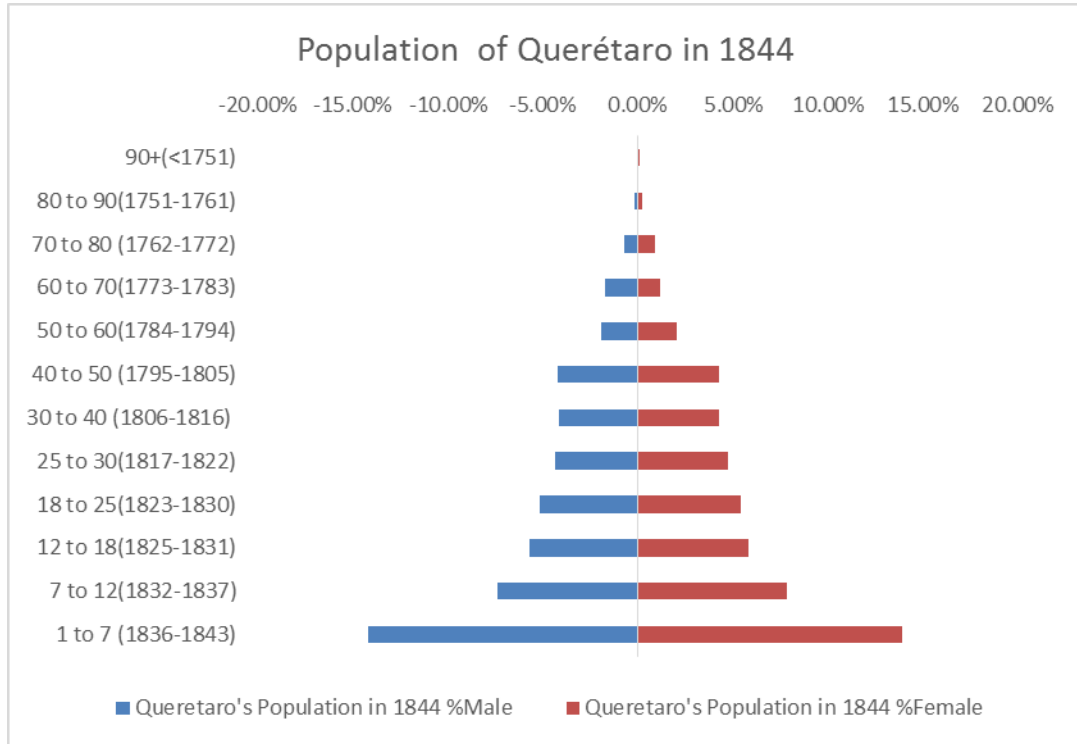


Figure Two

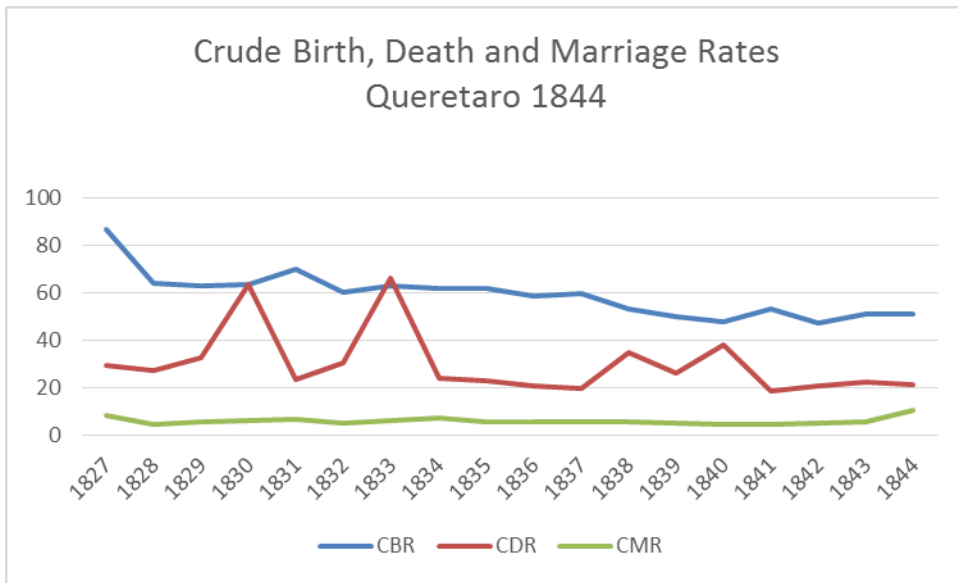


Figure Three

