Appendix 1: Wage Sources and Estimation Procedures

<div align="center">BOGOTA</div>

Main Sources

1635–1812: Pardo Pardo, *Geografía económica*, pp. 231–34.

Notes

Alberto Pardo Pardo's wage quotations for Bogota for the long eighteenth century were drawn mainly from two convents in Bogota, *el convento de la Concepción de Bogotá* and *el convento de San Agustín de Bogotá*, but he never discusses exactly to which types of unskilled labor the wages refer. Wages drawn from the convents likely refer to either convent employees (servants) or builders working on maintaining the buildings.[1] Pardo Pardo was interested in understanding real wages of the average resident of Bogotá, so it is highly likely that he is referring to wages applicable to a large proportion of the population. However, the wage quotations informing his general idea of nominal wage movements were rather scarce, allowing him to only flesh out very general and long-term wage movements; for instance, he held wages across the entire eighteenth century at 2 reales per day.

Interpolations

No interpolations were necessary. Wages were very stable rising from 1 real/day to 1.25 reales/day by 1682 and to 2 reales/day by 1700.

<div align="center">MEXICO</div>

Main Sources

1524–1591: Borah and Cook, *Price Trends*, pp. 86–89.
1600–1700: Gibson, *Aztecs*, p. 251.
1700–1815: Garner, *Economic Growth*, pp. 268–69.
1750–1825: Dobado Gonzalez, Galvarriato, and Williamson, "Mexican Exceptionalism," pp. 803–05.

Notes

Woodrow Borah and Sherburne F. Cook include wages for four categories of workers in sixteenth-century Mexico: unskilled labor, skilled labor, convict labor, and money paid for tribute commutation. Of these four categories, we used the unskilled day wages, which included three key labor groups: construction wages, "general" wages, and wages paid to *tameme* carriers.[2] There were a few other wage quotations for field labor, herding, house service, and messengers as well included in the unskilled category. *Tameme* was a kind of tribute labor, which required natives

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[1] Pardo Pardo, *Geografía económica*, pp. 190–91, 230.
[2] Borah and Cook, *Price Trends*, pp. 86–89.

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to transport goods from one place to another.[3] It is therefore possible that wages predicted from these might understate market wages. However, when separated, the three main types of unskilled wages were remarkably similar with very nearly equal slopes on their regression lines. The *tameme* wages were slightly lower than the other wages, but not remarkably so. Therefore, they were included in the final regression used to predict the unskilled wages in the sixteenth century. As a robustness check, we removed the *tameme* day wages from the regression of unskilled wages on time. This had a miniscule effect on the final real wages calculated.

The sixteenth-century unskilled wages covered a number of cities surrounding colonial Mexico City. Comparing the various cities, there was always an upward trend in wages, though the trend was steeper for some cities than others. It was unclear, however, whether these trends were caused by real differences between the cities, or by the small sample sizes and limited time period covered for each city. All cities were included in the interpolation regression.

We were not able to find a precise wage series for seventeenth-century Mexico, so we used the wage trends described in figure 10 of Charles Gibson's study to approximate wages of unskilled laborers in seventeenth-century Mexico.[4] Gibson listed wages for a range of laborers from *repartimiento peones* and *desagüe peones*, which were either coerced or paid below market wages, to *peones*, cowherds, helpers, and *peones de hacienda*, who were more likely to receive a market wage. We used the day wages of *peones*, helpers, and *hacienda peones*, whose wages were less affected by coerced labor, to approximate an unskilled laborer's wage. Laborers did sometimes receive additional food or in-kind payments as wages, but Gibson suggests that food payments were not always an addition to the cash wage because laborers were required to purchase maize from the hacienda or they were paid the equivalent wage in half cash and half maize. We have therefore not adjusted the wages. There was a general upward trajectory of wages in the first half of the seventeenth century and then stagnation in the second half.[5]

For the long eighteenth century, we used urban and rural wages from Garner for the first half of the eighteenth century and then used the Rafael Dobado Gonzalez, Aurora Gomez Galvarriato, and Jeffrey G. Williamson wage index anchored to Richard L. Garner's wages after 1750.[6] Garner's wage data was drawn from an unpublished conference paper by Eric van Young entitled, "The Rich Get Richer and the Poor Get Skewed: Real Wages and Popular Living Standards in Late Colonial Mexico" and from other colonial sources of his own. Garner's wages were monthly earnings for workers in rural and urban areas covering "occupations from stonemasons to cowboys, from peons to mine supervisors." High-skill and high-paid occupations were excluded and only cash wages were included in the wage calculation.[7]

Thus, these wage series may understate the overall earnings of workers because they do not include in-kind payments. This would be especially true for agricultural laborers and thus the rural wage because agricultural laborers were most likely to receive in-kind payments. However, the inclusion of skilled and unskilled wages in the monthly earnings series suggests that the wages overstate the unskilled laborer's wage, especially in urban areas where in-kind payments were less common. This may

[3] Gibson, *Aztecs*, pp. 222–23.
[4] Ibid, p. 251.
[5] Ibid, pp. 249–53.
[6] Garner and Stefanou, *Economic Growth*; and Dobado Gonzalez, Galvarriato, and Williamson, "Mexican Exceptionalism."
[7] Garner and Stefanou, *Economic Growth*, p. 34.

explain why the Mexican urban real wage was so high relative to other wages in Latin America, especially in the first three-quarters of the eighteenth century. Because we were unable to analyze the individual wage data, it was impossible to adjust the wage for the inclusion of in-kind payments or the presence of high- or low-skilled wages. We have therefore, taken Garner's monthly series without adjustment.

To convert Garner's monthly wage series into day wages, we assumed that laborers worked 21.7 days per month. We got this number by dividing the number of days in a year by 12 for each month. We then assumed that people work 5 out of every 7 days (5/7 x (365/12)), which yields 21.7 days per month worked.

The Dobado Gonzalez, Galvarriato, and Williamson index is based on unpublished *peón de obra* wage rates collected by Amilcar Challú. The wages rates reflect wages of urban laborers.[8] The index suggests that wages were stagnant across from 1750–1825 with some minor fluctuations.

Interpolations

For the sixteenth century, we interpolated missing wage values by regressing the 55 unskilled day wage quotations for the period between 1524 and 1590 on the year. The regression showed an upward trend over the sixteenth century and had a high R^2 value of 0.78. We therefore believe that it is the best possible estimate for the trend in unskilled wages in sixteenth-century Mexico. The predicted wage from the regression line was used in the real wage analysis.

For the seventeenth century, we created a regression that followed Gibson's increasing trend of day wages for *peones* in 1600 from 1 real per day to mean wage of *peones de hacienda* and helpers and *peones*, which was 1.75 reales/day in 1650. Gibson then suggested that wages stagnated at 1.75 reales/day from 1650–1700, so wages were held constant accordingly. Again, we believe this is the best way to interpolate wages in a period with scarce data.

For the long eighteenth century, we used Garner's rural and urban wage rates and the Dobado Gonzalez, Galvarriato, and Williamson wage index. From 1700–1749 we used the regression of the rural and urban data separately for the entire period (1700–1815) to interpolate missing years. The regression of urban wages was based on wages in 36 years in the period 1700–1815 with 43 values interpolated from 1700–1749. The regression of rural wages was based on wages in 38 years in the period 1700–1815 with 40 values interpolated from 1700–1749. The wage displays a slight upward trend in the first half of the eighteenth century. It should also be noted that the range and dispersion of urban wages were both larger than that of rural wages, which either suggests that wages were not as sticky in urban areas or that the mix of skilled and unskilled workers that were included in Garner's wages was changing quite drastically from year to year.

From 1750–1815 we predicted urban and rural wages from the Dobado Gonzalez, Galvarriato, and Williamson wage index. We used the ratio of the mean of the rural and urban wages to the mean of that wage index to predict actual wage values for the index. We tried several different base wage levels, but using the ratios between the means seemed to provide the best match between Garner's later eighteenth-century wages and the Dobado Gonzalez, Galvarriato, and Williamson index.

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[8] Dobado Gonzalez, Galvarriato, and Williamson, "Mexican Exceptionalism," p. 802.

POTOSI

Main Sources

1677–1813: Tandeter and Wachtel, "Prices," pp. 265–68.

Notes

Enrique Tandeter and Nathan Wachtel included unskilled wage quotations, but there is not much discussion of what kind of labor made up these wages. However, Tandeter discusses wages in more detail in a 1981 article, where he argues that "free laborers who undertook unskilled work similar to that of the forced laborers were often paid only 5 or even 4 reales per day" and that a "wage of 4 reales [per day] was prevalent in Potosi in work other than mining throughout most of the eighteenth century." [9] Therefore, we believe that our wage, which is essentially 4 reales per day across the long eighteenth century is an adequate representation of unskilled laborers' wages on the free market. As a robustness check, we recalculated the welfare ratios for wages at 5 reales per day and the average welfare ratio increased from 1.7 to around 2 times the World Bank Poverty Line (WBPL). This difference would not be large enough to weaken our story.

Interpolations

We used Tandeter and Wachtel's unskilled day wage series, which was essentially flat at 4 reales per day, and interpolated missing years with a value of 4 reales per day. We feel that this adequately represents wages on the free market despite the presence of forced labor in the Potosi silver mines.

BOSTON

Main Sources

1630–1774: Main, "Gender," p. 48.
1752–1815: Wright, "History of Wages and Prices."

Notes

We used Gloria Main's wages of unskilled farm laborers for the early colonial period to extend Carroll D. Wright's unskilled laborers wages back in time. These wages excluded reaping and mowing, and therefore do not overstate the average wage. Unfortunately, Main's wages are average levels over broad periods of time, so they do not show short-term wage fluctuations. We believe, however, that they do accurately reflect long-run nominal wage patterns. Main drew her wage rates from published and unpublished diaries that mentioned wage rates and rural account books.[10]

Wright listed wages for agricultural laborers, general unskilled laborers, carpenters, and masons for the period 1752–1860. We used his wages for unskilled laborers. His study was drawn from business account books collected by the Massachusetts Bureau of Labour Statistics in the 1880s.

[9] Tandeter, "Forced," p. 114.
[10] Main, "Gender," pp. 47–48.

Interpolations

No interpolations were needed because Main's wages reflected roughly 20-year average nominal wages, and Wright's wage series was continuous from 1752–1815.

PHILADELPHIA

Main Sources

1727–1776: Nash, *Urban Crucible*, pp. 392–94, and Smith, "Material Lives," p. 184.
1785–1830: Adams, "Wage Rates," p. 420.

Notes

Gary B. Nash's wage series for unskilled laborers was drawn from a wide array of sources including government records, the Pennsylvania Hospital for the Sick Poor, the minutes of the Commissioners for Paving Streets, and the minutes for the County Commissioners. Therefore, the wages mostly reflect building laborers working for the hospital or other government institutions.

Billy G. Smith's unskilled laborers' wages were drawn from the ledgers of the Pennsylvania Hospital, business accounts, and government records. He only considered laborers performing unskilled tasks who were not receiving additional in-kind payments of food.[11]

Donald R. Adams unskilled wage rate series was drawn from "actual receipts, bills, day books and account books" from late eighteenth- and early nineteenth-century Philadelphia. He suggests that the urban laborer wages were representative of the population of Philadelphia at the time.[12]

Interpolations

Missing wages interpolated from adjacent values since the wage series were stable.

MARYLAND

Main Sources

1631–1820: Agricultural earnings for a small tobacco farmer calculated from Carr, Menard, and Walsh, *Robert Cole's World*, p. 59; and Walsh, *Motives*, pp. 183, 349, 544, 589, 604.

Notes

The calculation of earnings is an elaboration of the model developed by Lois Carr, Russell R. Menard, and Lorena Seebach Walsh in various publications.[13] One man worked 158.3 days per year in growing tobacco and maize. The value of a man's production per year in these activities was computed as the price of maize multiplied by the production of maize per man per year plus the price of tobacco multiplied

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[11] Smith, "Material Lives," p. 183.
[12] Adams, "Wage Rates," pp. 405–06.
[13] Carr, Menard, and Walsh, *Robert Cole's World*, p. 59.

by the production of tobacco per man per year as tabulated by Lorena S. Walsh for various time periods.[14] The values of output per man were chosen to correspond as closely as possible to a farm operated by a single farmer without indentured servants or slaves. Dividing the value of output per man per year by 158.3 days gives earnings per day. Sources for the price of maize are listed below. Tobacco prices from were drawn from the following sources:

1631–1740: Menard, *Economy and Society*, pp. 475–78.
1741–1775: Kulikoff, *Tobacco and Slaves*, table 13–8.
1776–1820: Carter et al., *Historical Statistics*, series Eg283.

Appendix 2: Price Sources and Estimation Procedures

PRICE INDEXES

As described in the article, we constructed a basket of consumer goods representing subsistence consumption for one adult male per year, that we show in Table 1 there and we reproduce here as Appendix Table 1.

To compute the index, we gathered prices for the goods in Appendix Table 1, and in the rest of this Appendix, we provide details on the sources and estimation procedures we used to do so.

PHYSICAL CONVERSIONS

Converting historical units of measure to the metric system was particularly difficult in Latin America where the volume of units like the *fanega* or the *carga* varied from place to place. The conversions we use are those suggested in Doursther, *Dictionnaire* and Allen and Murphy, *Just Before the Metre*, tables IV to VI, unless otherwise specified in the description below.

INTERPOLATIONS

When the term interpolation is used in this Appendix, it means that missing years were filled in using a certain technique, for instance a regression line or moving average. When prices are predicted, this means that prices are estimated based on what we consider to be reasonable assumptions but not on real price data. We have not had to predict data often.

Generally moving averages have been preferred in interpolating prices because they capture more of the variance in a price series over time than a regression line. However, it should be noted that all interpolations reduce the volatility of price series. *Therefore, the interpolated price series in this article should not be used to measure market integration or other measures of price and wage volatility.* Likewise, interpolations generally lead us to be less certain of particular annual values of our consumer price index and real wages but relatively certain about broad levels

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[14] Walsh, *Motives*, pp. 183, 349, 544, 589, 604.

APPENDIX TABLE 1
BARE-BONES SUBSISTENCE BASKET OF GOODS

	Quantity per Person per Year		Nutrients per Day	
			Calories	Proteins
Food				
Maize	165	kilograms	1,655	43
Beans/Peas	20	kilograms	187	14
Meat	5	kilograms	34	3
Butter	3	kilograms	60	0
TOTAL			1936	60
Nonfood				
Soap	1.3	kilograms		
Linen/Cotton	3	meters		
Candles	1.3	kilograms		
Lamp oil	1.3	liters		
Fuel	2.0	million BTU		

Notes: The table is based on quantities and nutritional values for the maize diet of the Americas.

and long-term trends. We checked to ensure that the interpolations assumed did not affect the long-term trends in the price indexes or in the real wage series. All price and wage series are available online.[15]

BOGOTA

Although Pardo Pardo's price history includes prices as early as 1635, there were not prices for enough goods to properly create the bare-bones subsistence basket described in the text of the article until 1680. Therefore, the consumer price index was constructed for the period 1680–1810.

Maize

Main Sources

1708–1804: Pardo Pardo, *Geografía económica*, pp. 237–40.

Notes

There were no maize prices before 1708, so we tried to make reasonable interpolations before.

Interpolations and Conversions

Maize prices were predicted for the period 1680–1697 using the regression line for maize prices over the eighteenth century. From 1698–1810 the series was interpolated using a 21-year moving average. Maize prices were available for 37 years of the 113 possible years between 1698 and 1810, leaving 76 years (67 percent) to be interpolated. Regarding conversions, we took 1 *arroba* = 25 *libras* = 11.5 kg.

Beans

Main Sources

1708–1810: Pardo Pardo, *Geografía económica*, pp. 237–40.

Notes

Chickpea prices were the closest food product to a bean, and unfortunately there were not chickpea prices available before 1708.

Interpolations and Conversions

Chickpea prices were predicted for the period 1680–1697 using the regression line for chickpea prices over the eighteenth century. From 1698–1810 the chickpea price series was interpolated using a 21-year moving average. Chickpea prices were available for 39 years of the 113 possible years between 1698 and 1810, leaving 74 years (65 percent) to be interpolated. Regarding conversions, we took 1 *arroba* = 25 *libras* = 11.5 kg.

Meat

Main Sources

1635–1812: Pardo Pardo, *Geografía económica*, pp. 237–40.

Notes

Beef prices extend back to 1635, but are not regular until after 1695. Beef prices are constant from 1680–1726 and then increase in price dramatically over the rest of the eighteenth century.

Interpolations and Conversions

From 1680–1683 beef prices were held constant at 2 reales/arroba. From 1684–1812 prices were interpolated using a 21-year moving average. Beef prices were available in 44 years of the 133 possible years between 1680 and 1812, leaving 89 years (67 percent) to be interpolated. Regarding conversions, we took 1 *arroba* = 25 *libras* = 11.5 kg.

Butter

Main Sources

1682–1810: Pardo Pardo, *Geografía económica*, pp. 237–40.

Notes

Butter prices were available across the long eighteenth century. Lard and cooking oil prices were also available, but oil prices end in 1741 and lard prices survive infrequently in the later period as well, making butter the best series representing the fatty part of the diet.

Interpolations and Conversions

Butter prices were interpolated using a 21-year moving average. Butter prices were available in 71 years of the 131 possible years between 1680 and 1810, leaving 60 years (46 percent) to be interpolated. Regarding conversions, we took 1 *arroba* = 25 *libras* = 11.5 kg.

Candle or Tallow

Notes

Candle or tallow prices were held equal to soap prices (see below) because no candle or tallow prices were available.

Lamp Oil

Notes

Lamp oil prices were held equal to butter prices because there were no prices available.

Soap

Main Sources

1635–1803: Pardo Pardo, *Geografía económica*, pp. 237–40.

Notes

Soap prices occur regularly from 1682–1729 with a large gap between 1730 and 1800.

Interpolations and Conversions

From 1680–1738 and from 1790–1810, a 21-year moving average was used to interpolate missing soap prices. In the first period, there were 34 soap prices available of 59 possible years between 1680 and 1738, leaving 25 years (42 percent) to be

interpolated. In the second period, there were two soap prices available of 21 possible years, leaving 19 years (90 percent) to be interpolated. From 1739–1789 the average ratio of soap to butter prices from 1680–1738 (0.62) was multiplied by the butter price to predict the soap price. Regarding conversions, we took 1 *arroba* = 25 *libras* = 11.5 kg.

Cotton Cloth

Main Sources

1659–1818: Macera et al., *Precios*, p. 110 (for Lima).

Notes

   Pardo Pardo did not include cloth prices for Bogota. *Tocuyo* prices from Lima have therefore been substituted for the Bogotá prices. This seemed more reasonable than substituting Potosi cloth prices because Potosi had a much higher price level than Bogota. *Tocuyo* is "a plain homespun cotton stuff," which matches most closely the mantas of Mexico and cloth in Potosí.

Interpolations and Conversions

   The *tocuyo* price series was interpolated using a 21-year moving average. *Tocuyo* prices were available for 95 of the 131 possible years between 1680 and 1810, leaving 36 years (27 percent) to be interpolated. Regarding conversions, we took 1 *vara* = 0.8475 m.

Firewood

Main Sources

1666–1812: Pardo Pardo, *Geografía económica*, pp. 237–40.

Notes

   Firewood prices basically sat at 2 reales/carga for the entire eighteenth century with what looks to be a few years of volatility.

Interpolations and Conversions

   Firewood prices were predicted to be 2 reales/carga between 1680 and 1706. Between 1707 and 1810 firewood prices were interpolated using a 21-year moving average. Firewood prices were available for 37 years of the 131 possible years between 1680 and 1810, leaving 94 years (72 percent) to be interpolated. Regarding conversions, we took 1,000 kg wood = 7.701 millions of BTUs, 1 *carga* = 1.15 *quintales* = 115 *libras*, and 1 *libra* = 0.46 kg.[16]

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   [16] The correspondence between quantity of wood and BTU comes from Allen, "Timber Crisis," p. 478. The relationship between *cargas*, *quintales,* and *libras* are values for Peru according to Gootenburg, "Carneros," p. 10. The rest, as usual, are from Doursther, *Dictionnaire*.

MEXICO

By combining prices from multiple sources, we were able to construct the consumer price index between 1525 and 1810.

Maize

Main Sources

1525–1810: Garner and Stefanou, *Economic Growth*, pp. 266–67; and Garner, "Price Trends," p. 285.

Notes

Garner's price series for maize from his book and his paper on maize prices in Mexico were used. Garner's series included all of the other maize prices we were able to find except for Quiroz. We decided it was best to use Garner's series rather than try to weight Quiroz's series based on how much data was similar between the two.

Interpolations and Conversions

We used an 11-year moving average to interpolate missing years in the Garner series, and this filled most of the missing observations. Maize prices were available for 213 years of the 286 years between 1525 and 1810, leaving 73 years of maize prices (25 percent) to be interpolated. Regarding conversions, we took 1 *fanega* = 46.0093 kg of maize.

Beans

Main Source

1665–1798: Espinosa Morales, "Análisis de Precios," pp. 140–49.
1741–1783: Garner, "Price Trends," p. 313.

Notes

Lydia Espinosa Morales bean prices from the Eastern Bajío region and Garner's bean prices from Hidalgo were averaged when both were present in the same year.

Interpolations and Conversions

Bean prices were predicted before 1665 and interpolated thereafter using the mean ratio of bean to maize prices in grams of silver per kg (g Ag/kg). Different means were used for the pre- and post-1800 period: 1.31 bean/maize price ratio pre- 1800; 1.86 bean/maize price ratio post-1800. All bean prices were predicted before 1665. After 1665 bean prices were available for 123 years of the 145 possible years, leaving 22 years of bean prices (15 percent) to be interpolated. Including the earlier period, 57 percent of bean prices were interpolated. Regarding conversions, we took 1 *fanega* = 46.0093 kg of beans.

Meat

Main Sources

1527–1599: Borah and Cook, *Price Trends*, p. 79.
1612–1804: Brading, *Haciendas*, pp. 195–96.
1697–1807: Quiroz, *Entre el Lujo*, pp. 101–03.

Notes

   Turkey prices from Borah and Cook are used in the sixteenth century because Turkey was the most common domesticated meat source before the conquest, and beef prices were very high for most of the sixteenth century because cattle were just being introduced to the continent. It is, therefore, doubtful that beef was a significant part of the diet for most of the sixteenth century. Beef prices from Quiroz and Brading were averaged after 1600.

Interpolations and Conversions

   In the sixteenth century, missing turkey prices were interpolated using a regression line. The regression was based on nine turkey prices with all other years being interpolated. After 1600 missing beef prices were interpolated using two separate regression lines: one on the beef prices from 1600–1780 and the second on the beef prices from 1780 onwards. The earlier regression line for the 1600–1780 predicted meat prices at approximately 1 g Ag/kg throughout the period, so this value was used to interpolate missing values. After 1780 beef prices began to increase and the regression line reflects this. Between 1600 and 1780 beef prices were available for 59 years of 180 possible years, leaving 121 years (67 percent) to be interpolated. After 1780, 27 years of beef prices were available for the 30 possible years, leaving three years (10 percent) to be interpolated. Regarding conversions, we took 1 *arroba* = 25 *libras* = 11.5 kg. Also, turkeys were assumed to weigh 8 kg with 40 percent of this weight consumed as edible meat.

Butter

Main Sources

1756–1803: Quiroz, *Entre el Lujo*, p. 108.

Notes

   There were no butter prices available before Mexico before 1756, but Enriqueta Quiroz's prices were used thereafter.

Interpolations and Conversions

   Butter prices were predicted before 1750 using the ratio between butter and tallow prices in the period 1750–1820 (2.22). Sources for tallow prices are given below.

Quiroz provides butter prices for 13 years between 1756 and 1803, leaving 47 years (78 percent) to be interpolated between 1751 and 1810. Regarding conversions, we took 1 *arroba* = 25 *libras* = 11.5 kg.

Tallow

Main Sources

1528–1557: Borah and Cook, *Price Trends*, p. 84.
1643–1808: Brading, *Haciendas*, pp. 195–96.
Notes

    Overall there were very few tallow prices available, 32 years for the colonial period, so we tried to make reasonable interpolations.

Interpolations and Conversions

    Tallow prices were held constant across the sixteenth century at the average of eight tallow prices in Borah and Cook (2.3 g Ag/kg) because there was no clear trend in tallow prices from the data. Two regression lines were used to interpolate tallow prices: one from 1601–1750 and the other from 1751–1810. Nine years of tallow prices were available from 1601–1750, leaving 141 years (94 percent) to be interpolated. From 1751–1810 there were 15 tallow prices, leaving 45 years (75 percent) to be interpolated. The two separate regressions are meant to capture a slight decline in tallow prices across the first period and an increase in tallow prices in the second. Regarding conversions, we took 1 *arroba* = 25 *libras* = 11.5 kg.

Lamp Oil

Notes

    Lamp oil prices were held equal to tallow prices because there were no specific lamp oil prices.

Soap

Main Sources

1754–1808: Brading, *Haciendas*, pp. 195–96.
1756–1803: Quiroz, *Entre el Lujo*, p. 108.

Notes

    There were no soap prices before 1750, but thereafter the average of D. A. Brading and Quiroz's series were used.

Interpolations and Conversions

    Soap prices were predicted from tallow prices from 1525 to 1750 based on the ratio of soap to tallow prices in the period 1750–1820 (1.228). Between 1750 and 1810

soap prices were interpolated using a regression line to reflect the slight increase in soap prices across the period. Soap prices were available for 31 years from 1751–1810, leaving 29 years (48 percent) to be interpolated. Regarding conversions, we took 1 *arroba* = 25 *libras* = 11.5 kg.

Cloth

Main Sources

1526–1573: Borah and Cook, *Price Trends*, pp. 62–75.
1777–1867: Thomson, *Puebla de Los Angeles*, pp. 271.
1780–1804: Miño Grijalva, *Obrajes*, p. 234.
1835–1845: Potash, *Mexican Government*, p. 163.
1835–1877: Herrera Canales, *El Comercio Exterior*, p. 38.
1857–1877: Keremitsis, *La Industria Textil*, p. 71.

Notes

   Cloth prices for Mexico are prices of manta cloth, which is a rough cloth that would have been used by unskilled laborers, which was produced locally. The price data were available for two periods, the very early colonial period (Borah and Cook) and the late colonial period after 1777. Average prices per year and across series were used in both periods.

Interpolations and Conversions

   Early manta prices (1525–1575) were interpolated using a regression line on the many prices surviving. Borah and Cook recorded 156 manta price estimates from 32 years between 1526 and 1573; thus, 19 years (37 percent) of manta cloth prices were interpolated between 1525 and 1575. Missing manta prices between 1576 and 1760 were predicted by drawing a regression between the interpolated price in 1575 and 1761. This is obviously not an ideal way of making this prediction, but there were no price data available, leaving few options for a more realistic prediction. For the period 1761 to 1810, missing manta prices were interpolated using a regression on 20 years of manta prices from 1777–1877; 42 years of manta prices (84 percent) were interpolated between 1761 and 1810. Regarding conversions, we took 1 *vara* = 0.84 m.

Firewood

Notes

   There were very few firewood prices for Mexico; therefore the average price of firewood from Bogota (0.12 g Ag/kg) was used in the Mexican basket after 1575. The average price of firewood in Lima could also have been substituted, but these prices seemed too high for Mexico. Before 1575 the firewood price was held constant at 12 percent of the basket. See the section on prices in Bogotá for more information on sources and interpolations.

Interpolations and Conversions

Regarding conversions, we took 1,000 kg wood = 7.701 millions of BTUs, 1 *carga* = 1.15 *quintales* = 115 *libras*, and 1 *libra* = 0.46 kg.[17]

POTOSI

Maize

Main Sources

1683–1812: Tandeter and Wachtel, "Prices," pp. 237–40 (Indian Corn).
1734–1813: Ibid. (White Corn).

Notes

A weighted average of the two maize prices was taken. Indian maize (*morocho*) was weighted with 75 percent of the price while white maize (*blanco*) was given 25 percent of the price because Indian maize was generally cheaper than white maize.

Interpolations and Conversions

The weighted average maize price was interpolated using an 11-year moving average from 1683–1690 and from 1709–1813; 3 years of maize prices were available between 1683 and 1690, leaving five years (62.5 percent) to be interpolated. We calculated a regression line between the price of maize in 1690 and 1709 to predict prices for the missing years (1691–1708). The regression line reflects a general fall in maize prices from the late seventeenth to the early eighteenth centuries. There were 86 years with maize prices available for the 105 possible years from 1709–1813, leaving 19 years (18 percent) to be interpolated. Regarding conversions, we took 1 *carga* = 45.44 kg.[18]

Beans

Main Sources

1564–1810: Macera et al., *Precios*, pp. 60, 63 (for Lima).
1799–1833: Haitin, "Prices," pp. 190–98 (for Lima).

Notes

Bean prices were predicted from Potosi maize prices. The ratio of white and black beans to maize prices in Lima (1.15) was used to predict bean prices from the constructed Potosi maize price above.[19] A direct substitution of the Lima bean price was possible, but given the high price level in Potosi, it seemed better to predict bean prices in this way.

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[17] The correspondence between quantity of wood and BTU comes from from Allen, "Timber Crisis," p. 478. The relationship between *cargas*, *quintales,* and *libras* are values for Peru according to Gootenburg, "Carneros," p. 10. The rest, as usual, are from Doursther, *Dictionnaire*.
[18] Langer and Hames, "Commerce."
[19] Prices of maize in Lima came from Macera et al., *Precios*, p. 43.

Meat

Main Sources

1695–1813: Tandeter and Wachtel, "Prices," pp. 259–62.

Notes

Beef prices were available for the long eighteenth century in Potosi. A *charqui* (llama meat) price series was also available, and it constituted "the product of animal origin whose consumption is most widespread in the indigenous world."[20] However, beef prices were much more numerous and therefore were easier to interpolate. *Charqui* prices were slightly lower than beef prices, but because beef consumption constitutes only 3 percent of the basket, the difference in final wages would be minimal.

Interpolations and Conversions

An 11-year moving average was used to interpolate the beef series. There was a major increase in the prices between 1752 and 1754, which is a reflection of a real price increase, not a product of the interpolation. Beef prices were available for 75 years of the 131 years possible between 1683 and 1813, leaving 56 years (43 percent) to be interpolated.

The beef prices are given in reales/quarter by Tandeter and Wachtel, but they did not specify what a quarter was. We have assumed that a quarter was an arroba because it is a quarter of a quintal. This definition seems plausible given the entries in several Spanish dictionaries as well. Here we took 1 quarter = 1 *arroba* = 25 *libras* = 11.36 kg.[21]

Cooking Oil

Main Sources

1676–1804: Tandeter and Wachtel, "Prices," pp. 222–25.

Notes

Tandeter and Wachtel do not list the precise type of oil, but it is clearly cooking and not lamp oil.

Interpolations and Conversions

The oil price series was interpolated using a 21-year moving average. Cooking oil prices were available in 96 years of the 138 years possible between 1676 and 1813, leaving 42 years (30 percent) to be interpolated. Regarding conversions, we took 1 quarter = 1 *arroba* = 25 *libras* = 11.36 kg.[22]

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[20] Tadeter and Wachtel, "Prices," p. 258.
[21] Tandeter, "Forced."
[22] Ibid.

Tallow

Notes

Tallow prices were held equal to soap prices because Tandeter and Wachtel did not include any tallow prices in their chapter. Tallow made up a small enough portion of the total basket that it would not significantly influence the final consumer price index or real wage estimations.

Lamp Oil

Notes

Lamp oil prices were held equal to cooking because Tandeter and Wachtel did not include any lamp oil prices in their chapter. Lamp oil made up a small enough portion of the total basket that it would not significantly influence the final consumer price index or real wage estimations.

Soap

Main Sources

1676–1804: Tandeter and Wachtel, "Prices," pp. 222–25.

Notes

Again, there is not much discussion in Tandeter and Wachtel's chapter about the exact nature of the soap represented in the price series.

Interpolations and Conversions

The soap price series was interpolated using a 21-year moving average. Soap prices were available in 110 years of the 138 years possible between 1676 and 1813, leaving 28 years (20 percent) to be interpolated. Regarding conversions, we took 1 *quintal* = 4 *arrobas* = 100 *libras* = 45.44 kg.[23]

Cloth

Main Sources

1690–1812: Tandeter and Wachtel, "Prices," pp. 215–18.

Notes

Tandeter and Wachtel list prices for imported Rouen Linen and American-produced coarse cotton cloth, coarse woolen cloth, and light woolen cloth. The coarse cotton cloth was used in the basket because it was most comparable to manta cloth

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[23] Ibid.

in Mexico. Coarse cotton cloth prices experienced a sharp decline at the end of the seventeenth and in the early eighteenth centuries followed by a long period of price stagnation.

Interpolations and Conversions

   The coarse cotton cloth prices were interpolated using a 21-year moving average. Coarse cotton cloth prices were available for 51 years in the 131 possible years between 1683 and 1813, leaving 80 years (61 percent) to be interpolated. Regarding conversions, we took 1 *vara* = 0.84 m.

Firewood

Main Sources

1566–1822: Macera et al., *Precios*, p. 97 (*leña de la cocina* –kitchen wood– for Lima).
1627–1770: Ibid., p. 98 (*leña del horno* –oven wood– for Lima).

Notes

   Firewood prices were not available for Potosí, so prices from Lima were substituted into the Potosi consumer price basket. Pablo Macera et al. provides prices for three kinds of firewood and coal (*carbon duro*) in Lima: *leña de cocina* (kitchen wood), *leña del horno* (oven wood), and *leña de raja* (kindling). *Leña de raja* was the most expensive and least complete series, so it was not included. It seemed likely that most people would use wood rather than coal, so coal was also excluded. Picking between *leña del horno* and *leña de cocina* was more difficult. *Leña de cocina* must be better quality wood because it costs 73 percent more on average than *leña del horno*. This raises issues about what BTU conversion should be used because for instance, *leña del horno* may be softwood while *leña de la cocina* may be hardwood. In the end, we decided to use *leña del horno* as the base wood because it was cheaper and because it seemed more likely that *leña del horno* would be used for heating the home.

Interpolations and Conversions

   To interpolate missing years, we took 21-year moving averages of both types of wood. *Leña del horno* prices and interpolated prices were used for the years 1680–1781. *Leña del horno* prices were available for 62 years of the 102 possible years between 1680 and 1781, leaving 40 years (39 percent) to be interpolated. However, *leña del horno* prices were not available from 1782–1810, so the prices and interpolated prices of *leña de la cocina* were multiplied by the average ratio between the prices of the two woods in earlier periods (0.58) to predict *leña del horno* prices. *Leña de la cocina* prices were available in 16 years of the 29 possible years between 1782 and 1810, leaving 13 years (45 percent) to be interpolated. Regarding conversions, we took 1,000 kg wood = 7.701 millions of BTUs, 1 *carga* = 1.15 *quintales* = 115 *libras*, and 1 *libra* = 0.46 kg. [24]

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[24] The correspondence between quantity of wood and BTU comes from Allen, "Timber Crisis," p. 478. The relationship between *cargas*, *quintales*, and *libras* are values for Peru according to Gootenburg, "Carneros," p. 10. The rest, as usual, are from Doursther, *Dictionnaire*.

BOSTON

Prices for Boston were drawn mainly from William B. Weedon's study of colonial New England and Wright's study of prices and wages in Massachusetts through the Massachusetts Bureau of Labour Statistics. The consumer price index was constructed for the years from 1631 to 1825.

Maize

Main Sources

1631–1789: Weedon, *Economic and Social History*, pp. 878–903.
1752–1859: Wright, "History of Wages and Prices," pp. 337–38.

Notes

Maize prices from Weedon were used for the earlier period with Wright's cornmeal prices taking over after 1776.

Interpolations and Conversions

Maize prices were available for 143 years of the 195 possible years between 1631 and 1825. The 52 missing years (27 percent) were interpolated. Regarding conversions, we took 1 bushel = 56 lbs. of maize = 25.77 kg.

Beans

Main Sources

1639–1783: Weedon, *Economic and Social History*, pp. 878–903.
1759–1860: Wright, "History of Wages and Prices," pp. 336–37.

Notes

Pea prices from Weedon were used until 1776, after which Wright's bean price series was used in the consumer price basket.

Interpolations and Conversions

Bean or pea prices were available for 84 years of the 195 possible years between 1631 and 1825. The missing years were interpolated. Regarding conversions, we took 1 bushel = 60 lbs. of maize = 27.61 kg.

Meat

Main Sources

1637–1786: Weedon, *Economic and Social History*, pp. 878–903.
1752–1859: Wright, "History of Wages and Prices," pp. 401–02.

Notes

We used Weedon's beef price series until 1776, and then switched to Wright's series.

Interpolations and Conversions

Missing beef prices were interpolated using moving averages. Beef prices were available for 93 years of the 195 possible years between 1631 and 1825, leaving 102 years (52 percent) to be interpolated. Regarding conversions, we took 1 lb. = 0.46 kg.

Butter

Main Sources

1634–1787: Weedon, *Economic and Social History*, pp. 878–903.
1762–1860: Wright, "History of Wages and Prices," pp. 357–58.

Notes

Butter prices from Weedon were employed until 1776, with butter prices from Wright following thereafter.

Interpolations and Conversions

Missing butter prices were interpolated from adjoining values. Butter prices were available for 64 years of the 195 years possible between 1631 and 1825, leaving 131 years (67 percent) to be interpolated. Regarding conversions, we took 1 lb. = 0.46 kg.

Candles

Main Sources

1747–1859: Wright, "History of Wages and Prices," pp. 418–19.

Notes

There were no candle prices before 1747.

Interpolations and Conversions

Candle prices were held at 6 g Ag/kg until 1747 to predict these missing prices. Moving averages were used thereafter to interpolate the missing years. Candle prices were available for 32 years of the 79 possible years between 1747 and 1825, leaving 47 years (59 percent) to be interpolated. Regarding conversions, we took 1 lb. = 0.46 kg.

Lamp Oil (Tallow)

Main Sources

1758–1841: Wright, "History of Wages and Prices," pp. 419–20.

Notes

There were no lamp oil prices available in Wright or Weedon's studies, so tallow prices from Wright were substituted.

Interpolations and Conversions

The tallow prices were held constant at 6 g Ag/kg until Wright's price series began in 1758. Moving averages were used to interpolate the missing years thereafter. Tallow prices were available for 14 years of the 68 possible years between 1758 and 1825, leaving 54 years (79 percent) to be interpolated. Regarding conversions, we took 1 lb. = 0.46 kg.

Soap

Main Sources

1783–1859: Wright, "History of Wages and Prices," pp. 416–17.

Notes

No prices were available before Wright's soap series began in 1783.

Interpolations and Conversions

Soap prices were held constant at 4 g Ag/kg with a gradual increase from 1747–1783 from 4 to 7 g Ag/kg. Soap prices were available for 15 years of the 43 years between 1783 and 1825, and the missing years were interpolated. Regarding conversions, we took 1 lb. = 0.46 kg.

Linen/Cotton

The same series was used in all of the colonies since most cloth was imported from England and could be transported to Massachusetts, Pennsylvania, and Maryland at similar cost. This view of the market allows data from the various colonies to be pooled.

Main Sources

1747–1775: Egnal, *New World Economies*, pp. 171–79.
1784–1857: Wright, "History of Wages and Prices," p. 373.
1753–1813: Cole, *Wholesale Commodity Prices*.
1814–1860: Zevin, "Growth of Cotton," p. 134.

Notes

Marc Egnal reports the prices paid by Philadelphia merchants to buy checked linen and cotton fabrics in England, and the prices received from selling the cloths to shops in Philadelphia. His Philadelphia prices are, consequently, wholesale prices, and he reports the price per yard received for different widths of cloth, so price per square yard can be calculated. Arthur Harrison Cole reports the price of Russian sheeting in New York or Philadelphia. The 1782 and 1783 prices were extrapolated based on the Boston price of Russian duck. We use July prices since prices did not vary much over the year. Robert Brooke Zevin continues the series with annual averages of all monthly prices beginning in 1814 and describes the product as "Russian brown [i.e., unbleached] sheeting." These are also wholesale prices and agree surprisingly well with Egnal's prices. Between 1630 and 1753 we assume an unchanging wholesale price in North America since English fustian prices were also roughly constant in this period (Shammas, "Textile Prices," pp. 489–91; and Beveridge *Prices and Wages*, p. 458.). Wright and Weeks reported many quotations for retail prices for unspecified cotton cloth and cotton flannel, sheeting, and shirting. The prices of these products were similar. Between 1801 and 1860 the average mark up of these retail prices compared to the wholesale price of Russian brown sheeting was 52 percent, so we have applied a 50 percent market up to the whole price series throughout in order to computer the retail price of cotton cloth.

Interpolations and Conversions

We took 1 yard = 0.9144 m.

Firewood

Main Sources

1660–1765: Weedon, *Economic and Social History*, pp. 878–903.
1752–1858: Wright, "History of Wages and Prices," pp. 395–96.

Notes

Our firewood prices are the price of wood sold by the cord, which was much cheaper than the prices of wood sold by the cubic food. We have only scattered prices for the seventeenth century, so considerable interpolation was required especially for that period.

Interpolations and Conversions

Firewood prices were available for 41 years of the 195 possible years between 1631 and 1825, leaving 154 years (79 percent) to be interpolated. Regarding conversions, we took 1,000 kg wood = 7.701 millions of BTUs, 1 cord of wood = 128 cubic feet, and 1 cubic foot = 28.32 liters.[25]

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[25] The correspondence between quantity of wood and BTU comes from Allen, "Timber Crisis," p. 478. The rest, as usual, are from Doursther, *Dictionnaire*.

PHILADELPHIA

The Anne Bezanson volumes listed below are the ultimate sources of our Philadelphia prices; however, we have taken our Bezanson prices from the online compilation prepared by Peter Lindert and associates.[26] This spreadsheet summarizes the conversion factors need to convert colonial measures to metric, and we use the resulting metric values, so we do not repeat the discussion of conversion factors here. The later Bezanson price series are wholesale price series, and therefore a retail markup has been added to each series. The specific retail markups were calculated from the average wholesale to retail markup for each good in Boston in the nineteenth century as recorded by Wright. The percentage markup will be noted below, but we will not repeat this description for each price series.

Maize

Main Sources

1720–1790: Bezanson, Gray, and Hussey, *Prices*, as transcribed by Lindert.
1784–1861: Bezanson, Gray, and Hussey, *Wholesale Prices*, as transcribed by Lindert.

Notes

Wholesale maize prices were given a retail markup of 25 percent.

Interpolations and Conversions

No interpolations were necessary.

Beans

Notes

No bean prices were available in the Bezanson books.

Interpolations and Conversions

Bean prices were assumed to be equal to 150 percent of the Philadelphia maize price.

Meat

Main Sources

1720–1790: Bezanson, Gray, and Hussey, *Prices*, as transcribed by Lindert.
1784–1861: Bezanson, Gray, and Hussey, *Wholesale Prices*, as transcribed by Lindert.

Notes

Wholesale beef prices were given a retail markup of 78 percent.

[26] See http://gpih.ucdavis.edu/files/Penn_spliced_1720-1896.xls.

Interpolations and Conversions

No interpolations were necessary.

Butter

Main Sources

1784–1861: Bezanson, Gray, and Hussey, *Wholesale Prices*, as transcribed by Lindert.

Notes

Wholesale butter prices were given a retail markup of 31 percent.

Interpolations and Conversions

Butter prices before 1784 were predicted using the 1784 butter to beef price ratio. No interpolations were needed after 1784.

Candles

Main Sources

1784–1861: Bezanson, Gray, and Hussey, *Wholesale Prices*, as transcribed by Lindert.

Notes

Wholesale prices were given a retail markup of 31 percent.

Interpolations and Conversions

Prices before 1784 were predicted using the 1784 candle to beef price ratio. No interpolations were needed after 1784.

Lamp Oil (Tallow)

Main Sources

1783–1859: Wright, "History of Wages and Prices," pp. 419–20.

Notes

No lamp oil prices were available for Pennsylvania, so the tallow price from Massachusetts was substituted.

Interpolations and Conversions

See the description of the Boston lamp oil (tallow) prices above for details about interpolations.

Soap

Main Sources

1784–1861: Bezanson, Gray, and Hussey, *Wholesale Prices*, as transcribed by Lindert.

Notes

Wholesale soap prices were given a retail markup of 57.8 percent.

Interpolations and Conversions

Prices before 1784 were predicted using the 1784 soap to beef price ratio. No interpolations were needed after 1784.

Cotton Cloth

See Boston.

Firewood

Main Sources

1754–1800: Smith, "Material Lives," p. 184.
1785–1825: Carter et al., *Historical Statistics*, anthracite coal in Philadelphia.

Notes

By the end of the eighteenth century, the cost of coal and firewood per unit energy was fairly close, so we have used a mixture of coal and firewood prices.

Interpolations and Conversions

The price of firewood was assumed to be constant from 1720 to 1753 at approximately the value of the late 1750s. After 1785 there was little difference in the cost of energy from anthracite or wood.

MARYLAND

We constructed series for Maryland for the years 1662 to 1800. While the Philadelphia and Boston series reflect urban environments, those of Maryland correspond more to small town and rural areas.

Maize

Main Sources

1618–1720: Menard, *Economy and Society*, table A-6 to A-9, pp. 475–78.
1721–1775: Kulikoff, *Tobacco and Slaves*, table 13-6.
1776–1820: Carter et al., *Historical Statistics*, series Eg290.

Notes

The source *Historical Statistics*, series Eg290, is for Maryland, western shore. These sources give the price in pence per pound.

Interpolations and Conversions

We took 1 pound = .454 kilograms.

Beans

Main Sources

1680–1709: Clemens, *From Tobacco to Grain*, appendix I-A (for wheat).
1710–1775: Kulikoff, *Tobacco and Slaves*, table 13-7 (for wheat).
1776–1820: Carter et al., *Historical Statistics*, Eg297 (for wheat).

Notes

Bean prices were assumed to be equal to wheat prices. Series Eg297 is the price for Maryland, western shore.

Interpolations and Conversions

Prices were expressed in pounds per bushel. The bushel was assumed to weigh 60 pounds and the pound to equal .454 kilograms.

Meat

Main Sources

1663–1668: Carr, Menard, and Walsh, *Robert Cole's World*, p. 220.
1677–1732: Clemens, *From Tobacco to Grain*, p. 168.
1733–1806: Walsh, Martin, and Bowen, *Provisioning*, pp. 376–77.

Notes

This corresponds to pork prices.

Interpolations and Conversions

Many seventeenth-century prices were missing and assumed to equal .16 Virginia pounds per barrel, which was in line with the reported prices. A few prices in the Revolution War were missing and set equal to adjoining year prices. The bushel was assumed to weigh 60 pounds and the pound to equal .454 kilograms.

Butter

Main Sources

1666:   Carr, Menard, and Walsh, *Robert Cole's World*, p. 183.
1726–1807: Walsh, Martin, and Bowen, *Provisioning*, pp. 363–64.

Notes

   Prices were very sparse, especially before 1750.

Interpolations and Conversions

   After 1750 missing values filled with interpolations from adjoining values. Prior to 1750 the data were limited by did suggest slowly rising prices. A series was conjectured accordingly. It is plausible in view of the Massachusetts series.

Candles

Notes

   Candle prices were set equal to butter prices. The very few price quotations for candles in Carr, Menard, and Walsh, *Robert Cole's World*, support this equivalence.

Lamp Oil

Notes

   Lamp oil prices were set equal to butter prices.

Soap

Notes

   Soap prices were set equal to butter prices. The very few price quotations for soap in Carr, Menard, and Walsh, *Robert Cole's World*, support this equivalence.

Cotton Cloth

Main Sources

1677–1750: Clemens, *From Tobacco to Grain*, p. 167.
1784–86: Walsh, Martin, and Bowen, *Provisioning*, p. 375.

Notes

   Cloth prices from Paul Gilbert Eli Clemens and Lorena S. Walsh, Ann Smart Martin, and Joanne Bowen were the price per yard of Osnaburg sack cloth.

Interpolations and Conversions

Many gaps were roughly interpolated. The resulting series is consistent with those for other colonies and for England. Regarding conversions, we took 1 yard = 0.9144 m.

Firewood

Main Sources

1740–1807: Walsh, Martin, and Bowen, *Provisioning*, p. 369.

Notes

Prices are per cord and per load. We assumed the load was one cord.

Interpolations and Conversions

Firewood prices before 1740 were roughly predicted following the trend in Massachusetts. Regarding conversions, we took 1,000 liters of wood = 7.701 millions of BTUs, 1 cord of wood = 128 cubic feet, and 1 cubic foot = 28.32 liters.[27]

Appendix 3: Conversions to Silver

SPANISH AMERICA

The silver value of the real was held constant across the periods considered here at one real equal to 3.1875 grams of silver, and the currency was not allowed to vary across the different countries. This is a simplification of an obviously more complex system, but it does not affect our conclusions. Real wages were not affected by silver prices because the same conversions were used to convert the nominal wages and prices. Any devaluations or variations in the real across Latin America were relatively small and although they would influence the nominal wage and price comparisons, they would not be large enough to change the ordinal arrangement of the cities.

NORTH AMERICA

Lindert's spreadsheet of Philadelphia prices details the silver value of the Pennsylvania shilling during the colonial period, and the U.S. dollar since 1784. We have used these values. Likewise, we have followed Lindert's silver equivalents for Massachusetts currency given in his spreadsheet for Massachusetts. For Virginia, we first converted Virginia pounds to sterling following Carter et al., *Historical Statistics*, Eg321, in conjunction with the discussion on S-699 regarding values before 1708. Then we converted sterling to silver using the values given in Allen's spreadsheet for London on http://www.nuffield.ox.ac.uk/General/Members/allen.aspx.

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[27] The correspondence between quantity of wood and BTU comes from Allen, "Timber Crisis," p. 478. The rest, as usual, are from Doursther, *Dictionnaire*.

APPENDIX TABLE 2
NOMINAL WAGES: LABORERS
(grams of silver per day)

	1500–1549	*1550–1599*	*1600–1649*	*1650–1699*	*1700–1749*	*1750–1799*	*1800–1849*
North America							
Boston			4.7	5.0	5.7	9.8	20.9
Philadelphia					8.5	13.8	24.5
Maryland				6.2	6.4	9.9	
Latin America							
Potosi				17.0	12.8	12.8	13.0
Bogota			3.2	3.5	6.4	6.4	6.9
Mexico - urban					9.1	9.1	10.1
Mexico - rural	0.3	1.9	4.3	5.6	5.4	5.5	6.1
Northwestern Europe							
London	3.2	4.6	7.1	9.7	10.5	11.5	17.7
S. Eng. towns	2.5	3.4	4.1	5.6	7.0	8.3	14.6
Antwerp	3.0	5.9	7.6	7.1	6.9	6.9	7.7
Amsterdam	3.1	4.7	7.2	8.5	8.9	9.2	9.2
Southern and Central Europe							
Valencia	4.2	6.6	8.8	6.9	5.7	5.1	
Madrid		6.3	8.0		5.1	5.3	8.0
Florence	2.9	3.8	4.7				
Milan			5.9	4.1	3.2	2.9	3.1
Naples	3.3	3.5	5.3	4.8	4.8	3.8	3.8
Leipzig		1.9	3.5	3.9	3.7	3.1	4.4
Vienna	2.7	2.6	4.4	3.5	3.2	3.0	2.1
Asia							
Beijing					3.5	3.4	2.8
Lower Yangtze			3.4	3.4	3.3	3.2	3.2
Delhi		0.8	1.3	1.6			2.1
Bengal					0.7	0.9	0.8

Sources: See Appendices 1 and 3 above; Allen, "Great Divergence"; and Allen et al., "Wages."

Appendix 4: Additional Tables

Combining the information in the previous appendices we constructed several series of nominal wages and prices in grams of silver and then welfare ratios that we show in several graphs in the article. In Appendix Tables 2, 3, and 4 below, we summarize the main figures associated with those graphs.

APPENDIX TABLE 3
CONSUMER PRICE INDEX
(cost of subsistence basket, grams of silver per year)

	1500–1549	1550–1599	1600–1649	1650–1699	1700–1749	1750–1799	1800–1849
North America							
Boston			277	176	155	215	
Philadelphia					141	203	
Maryland				132	152	182	
Latin America							
Potosi				701	566	594	612
Bogota				242	239	238	249
Mexico	109	198	391	270	249	274	353
Northwestern Europe							
London	67	128	201	220	201	264	383
S Eng. towns	67	128	201	220	201	264	383
Antwerp	83	170	214	231	205	226	276
Amsterdam	66	104	152	158	172	202	266
Southern and Central Europe							
Valencia/Madrid	144	324	439	383	328	392	
Florence	99	156	177	129	177	240	352
Leipzig		119	227	134	154	163	201
Vienna	59	96	180	127	130	165	233
Asia							
Beijing					169	200	226
Lower Yangtze			378	150	153	226	319
Delhi		38	48	66	102	107	115
Bengal				50	77	146	130

Sources: See Appendices 2 and 3 above; Allen, "Great Divergence"; and Allen et al.,
"Wages."

APPENDIX TABLE 4
WELFARE RATIOS: LABORERS

	1500–1549	1550–1599	1600–1649	1650–1699	1700–1749	1750–1799	1800–1849
North America							
Boston			1.44	2.32	3.00	4.17	
Philadelphia					4.84	5.40	
Maryland				3.67	3.35	4.18	
Latin America							
Potosi				1.83	1.82	1.75	1.71
Bogota				1.28	2.14	2.15	2.05
Mexico - urban					2.54	2.37	1.53
Mexico - rural	0.18	0.61	0.91	1.27	1.50	1.44	0.93
Northwestern Europe							
London	3.73	2.96	2.83	3.49	4.16	3.51	3.77
S. Eng. towns	2.89	2.21	1.65	2.03	2.79	2.52	3.15
Antwerp	2.88	2.87	2.98	2.48	2.75	2.48	2.32
Amsterdam	3.80	3.64	3.84	4.33	4.20	3.77	2.89
Southern and Central Europe							
Valencia	2.46	1.65	1.7	1.87	1.82	1.35	
Madrid	1.99	1.77	1.71	1.65	1.39	0.99	0.73
Florence		1.29	1.52	2.35	1.92	1.64	1.82
Milan	3.28	2.07	1.82	1.99	1.77	1.35	
Naples	2.46	1.65	1.70	1.87	1.82	1.35	
Leipzig	1.99	1.77	1.71	1.65	1.39	0.99	0.73
Vienna		1.29	1.52	2.35	1.92	1.64	1.82
Asia							
Beijing					1.25	1.04	0.79
Lower Yangtze			0.78	2.17	1.79	1.15	0.78
Delhi			2.96	2.99			1.30
Bengal					1.39	0.83	0.84

Sources: See Appendices 1 to 3 above; Allen, "Great Divergence"; and Allen et al., "Wages."

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