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# Cuba and the Latin American Terms of Trade in the Nineteenth Century: Old Theories, New Evidence

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Linda K. Salvucci and Richard J. Salvucci

## **Cuba and the Latin American Terms of Trade:**

**Old Theories, New Evidence** Since the early 1950s, scholars from diverse regions and disciplines have analyzed the terms of trade of developing countries. The Latin American contribution to this discussion has been especially noteworthy. Raúl Prebisch, a “pioneer” in proposing a secular decline in the terms of trade for developing countries, was an Argentine whose career included a long association with the United Nations and with the Economic Commission for Latin America (ECLA). Prebisch’s thinking influenced an entire generation of economists from Latin America and elsewhere who were preoccupied by postwar economic concerns. Prebisch, along with Singer, relied upon the terms of trade to challenge the conventional notion that comparative advantage was a country’s best guide to the allocation of resources and hence to the international division of labor. Based upon our analysis, however, there is little empirical evidence that deteriorating terms of trade hindered Latin American growth at

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precisely the time (1820s–1870s) when large international disparities in income began to emerge. Whatever the causes for Latin America's "falling behind" in the nineteenth century might be, a secular deterioration in its terms of trade does not appear to be one of them.<sup>1</sup>

The theory of declining terms of trade for developing countries turned largely on differences in the degree of competition between industries in developed countries, or core, and those found on the periphery. Competition among producers of raw materials and foodstuffs—what Mokyr has called "survival of the cheapest"—drove prices down to marginal costs in the developing economies. But in developed countries, where departures from perfect competition characterized the evolution of manufacturing, prices would not necessarily fall to costs. The result was that the prices of primary goods produced on the periphery declined relative to those of manufactures produced in the core. For developing countries, free trade supposedly resulted in "immiserization" (or "immiserizing growth") rather than in increasing wealth. Hence, according to the terms-of-trade argument, developing economies should not favor free trade but advocate the protection of domestic industrialization instead. As Cardoso and Helwege point out, this theory served as one of the "most common rationales" for policies implemented after World War II.<sup>2</sup>

The economic disasters of the 1980s in Latin America (and the collapse of socialism in Central Europe after 1989) have led to a sweeping reassessment of interventionist policies—such as import substitution—grounded in a terms-of-trade perspective. Dependency theory, in particular, comes under close scrutiny from those who find little merit in its central notion of "unequal exchange." Haber and Packenham subject both the political and economic assumptions of dependency thinking to harsh and intensive scrutiny. Lal has included a discussion of the terms of trade

1 Gerald M. Meier and Dudley Seers, *Pioneers in Development* (New York, 1984), 175–191; Oreste Popescu, *Estudios en la historia del pensamiento latinoamericano* (Bogotá, 1986), 797–806; Enrique V. Iglesias, *Reflections on Economic Development: Toward a Latin American Consensus* (Washington, D.C., 1992), 10–11; Walter L. Bernecker and Thomas Fischer, "Rise and Decline of Latin American Dependency Theories," *Itinerario*, XXII (1998), 25–43.

2 Joel Mokyr, *The Lever of Riches, Technological Creativity and Economic Progress* (New York, 1990); Eliana Cardoso and Ann Helwege, *Latin America's Economy: Diversity, Trends, and Conflicts* (Cambridge, Mass., 1992), 89; John Spraos, *Inequalising Trade? A Study of Traditional North/South Specialisation in the Context of Terms of Trade Concepts* (Oxford, 1983), 21–69.

in a scathing characterization of what he terms “the poverty of development economics.” Since economists in recent years have generally characterized trade liberalization as an important adjunct to sound domestic economic policy, the moment is appropriate for a historical reexamination of the terms-of-trade question. Moreover, as Lindert observes, “The terms of trade are a key exhibit in any history of the role of foreign trade [and] developing better indices of the terms of trade for more countries and for earlier eras remains high on the research agenda in international economic history.”<sup>3</sup>

The recent publication of Bulmer-Thomas’ landmark economic history of Latin America also suggests that a fresh appraisal of the terms of trade would be both welcome and useful. Bulmer-Thomas argues that the failure of export liberalism in the nineteenth century led to slow growth and to a gap with the now-developed countries. Bulmer-Thomas assumes, counter to dependency theory, that the evolution of the terms of trade actually favored Latin America, since the price of such industrial wage goods as cotton textiles fell steadily after 1815. As a result, unsatisfactory growth in Latin America was not so much the consequence of low prices as it was of insufficient quantities—the export sectors there not being large enough to pull along domestic economies (producing mostly nontradeable agricultural commodities) that had extremely low productivity.<sup>4</sup>

Bulmer-Thomas’ argument is based mostly upon logical inference. What is absent is empirical support. At the very least, this article brings to the discussion new indices constructed from a variety of serial sources. We examine data from five Latin American countries. The data for Cuba and Mexico derive from our first-hand, ongoing research in archives and printed materials. The Cuban material, which is especially good, includes virtually all of the commodities that Cuba traded for much of the nineteenth

3 Stephen Haber, *How Latin America Fell Behind: Essays in the Economic History of Brazil and Mexico, 1800–1914* (Stanford, 1997); Robert Packenham, *The Dependency Movement: Scholarship and Politics in Development Studies* (Cambridge, Mass., 1992); Deepak Lal, *The Poverty of “Development Economics”* (Cambridge, Mass., 1985); Rudiger Dornbusch, *Stabilization, Debt and Reform: Policy Analysis for Developing Countries* (Englewood Cliffs, 1993), 83–99; Peter Lindert “International Economics and the Historian,” in Thomas G. Rawski et al. (eds.), *Economics and the Historian* (Berkeley, 1996), 214.

4 Victor Bulmer-Thomas, *The Economic History of Latin America since Independence* (Cambridge, 1994), 78–82.

century. The Mexican material is less complete but still provides a clear sense of changes in the terms of trade over the long haul, when Mexico's economic development was evolving. For Brazil, Argentina, and Peru, we are indebted to the research of Leff, Newland, and Gootenberg, respectively. The Brazilian data are as extensive as the information that we compiled for Cuba. Although the evidence from Argentina and Peru is suggestive rather than comprehensive, it lies well within the range that Bulmer-Thomas' economic history predicted. On the whole, the data about these five countries enable us to draw firm conclusions about the terms of trade in Latin America during the central years of the nineteenth century.<sup>5</sup>

**MEASURING THE TERMS OF TRADE** The most commonly calculated measure of the terms of trade, the net barter terms of trade (NBTT), is the ratio of an index of export prices to an index of import prices. In other words, the NBTT is an index of the relative price of exports. The point of dividing export prices by import prices is to express the price of a unit of exports in terms of a unit of imports. The frame of reference is the base year (always equal to 100), or the year against which comparisons are made. If the NBTT improves, or rises above 100, a unit of exports can purchase a unit of imports more cheaply, theoretically causing real income in the importing country to rise. If the NBTT deteriorates or falls below 100, the price of a unit of imports rises relative to a unit of exports, and real income in the importing country presumably falls. The difficulty with the NBTT is that it makes no allowance for the actual volume of exports. Yet, if the NBTT improves while the volume of exports falls, the economy will reap no benefit. For example, a hurricane may drive up coffee prices by destroying the crop, but higher prices (which would be reflected in the NBTT) cannot help producers who have no coffee to export.<sup>6</sup>

The income terms of trade (INTOT) address this difficulty. The INTOT measures the purchasing power of a given quantity of exports over imports. If the INTOT rises, a country's exports can finance a larger volume of imports. In other words, a country with a growing volume of exports will likely benefit more from

5 Nathaniel H. Leff, *Underdevelopment and Development in Brazil* (London, 1982), II, 80.

6 Meier, *International Trade and Development* (New York, 1963), 40-41.

trade than one with a shrinking volume of exports. To continue our coffee example, a country that can take advantage of rising coffee prices by producing more coffee will be able to purchase more imports.<sup>7</sup>

But even the NBTT and the INTOT have certain limitations. Imagine that a country's export prices are falling because of a development that makes those exports cheaper to produce. Suppose, for example, that unusually favorable weather leads to an exceptional harvest. Even though coffee prices may fall, the effect on producers is different since coffee is now cheaper to grow. In other words, the productivity of coffee growing has increased. The appropriate terms-of-trade measure in this case is the single factorial terms of trade (SFTT). The data required for calculating the SFTT are much more elusive than those required for the NBTT and INTOT. We have made some progress in calculating the SFTT for Cuba, but the data available to do so for the other countries in this study are scarce.<sup>8</sup>

**ESTIMATING THE CUBAN TERMS OF TRADE** We begin by looking at Cuba's NBTT—essentially a matter of dividing a weighted average of the price of sugar and other exportables (such as molasses, tobacco, coffee, and copper) by a weighted average of imports from the United States, Great Britain, France, and Spain (such as foodstuffs and simple manufactures). In so doing, we include the major commodities exchanged and Cuba's most important markets and suppliers. Since the United States, Spain, and Great Britain accounted for no less than 80 percent of Cuba's imports and exports between 1826 and 1887, an index constructed on the basis of Cuba's trade with these countries is both comprehensive and representative.

As followers of Prebisch might suppose, the Cuban NBTT indeed deteriorated, at the overall rate of 1.4 percent per year. Another way of making the case is to examine ten-year intervals beginning with 1826, that is, 1826 equaling 100. Within a decade,

7 Spraos, *Inequalising Trade*, 77; Meier, *International Trade*, 42–43.

8 Spraos, *Inequalising Trade*, 70–74; Meier, *International Trade*, 43. We do not present any calculations for the double factorial terms of trade (DFTT) for two reasons. The data required for the nineteenth century are hard to find, and trade economists often question the value of the DFTT for developing economies. See, for instance, Dominick Salvatore, *International Economics* (Upper Saddle River, N.J., 1995), 336–337, who calls the NBTT, INTOT, and SFTT “the most important [variants of the terms of trade].”

Cuba's terms of trade had fallen to 86. By 1846, they stood at 77; by 1856, 58, and by 1866, 44. They recovered slightly in 1876, rising to 51, and in 1884, the end of our series, the terms of trade were at 52. By this standard, virtually all the decline in the NBTT occurred between 1826 and 1866, a period during which they fell by more than 50 percent.

Presenting our calculations by decades does not change the picture appreciably. In the 1830s, the average terms of trade were 88; in the 1840s, 85; the 1850s, 61; and in the 1860s, 48. In the 1870s, it was up to 50, and in 1880–84, to 52. The largest decline measured annually came between 1842 and 1865, when the terms of trade fell from 105 to 40.

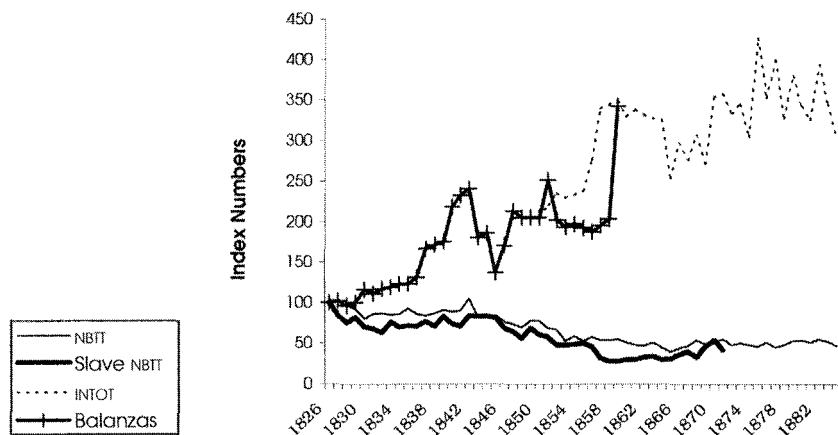
In essence, there were three temporal divisions in the nineteenth century: 1826 to 1841, 1842 through 1865, and 1866 through 1884, when our series ends. Historians of Cuba will note that these divisions correspond generally to the key stages of the sugar revolution and to the Ten Years' War. The NBTT is graphed in Figure 1, and yearly results appear in Table 1.

A question that sometimes arises concerns the effect of slavery and the slave trade on the Cuban NBTT. Since the trade was illegal, it seems impossible to compute the terms of trade making an explicit allowance for the price of slaves landed in Cuba. However, we can compute the NBTT by dividing the export price index by the price of slaves in Cuba, using slave prices compiled by Bergad, Iglesias García, and Barcia. The series, which appears in the column of Figure 1 labeled "slave" NBTT, differs little from the conventional NBTT, at least regarding the overall trend. The discrepancies are more pronounced beginning in the 1850s when a rapid rise in Cuban slave prices—much remarked upon by Bergad and his co-authors—occurred. These developments were perhaps related to the changing market for Cuban sugars entailed by Britain's shift to free trade in the middle 1840s and early 1850s. Even so, introducing slave prices into the NBTT does not markedly alter the Cuban results.<sup>9</sup>

Cuba's terms-of-trade series appears to confirm Prebisch's argument, since the NBTT fell by some 50 percent in 60 years. Nevertheless, it is by no means clear that these NBTT results are

9 Laird W. Bergad, Fe Iglesias García, and María del Carmen Barcia, *The Cuban Slave Market, 1790–1880* (Cambridge, 1995).

Fig. 1 The Cuban Terms of Trade, 1826–1884



definitive, or even compelling. We obtain a significantly different result from the INTOT, which did not fall during the period examined. To the contrary, despite periods when the INTOT fell, the overall trend of the INTOT is strongly positive. Again, using 1826 as the base year, we find that the INTOT had risen to 131 by 1836, to 171 by 1846, and to 340 by 1857. A sharp fall had occurred by 1867, when the INTOT was at 277, but it had improved to 400 by 1877. By the end of the series, in 1884, the INTOT was at 306.

When we present our results by decade, a similar pattern of improvement emerges. The INTOT doubles from 1826–1829 to 1840–1849; from 1840–1849 to 1860–1869, it increases by 50 percent. Another increase, to 358, occurs from the 1860s to the 1870s, declining from that level to 343 in the period 1880–1884. Figure 1 illustrates the INTOT's rise—at the respectable rate of about 2.5 percent per year. Even incorporating data from the oft-cited but problematic *Balanzas generales del comercio de Cuba* (the annual commercial summaries compiled by Spanish officials for Cuba) does not change the trend much. Although *Balanzas* totals between 1851 and 1859 diverge somewhat from the figures that we have derived from other sources, they too suggest that Cuba's INTOT increased steadily during the nineteenth century.



Table 1 The Cuban Terms of Trade, 1826–1884

	NBTT	SLAVE NBTT	INTOT	BALANZA
1826	100	100	100	100
1827	102	84	102	102
1828	97	75	96	96
1829	92	82	100	100
1830	80	70	116	116
1831	86	68	111	111
1832	87	63	117	117
1833	85	76	119	119
1834	86	70	123	123
1835	93	72	123	123
1836	86	71	131	131
1837	84	77	167	167
1838	87	71	172	172
1839	91	83	176	176
1840	89	74	219	219
1841	90	71	233	233
1842	105	84	241	241
1843	83	83	181	181
1844	84	83	187	187
1845	82	82	137	137
1846	77	69	171	171
1847	74	65	214	214
1848	70	56	206	206
1849	78	69	206	206
1850	78	61	206	206
1851	69	58	222	252
1852	67	47	236	203
1853	53	48	230	194
1854	59	49	234	198

These results are consistent with certain benchmark events in Cuban history. Large increases in the supply of sugar occurred throughout the nineteenth century; the impact of expanded cultivation and technological change was particularly marked in Cuba during the 1830s and 1840s. Joseph Crawford, the British consul general in Havana, confirmed this observation in 1844: "The increasing cultivation of this Island is almost astonishing. Indeed it would be quite so could it not be accounted for by the great accumulation of slaves and consequent formation of new estates." The decrease in the price of sugar and the increase in quantities traded were unambiguous measures of an escalating supply. None-

Table 1 Continued

	NBTT	SLAVE NBTT	INTOT	BALANZA
1855	53	50	239	193
1856	58	46	277	188
1857	54	32	340	196
1858	54	28	345	204
1859	55	28	349	343
1860	51	30	330	
1861	48	30	339	
1862	47	33	332	
1863	51	34	328	
1864	45	30	326	
1865	40	31	254	
1866	44	36	297	
1867	47	40	277	
1868	54	33	307	
1869	49	46	272	
1870	52	54	354	
1871	55	42	358	
1872	48		334	
1873	50		345	
1874	48		305	
1875	46		427	
1876	51		353	
1877	45		400	
1878	48		328	
1879	53		380	
1880	54		342	
1881	51		326	
1882	55		394	
1883	52		346	
1884	48		306	

theless, because the demand for Cuban sugar was price elastic, as supply increased and prices fell, these changes were more than offset by increases in quantities demanded. An argument dependent solely upon the NBTT fails to reckon with large increases in the volume of Cuban exports brought to market. Likewise, the NBTT does not measure changes in the productivity of the export sector that were responsible for driving Cuba's export prices down.<sup>10</sup>

10 Joseph T. Crawford to Lord Aberdeen, Havana, March 8, 1845, FO72/682, Public Record Office [hereinafter PRO], Kew, UK.

Further observation by contemporaries confirms this point. Charles David Tolmé, the British consul in Havana in 1834, reported that sugar exports had increased dramatically after 1826 and that “production [had] not yet reached its maximum in this Island.” To what did Tolmé attribute this expansion? “Improved systems of elaboration, new facilities of transport, the permission of exporting direct to foreign countries . . . the reduction of the [Cuban] export duty . . . the removal of a tax formerly levied on the internal trade, the increase of capital and consequent decline of interest, and many other circumstances enable the cultivation of sugar with profits and even afford encouragement for laying down new plantations notwithstanding the present low price of sugar.” This last phrase, “notwithstanding the present low price of sugar,” is significant. It suggests that improvements in productivity more than compensated for falling sugar prices. In other words, Cuban producers increased supply by operating more efficiently.<sup>11</sup>

The British consuls in Havana were shrewd. They grasped the notion of the single factoral terms of trade, which adjust the NBTT for changes in the productivity of inputs in the export sector. As Spraos explains, the percentage change in the SFTT is the unweighted sum of the percentage changes of relative prices and productivity. If the SFTT improves, it indicates that the NBTT fell because of a growth in productive capacity. In other words, the price of Cuban exports fell because of increases in supply rather than decreases in demand. This phenomenon is not unlike the fall of cotton textile prices during Britain’s Industrial Revolution.

Table 2 contains data, however crude, to make the relevant SFTT calculations for 1826, 1847, and 1862. Our results are suggestive. If we adjust the NBTT for changes in the productivity of labor in the export sector (by multiplying the NBTT by an index of productivity change), virtually no change is evident in the SFTT between 1826 and 1847. A very sharp fall takes place, however, between 1847 and 1862. That is, the purchasing power of a unit of labor in the export sector remained constant between 1826 and 1846—the deterioration in the NBTT notwithstanding—but declined sharply thereafter.

11 Tolmé to Lord Palmerston, Havana, August 25, 1834, FO 72/431, PRO.

Table 2 The Cuban Single Factoral Terms of Trade

1827	100
1846	99
1862	61

Using these estimates, we advance the proposition that the growth of the sugar economy in Cuba between 1826 and 1846 was hardly immiserizing. Even though Cuba shared its productivity gains in the export sector with the rest of the world, Cuba (or perhaps more precisely phrased, the owners of Cuban slave labor) suffered no setback in trade. Between 1847 and 1862, however, the evidence suggests otherwise. In this era, expansion of sugar appears to have hurt Cuba, even though the productivity of the export sector increased. During these later years, the deterioration in the NBTT was too large to be offset by further gains in labor productivity. The Cuban sugar planters, their slaves, or both probably felt the pinch of falling prices. Although we have no data with which to calculate productivity change after 1862, on the basis of the SFTT, the case for immiserization is, at best, inconclusive. Falling sugar prices damaged the Cuban economy, but not until the late 1840s. The clearest conclusion is that Spain, France, Great Britain, and the United States all shared in Cuba's productivity increase; Cuba benefited as well, although to a lesser extent than indicated by the INTOT.

**HISTORICAL INTERPRETATION OF CUBA'S TERMS OF TRADE** The Cuban experience may seem familiar, particularly to those who have followed the debate about the economics of African-American slavery in the southern United States. The long-standing notion that U.S. slavery was an institution fated to die a natural death (due to the rising price of slaves and the falling price of raw cotton) was eventually overturned by economic historians who emphasized the high productivity of gang labor on the plantations. The data assembled herein suggest that similar forces were at work in Cuba, albeit imperfectly.

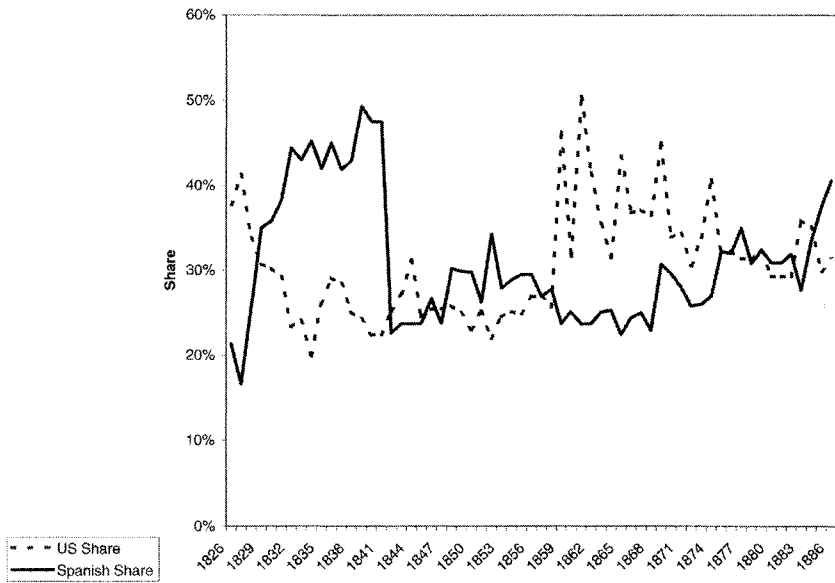
However, the Cuban terms of trade tell another story, namely, the competition between Spain and the United States for commercial predominance in Cuba that emerged not during the

last third but during the first third of the nineteenth century. Foner and other scholars have produced political narratives that implicitly argue that the United States–Cuba trade was driven largely by domestic political and diplomatic considerations. To be sure, the Narciso López expedition undoubtedly had something to do with the mere 1,500 barrels of U.S. flour sent to the island in 1853. However, our terms of trade series indicates that the best predictors of bilateral trade between Cuba and the United States are Peninsular politics, in general, and Spanish protectionist policies regarding commodities like flour, in particular. Trade policies imposed by Spain upon its most valuable remaining colony appear to have influenced the value and composition of Cuba’s foreign trade dramatically. Cuba’s imports from both Spain and the United States strongly suggest that trade with the United States and Spain involved a degree of substitution. Statistically, Spain’s share of the Cuban import market “predicted” the U.S. share; a 10 percent rise in the Spanish share depressed the share of the United States by about four percent.<sup>12</sup>

In the earliest period of our series, from 1826 through 1841, the United States had the lion’s share of Cuba’s import market. The share of goods from the United States in Cuba’s market fell substantially after 1841 and remained relatively stable (from 20 to 30 percent) through c. 1877, or roughly until the end of the Ten Years’ War (1868–1878). At this point, the United States overtook Spain once more, pushing Spanish trade, which had been dominant since the late 1850s, to the side (see Figure 2).

In general, Cuba’s relations with its principal market, the United States, produced a visible trade surplus for Cuba. From 1821 through 1898, only 1828, 1829, and 1845 saw exports from Cuba fall below the level of visible imports from the United States. The overall deterioration of the trade balance of the United States with Cuba occurred at an average rate of slightly more than 2 percent per year when a trend line is fit to the ratio of visible U.S. exports to imports. The trade balance was extremely sensitive to variations in the level of tariff protection imposed upon Cuba by Spain. For example, a rate increase in 1835 depressed the ratio of exports from the United States to imports from Cuba by 30

12 Philip S. Foner, *A History of Cuba and Its Relations with the United States* (New York, 1962). The calculations and data that support this discussion are drawn from Linda K. Salvucci, *Ironies of Empire: The United States–Cuba Trade under Spanish Rule*, Chapter 5 (in progress).

*Fig. 2* United States and Spanish Share of Cuban Imports, 1826–1886

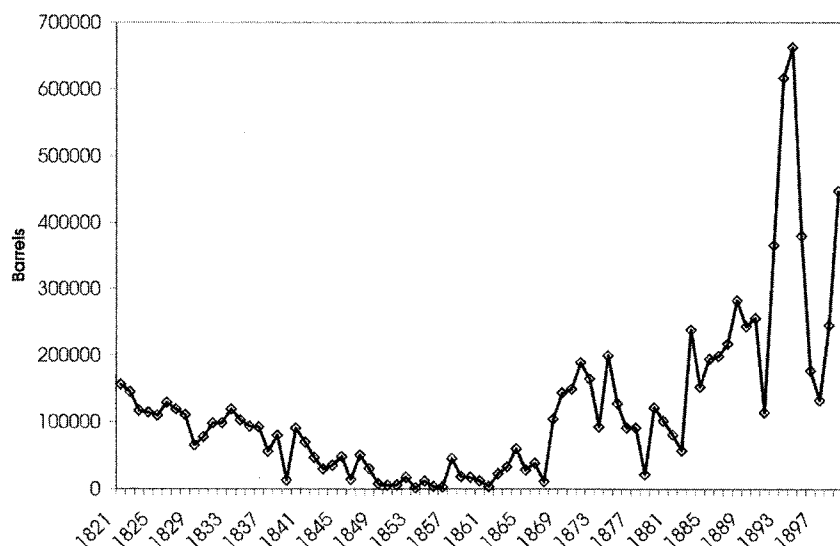
percent. Spain's revisions to the tariff in 1849 had an even larger impact, driving down the ratio by 70 percent. Under the circumstances, it is hardly surprising that the U.S. deficits increased throughout the course of the nineteenth century. Moreover, these changes were undoubtedly connected with the use of revenues from Cuba to support both the Spanish monarchy and an expansion of Spain's military in Cuba, which was provoked by an increasingly aggressive annexationist movement in the United States.

From its origins in the eighteenth century, the cornerstone of the United States–Cuba trade had been wheat flour. In absolute terms, the recorded volume of U.S. flour had peaked at the beginning of the nineteenth century, between 1807 and the early 1810s. It would not again reach comparable levels until the 1860s and early 1870s. In Cuban per capita terms, U.S. flour exports would not again reach the volume attained in the 1810s until the early 1890s. Given that the United States was rapidly becoming an international supplier of grain, and that population growth in

Cuba implied a growing demand for grain, what explains this dramatic change in the composition of trade?

Detailed analyses of the data discover that the recorded volume of annual U.S. flour exports to Cuba started to drop after the 1820s (see Figure 3). Using the 1820s as a base (1820–29 = 100), the 1830s fall to 74, the 1840s to 29, and the 1850s to 12; the 1860s show a resurgence to 52. From a recorded high of 156,000 barrels in 1820/21 (trade years overlapped calendar years in the export series), there were slight fluctuations in the downward trend to 1827/28 when Cuba exported 111,000 barrels; in 1828/29, the number fell precipitously to 65,000. Annual fluctuations marked most of the 1830s, capped by another sharp drop at the end of the decade (13,000 barrels in 1838/39). A similar pattern holds for the 1840s, a mere 5,000 barrels being recorded for 1849/50. Flour imports from the United States continued to plunge in the 1850s; this decade represents the nadir of the trade. Overall, the volume of flour shipments to Cuba fell by 9.7 percent per year until 1852/53. The Civil War in the United States notwithstanding, the trend had already started to reverse in the late 1850s. Between 1853 and 1898, including the period of the Ten Years' War, U.S. flour exports to Cuba (in barrels) increased 8.8 percent per year. This reversal coincided with the consolidation of the Liberals' power in Spain, though not until the Sexenio Democrático (1868–1874) did wheat flour from the United States recover any significance in the Cuban market.

It has long been fashionable to view Spain as weak and ineffectual in its desperate, or passive, attempt to retain Cuba and Puerto Rico in the nineteenth century. However, as a close examination of U.S. flour exports to Cuba demonstrates, patterns in the United States–Cuba trade correlate reasonably well with Spanish efforts to disrupt established and rational patterns of exchange. Declining U.S. flour exports to Cuba in the late 1820s correspond with Spain's last hurrah on the mainland—a failed attempt to recolonize Mexico. Instead of turning to U.S. suppliers to feed the influx of Spanish troops (as during the Revolutionary and Napoleonic Wars), Spanish administrators shunned the higher-quality, cheaper grain from the nearby United States. During the 1830s and 1840s (actually 1832, 1834, and 1849), Spain levied prohibitive duties on American flour. Their effect was substantial; they depressed United States exports of flour materi-

*Fig. 3* United States Wheat Flour Exports to Cuba, 1821–1898

ally. Spain had attempted such selective exclusion decades earlier, but only sporadically and half-heartedly. Officials on the scene in Cuba during the 1780s and 1790s often ignored the duties. Yet, in the 1830s, Spain made a sustained and consistent effort to enforce compliance. Moreover, for the rest of the 1840s and throughout the 1850s, the volume of Spanish wheat flour exported to Cuba nearly quadrupled, while the volume of U.S. flour exported to Cuba fell by 84 percent, reaching its lowest levels of the entire century in the 1850s. As Crawford observed, “The enormous duties still exacted upon all flour excepting Spanish is an inducement too great to be overlooked [by potential smugglers].” A decade earlier, Tolmé had specifically alluded to the near exclusion of the United States while discussing the distorting effects of Spanish commercial policy on Cuba’s foreign trade.<sup>13</sup>

In other words, the terms of trade for Cuban sugar were only a part of the planters’ problems. They and, to some extent, merchants from the United States, remained at the mercy of Spanish imperial administrators who crafted commercial policies

13 Crawford to Aberdeen, Havana, March 8, 1845, FO72/682, PRO.



that favored metropolitan interests and agendas. It would have taken something more than the recasting of Cuba's sugar exports to address the difficulty. The Cubans were not the masters of their own destiny.

**THE CASE OF MEXICO** Spain managed to distort the natural trading patterns of its remaining colony with some success, but what happened to the former colonies that gained independence in the 1820s? Mexico, Spain's most valuable colony, provides an instructive comparison for our purposes, since its economy was much less open than Cuba's.

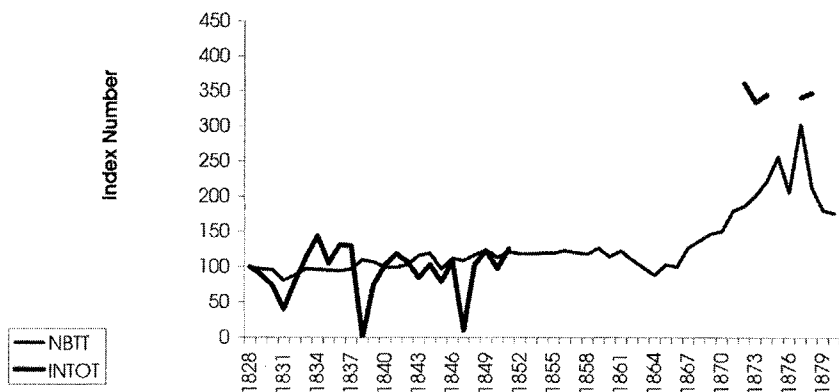
The Mexican NBTT appears in Figure 4 and Table 3. Like its Cuban counterpart, the Mexican series is trade-weighted and adjusted to annual changes in the composition of trade. Unlike Cuba's, Mexico's NBTT does not deteriorate between 1828 and 1881. In fact, for most of the period, its NBTT increased at the steady, if unspectacular, rate of 1.4 percent per year. During one period, however, Mexico's NBTT improved dramatically. In 1866, when it stood at 100 (1828 = 100), the NBTT began to rise; it doubled by 1873. By 1877, a further improvement of 50 percent had taken place before the series began to head downward. The coincidence of this episode with the restoration of republican government after the fall of Maximilian (1867) is striking. It may well explain Mexico's growing interest in international markets during the latter part of the nineteenth century.<sup>14</sup>

Yet, these findings must be viewed with caution. Much of the improvement in the NBTT reflects better terms of trade with France, which had a rapidly growing share of the Mexican market. It also reflects extraordinarily favorable prices for Mexican exports to France, such as vanilla, mother of pearl, and hides, which had become more expensive because of severe drought in northern Mexico. Paradoxically, France, which Mexico had defeated on the fields of combat between 1862 and 1867, enjoyed its greatest success as a market for Mexican products only after Maximilian's death.<sup>15</sup>

14 William Schell, Jr., "Trade and Markets, 1821-1910," in Michael S. Werner (ed.), *Encyclopedia of Mexico: History, Society and Culture* (Chicago, 1997), II, 1431-1436.

15 *Memoria de Hacienda . . . 1879-1880* (México, 1880), 567, confirms this observation precisely, dating the beginnings of a surge in French trade to 1858. Enrique Florescano and Susan Swan, *Breve historia de la sequía en México* (Veracruz, 1995), 56-58.

Fig. 4 The Mexican Terms of Trade, 1828–1881



Examining the Mexican INTOT generally confirms this impression. Between 1828 and 1851, the INTOT was generally flat, with the obvious exceptions of 1838 and 1847, when wars and foreign blockades annihilated trade through Veracruz. We have no useful data for the period between 1857 and 1871, but in 1872, the INTOT was 361 (1828 = 100). It stood at about 400 by 1881. The purchasing power of Mexican exports had increased substantially during the initial presidency of Porfirio Díaz.<sup>16</sup>

Unfortunately, we cannot calculate the factorial terms of trade for Mexico because we have no nineteenth-century data on the productivity of Mexican labor in silver mining, the most important source of exports for much of the century. Even so, we can make a crude attempt to estimate the importance of international trade in the Mexican economy by holding the terms of trade constant. According to Coatsworth, the ratio of international trade to national income in 1860 was about 10 percent, or roughly 30 million pesos. Since the average NBTT c. 1860 was about 120 (1828 = 100), the improvement in the terms of trade between 1828 and 1860 “saved” 6 million pesos; that is  $.2 \times 30$  million = 6 million pesos. The population of Mexico being more than 8 million, the improvement in the NBTT represented less than a peso per person (6 million pesos/8 million persons = .75 pesos per

16 The INTOT for 1873 through 1881 is adjusted for the depreciation of silver in the international market.

Table 3 The Mexican Terms of Trade, 1828–1880

	NBTT	INTOT
1828	100	100
1829	97	89
1830	96	74
1831	81	40
1832	88	79
1833	97	114
1834	96	144
1835	95	105
1836	94	131
1837	97	130
1838	110	NA
1839	107	75
1840	100	104
1841	100	103
1842	99	118
1843	103	107
1844	116	85
1845	97	79
1846	112	108
1847	109	10
1848	117	104
1849	124	123
1850	113	97
1851	121	125
1852	118	NA
1853	118	164
1854	119	NA
1855	119	NA

person) in the middle of the nineteenth century—less than three percent of per capita income.<sup>17</sup>

From this perspective—the level of per capita income—improvements in the Mexican terms of trade were barely noticeable. But for much of the nineteenth century, and particularly before 1867, per capita income in Mexico showed slow growth, if any. Hence, the contribution of improvements in the NBTT to the *rate* of economic growth was probably significant. As little as Mexico grew during much of the nineteenth century, in the absence of international trade, it may not have grown at all. International

17 John H. Coatsworth, “The Decline of the Mexican Economy, 1800–1860,” unpub. ms. (Chicago, 1983).

Table 3 Continued

	NBTT	INTOT
1856	123	98
1857	120	NA
1858	118	NA
1859	126	NA
1860	114	NA
1861	122	NA
1862	110	NA
1863	99	NA
1864	88	NA
1865	103	NA
1866	100	NA
1867	127	NA
1868	136	NA
1869	146	NA
1870	150	NA
1871	179	NA
1872	186	361
1873	200	334
1874	221	345
1875	256	NA
1876	206	NA
1877	302	341
1878	213	347
1879	180	NA
1880	176	401

trade was hardly responsible for impoverishing nineteenth-century Mexico.

SOME COMPARISONS WITH BRAZIL, ARGENTINA, AND PERU Both Peláez and Leff have calculated Brazil's nineteenth-century NBTT. Leff, who provides an extensive series that is comparable to ours for Mexico and Cuba, comments that the most important feature of the index of Brazilian export prices is that "[t]here is no evidence of long-term declining prices." In fact, he finds that the Brazilian NBTT improved at a trend rate of 0.9 percent per year. Leff argues that if his series could have been extended backward before 1826, the fall in British export prices would have improved Brazil's NBTT even further. The story is much the same when he examines the purchasing power of exports (INTOT). "Between 1822 and 1913, Brazil's income terms of trade rose at an annual

rate of 4 percent.” The trend rate of growth in the purchasing power of imports in the first of two subperiods—1822–1849—was 4.2 percent. In the latter subperiod—1850–1896—it was 5.6 percent. Leff’s conclusion is simple: “[A] model of ‘immiserizing’ export growth generally does not fit Brazil’s historical experience during the nineteenth century.”<sup>18</sup>

Newland calculated Argentina’s NBTT between 1810 and 1870. Between 1811–1820 and 1861–1870, the Argentine NBTT improved by 73 percent. But the improvement in particular subperiods is especially striking. For example, between 1811–1820 and 1821–1830, the NBTT improved 75 percent, largely because of the fall in import prices. Another improvement of 35 percent took place between 1841–1850 and 1851–1860. Only two periods show deterioration in the NBTT—from 1830 through 1850, and from 1860 through 1870. The first deterioration was mild—about 11 percent. The deterioration between 1860 through 1870 was 16 percent. Although Newland does not provide any direct evidence about the INTOT, the rising value of exports per head strongly suggests an even larger increase in the INTOT. In other words, there is no support for the declining terms of trade model in the Argentine case.<sup>19</sup>

Finally, using data originally compiled and published by Gootenberg, we have recomputed the NBTT for Peru between 1833 and 1855. The Peruvian NBTT shows no tendency to decline. Indeed, on average, it increased by 27 percent in the 1840s. Even in the early 1850s, when the guano boom was well underway, the NBTT was 47 percent higher than it had been in the 1830s. There was a strong demand for the fertilizer in the United States and in Europe, where the incentive to raise agricultural productivity to accommodate industrialization was substantial. Whatever other effects the guano boom may have had on Peru, deterioration in the terms of trade was not one of them.<sup>20</sup>

18 Carlos Manuel Peláez, “The Theory and Reality of Imperialism in the Coffee Economy of Nineteenth-Century Brazil,” *Economic History Review*, XXXIX (1976), 276–290; Leff, *Underdevelopment and Development in Brazil*, I, 80, 84–85.

19 Carlos Newland, “Exports and Terms of Trade in Argentina, 1811–1870,” unpub. ms. (Madrid, 1996); Bulmer-Thomas, *Economic History*, 69.

20 Paul E. Gootenberg, *Between Silver and Guano: Commercial Policy and the State in Postindependence Peru* (Princeton, 1989); *idem*, “Carneros y Chuño: Price Levels in Nineteenth-Century Peru,” *Hispanic American Historical Review*, LXX (1990), 1–56.

Most of the evidence that we have assembled casts doubt on a declining terms-of-trade thesis for Latin America in the nineteenth century. The only case that demonstrates any evidence for declining terms of trade is Cuba, and that conclusion is limited to the net barter terms of trade and to the single factoral terms of trade between 1847 and 1862. Moreover, in Cuba, the income terms of trade rose. What emerges from a detailed study of the Cuban terms of trade is not unambiguous support for dependency theory, but rather support for the notion of a resurgent Spanish imperialism during the half century after 1830.

For Mexico and Brazil, neither the NBTT nor the INTOT deteriorates. By drawing on the work of other scholars, we surmise that much the same probably held for Argentina and Peru. An argument that links underdevelopment in Latin America to the terms of trade is not convincing. It is one thing to argue, as does Bulmer-Thomas, that the export sectors were too small to do the work that export-led models assume, but it is another to conclude that foreign trade made Latin America poorer. The export booms of the nineteenth century changed the nature, definition, and distribution of property rights, as well as the profitability of producing goods for the home and foreign markets. In these Latin American developments, which remain largely unexplored, rather than in the terms of trade, economic historians may find more fruitful paths of inquiry and more persuasive explanations for the syndrome known as underdevelopment.

## APPENDIX: BIBLIOGRAPHY SOURCES, METHODS, AND ASSUMPTIONS

**BIBLIOGRAPHY** Because of the enormous literature on the terms of trade, we list only those items that were of particular help to us. The best guide to technical aspects of the debate is John Spraos, *Inequalising Trade? A Study of Traditional North-South Specialisation in the Context of Terms of Trade Concepts* (Oxford, 1983). Gerald M. Meier, *International Trade and Development* (New York, 1963) is useful. A recent and comprehensive survey of the terms-of-trade debate and literature is Dimitris Diakkosavas and Pasquale L. Scandizzo, "Trends in the Terms of Trade of Primary Commodities, 1900–1982: The Controversy and Its Origins," *Economic Development and Cultural Change*, XXXIX (1991), 231–264. A few other publications on the NBTT are also worth noting: Enzo

R. Grilli and M. C. Yang, "Primary Commodity Prices, Manufactured Goods Prices, and the Terms of Trade of Developing Countries: What the Long Run Shows," *World Bank Economic Review*, II (1988), 1-47; Hans W. Singer, "The Terms of Trade Controversy and the Evolution of Soft Financing: Early Years in the UN," in Meier and Dudley Seers (eds.), *Pioneers in Development* (New York, 1984), 275-303; Prabirjit Sarkar, "The Singer-Prebisch Hypothesis: A Statistical Evaluation," *Cambridge Journal of Economics*, X (1986), 355-371. For a Latin American perspective, see José Antonio Ocampo, "Terms of Trade and Center-Periphery Relations," in Osvaldo Sunkel (ed.), *Development from Within: Toward a Neostructuralist Approach for Latin America* (Boulder, 1993), 333-360.

On the single factorial terms of trade, aside from Spraos, see Dennis R. Appleyard, "Factor Productivity and the Gains From Trade: An Estimate of India's Single Factorial Terms of Trade," *Indian Economic Journal*, XXII (1974), 36-49; W. Arthur Lewis, *Growth and Fluctuations, 1870-1913* (London, 1978), 188-193.

**SOURCES** One of the biggest problems that historians face in reconstructing the Latin American terms of trade is the absence of reliable trade statistics at the national level. Almost all of the Cuban data used to construct our series appears to have originated in the *Balanzas generales del comercio de Cuba*, published by the Administración de Rentas Marítimas in Havana from the late 1820s into the early 1860s. Many of these statistics were also reprinted by various governments, commercial digests, and magazines (especially in the United States and Great Britain) throughout the nineteenth century.

We supplemented the *Balanzas* with a number of primary sources. The following are especially important: Ramón de la Sagra, *Historia física, política y natural de la isla de Cuba* (Paris, 1842), II, 81-82 [reproduced in *Hunt's Merchant Magazine*, 9 (1843), 339-341]; J. D. B. deBow, *Encyclopedia of the Trade and Commerce of the United States* (London, 1854; 2d ed.), 521-523; John Macgregor, *Commercial Statistics: A Digest of the Productive Resources, Commercial Legislation, Commercial Tariffs* (London, 1850; 2d ed.), IV 28-29. The non-Cuban sources address the issue of smuggling, since foreign exporters had no incentive to deceive their own customs officials about the true destination of their shipments.

For statistics of the United States trade with Cuba and Mexico, we have drawn on a number of sources. The most basic one is "Statement of Commerce and Navigation of the United States," an official government document first published in 1824/25, which we used until 1858. For 1859 through 1888, we employed U.S. Treasury Department, *Commerce of the United States and Other Foreign Countries with Mexico, Central America, The West Indies, and South America* (Washington, D.C., 1889), especially 264-265. For 1881 through 1898, see Bureau of Statistics, U.S. Treasury Department, *American Commerce. Commerce of South America*,

*Central America, Mexico, and the West Indies, with Share of the United States and Other Leading Nations Therein, 1821–1898* (Washington, D.C., 1899), 3241.

For the volume of Cuba's trade with Spain, see *Estadística de los presupuestos generales del estado y de los resultados que ha ofrecidos su liquidación años 1860 a 1890–91* (Madrid, 1891). Aggregate Cuban trade statistics after 1850 may be found in Jordi Maluquer de Motes, "El mercado colonial antillano en el siglo xix," in Jordi Nadal and Gabriel Tortella (eds.), *Agricultura, comercio colonial y crecimiento económico en la España contemporánea* (Barcelona, 1974), 322–357.

For some countries, such as Mexico, the source problem is especially severe. However, Mexico's major trading partners kept records that are helpful for estimating the volume and value of international trade, despite their imperfections. Great Britain was the major trading partner for most countries in Latin America. For both Mexico and Cuba, we relied on the *Parliamentary Papers*, 1836, XLVI (1827–1834); 1842, XXXIX (1835–1840); and 1854/55, LII (1841–1851). For the years after 1851, we consulted the yearly volumes of the *Annual Statement of the Trade and Navigation of the United Kingdom With Foreign Countries and British Possessions*. We constructed indices of the price of British exports to Mexico and Cuba using unit values (based on the price of exports at the British port of origin) to serve as proxies for Mexican and Cuban merchandise imports from Britain. Cotton represented a large portion of British exports to Mexico and Cuba—overwhelmingly so in the case of Mexico until the 1880s when the impact of Mexican industrialization began to displace British cottons. The British vice consul at Veracruz observed in 1826 that import of cottons, cutlery, and woolens came "principally from England and the United States." British Consul General Charles T. O'Gorman concurred, writing in 1833, "One of the principal articles of British trade and also by far the most important one of American manufacture is ordinary cotton cloth." By 1842, French and German producers were supplying the Mexican market with fine cloths, but as far coarse cloth and woolens were concerned, which constituted the bulk of the import market, Mexico remained a British market. Moreover, British goods represented a large share of Cuban imports. Consul General Joseph T. Crawford estimated in 1845 that "more than one half of the value of all the cotton manufactures imported [into Cuba], of linens nearly half, of woolens two thirds [were of British provenance]."<sup>1</sup>

The Mexican case does present a special difficulty for measuring exports. Before November 1857, Great Britain required no declaration

1 Concerning the British consul at Veracruz, December 31, 1826, see British Museum, Additional Manuscripts 38748, f212. Charles T. O'Gorman to the Foreign Office, May 4, 1833, FO 50/80B, PRO. Concerning the British share of the Mexican market, see July 15, 1842, British Museum, Additional Manuscripts 40511, f410. Concerning British imports in Cuba, see Crawford to Aberdeen, March 8, 1845, FO72/682, PRO.



of imports of specie and bullion. Since these items were major Mexican exports, it is not possible to construct a detailed price index of Mexican exports to Britain before 1857. Hence, we employed an index of the price of silver as a proxy. For 1858 and after, we used *Report by Mr. Lionel E. Carden on the Trade and Commerce of Mexico*, C.3875 (1883), 18, to derive the relative shares of Mexican specie, bullion, and other merchandise from 1858 onward. See also Rory Miller, *Britain and Latin America in the Nineteenth Centuries* (London, 1993), 73. A search of the Public Record Office in Kew yielded little data about silver and specie imports, and what could be found was so incomplete (FO 207/43) as to be of little value. For Cuba, we used an index of sugar prices to stand for Cuba's exports to Britain before 1851. We can recover more detailed data for Cuba's exports to Britain in 1851 and thereafter from *the Annual Statements of the Trade and Navigation of the United Kingdom* (London, 1853–). Data on British exports to Cuba are available beginning in 1827, as is a series of remarkable British consular reports about Anglo–Cuban trade in the Public Record Office (FO 72). These reports provide anecdotal evidence on the origins, composition, and destination of Cuba's international trade. See, for instance, Charles David Tolmé to Lord Palmerston, Havana, August 25, 1834, FO 72/431; Tolmé to Palmerston, Havana, July 25, 1840, FO 72/599.

For trade with France, we employed the series of *Tableau General du Commerce de la France*. . . . [title varies] (Paris, 1848, and subsequent decades). Specie and bullion movements between France and Mexico present a difficulty not unlike that of Mexico's trade with Great Britain before 1857, since France required no declaration of specie and bullion at customs. The gold and silver totals that are recorded are only the amounts that were declared. French customs officials were under no illusion that declared and actual amounts were necessarily the same. The problem seems particularly acute later in the nineteenth century, when the annual totals at French customs do not square with the "official" French figures supplied by Carden in his otherwise authoritative 1883 report on Mexican trade. What makes this discrepancy even more jarring is that Carden's figures for merchandise agree precisely with those taken from the various issues of the *Tableau General*. Since Carden seems reliable in every respect, we have taken his bullion and specie totals into account in our reconstruction of Mexico's trade with France, in addition to two other sources for French trade statistics. For a general account of prices in foreign trade, see Maurice Lèvy-Leboyer, "L'héritage de Simiand: prix, profit et termes d'échange au XIXe siècle," *Revue Historique*, CDXCIII (1970), 79–120. A specifically Mexican study appears in Bernard Kapp, "Les relations économiques extérieures du Mexique (1821–1911) d'après les sources françaises," in *idem*, *Ville et Commerce (Deux essais d'histoire hispano-américaine)* (Paris, 1974).

**PRICES, WEIGHTS, AND PROCEDURES**      Wherever possible, we have used unit values derived from the declared value of imports and exports.

However, since the prices of French goods before 1847 are only the official ones, we had to begin our series with France in 1847. Although “real” values were adopted in 1847, the stability of some prices, or their suspicious rounding, suggest that some unit values for French merchandise may well have been estimated by a rule of thumb. Similar problems may beset the British unit values as well. Nevertheless, the British and French data are merely problematic in places; the Mexican data are either nonexistent or extremely poor. For much of the nineteenth century, they are nonexistent, as the fifty-year gap in the *Estadísticas Históricas de México*, II, 671, between the 1820s and the 1870s makes clear. The inaccuracies of Miguel Lerdo de Tejada’s *Comercio exterior de México* (México, 1853) have long been known. See Robert Potash, “El comercio exterior de México’ de Miguel Lerdo de Tejada: un error estadístico,” *El Trimestre Económico*, XX (1953), 474–479.

To measure the NBTT, we had to use unit values for Mexican and Cuban import and export prices. Hence, estimates of the price of Mexican exports to France derived from the unit values of French imports from Mexico, which include cost, insurance, and freight, and the price of Mexican imports from France derived from the unit values of French exports to Mexico, which do not include transportation costs. How large a measurement problem this procedure creates is open to debate. The total cost of exporting silver from Real del Monte to the Bank of England, including Mexican taxes and conveyance, was about 15 percent of the value of silver. This figure seems considerable, but since only 6.45 percent of that cost represented lightering and ocean transportation on steamship bound for Southampton, falling ocean transportation costs in the nineteenth century could have had little impact on the price of Mexican exports and, hence, on Mexican NBTT.

Falling transportation costs could have had a substantial impact on the price of imports into Mexico—for the most part inexpensive cottons. Because the effect would have been to improve the Mexican NBTT, the issue does not appear troublesome. There may be more reason to question the effect of falling transportation costs on the Cuban NBTT. Sugar being a bulky commodity with low unit value, transportation costs would have been more of a factor in determining its price. Tolmé discussed just this matter in an annex to his commercial report of 1834, but the appendix to the report, in which he discusses the impact of transportation costs on the terms of trade, appears to have been lost.

Computing the indices is straightforward. In every case, the weight assigned to a particular commodity was its share in imports or exports in a given year. We calculated chained indices to account for secular changes in the composition of imports and exports. The index employed for each country was the geometric mean of the Laspeyres and the Paasche indices, the Fisher Ideal Index. Once indices for Britain, France, the United States and Spain were calculated, we used trade weights (the specific country’s share in the Mexican or Cuban markets’ total imports and exports) to produce a final NBTT, chained to account for changes

in the geographical composition of international trade. Where possible, we checked our computed shares against other sources, such as consular reports. The results are generally reassuring. The exact formulas and procedures used may be found in *SHAZAM. Econometrics Computer Program. User's Reference Manual* (version 7.0) (New York, 1993), 303–306.